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Guide of Good Practices
"Exploring the Curriculum Through Nature Programs"

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Guide of Good Practices

"Exploring the Curriculum Through Nature Programs"

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Introduction

"Cherish the natural world because you are a part of it and you depend on it."

(Sir David Attenborough)

The rapid development of science and technology came with a price. Our ties to the environment are falling apart. As David Attenborough said: "We moved from being a part of nature to being apart from nature." Planet Earth is in its entire a living organism and we, the human beings, are only one component of this complex organism. The human species apparently controls everything that is on this planet, living or non-living. People exercise their power by forgetting that their existence depends on everything that planet Earth means. Every sip of water, every mouthful of food and every breath we take comes from the Earth. If we destroy it, we destroy ourselves. Why *apparently*? Because we also forget that nature still has many secrets. SHE can have unknown defense mechanisms, unsuspected fight back methods. If we only learnt something from the last lesson taught to us by a small organism called Covid19.

Can we blend the scientifical and technological development with the exploration and protection of the natural environment? Can we reach the next level of scientific development by preserving our "earthly roots"? Yes, we can. It is mandatory to be able to do this. The first steps are to be made in schools, through education. You need to know and experience in order to care. You need to care in order to protect. Here comes our part. Teachers are challenged to spread the seeds of a new approach to education, to lay the foundations for the reconnection of young generations to the natural environment. Teachers are the ones who need to find allies in the community to rethink educational programs so as to ensure *a future*.

At the beginning of this endeavor, the teachers in this partnership have used all their resources to reinvent themselves, to transform themselves into ambassadors of nature and to profoundly change their teaching practice. From the very beginning, they realized that they have a strong ally, an inexhaustible source of ideas and teaching material, nature itself. Once again, David Attenborough captured the main idea: "*It seems to me that the natural world is the greatest source of excitement; the greatest*

source of visual beauty; the greatest source of intellectual interest. It is the greatest source of so much in life that makes life worth living". Step by step, lesson by lesson, partner teachers and students discovered together how we can bring school in nature and nature in school. This book is not only a collection of learning activities; it represents our wonderful days spent outdoors, our amazing discoveries, daily challenges, big and small victories. This book is not only about learning science, math, art or geography outdoor is about discover ourselves, test our limits and become one with nature. Read it, test it, make it your own! Spread the word, plant the seeds, built strong connections. You are not alone!

Symbols and Icons

OUTDOOR	INDOOR	BOTH OUTDOOR OR INDOOR
TEACHER LED	**CHILD LED**	**BOTH TEACHER AND CHILD LED**

DOMAIN	SYMBOL CURRICULAR LINKS	SYMBOL MAIN CURRICULAR
Language and communication		
Fine arts (music, painting, drama, dance)		
Math		
Science		
Geography and astronomy		
History		
Physical education		
Spirituality		
Personal development		
Technology		

Language development and communication

Language development preschool activities:

- Guess what?
- Who am I
- Nature alphabet
- Make a sentence
- Autumn leaf colour
- Play with sounds
- Rock and write
- Graphic signs
- The talking stones
- Literacy awareness
- Nature walk
- Carnival in the forest
- Story stones
- What will it grow?

Language development primary school activities:

- What am I?
- Memory and communication
- Animal world
- A story about bees and flowers
- Healthy colous
- The story-telling stick
- The ABC mat
- Jungle A-B-Speed
- Ancient tribes
- Letters in nature
- Letters and orientation
- Leaf letter game
- Funny Alphabet soup
- Alphabetical ordering
- Writing with nature
- Lost words
- Phonetic synthesis
- A new spelling game
- Noun relay race
- From grammar to verse in spring
- Nature story with tenses
- See, think, wonder
- Autumn carnival
- Milo's Magical Stones
- The forest of Gruffalo
- Treasure hunt
- Spring is here!
- Creating a newspaper
- Storytelling Stones
- Creating a text with keywords
- Spring of creativity
- Nature and we
- Creative writing
- Magic potions
- Trees with souls

Guess what?!

Get ready

This activity is perfect for the outdoors. Before we begin, we place children in several circle-shaped groups and in the centre, one of them with their eyes covered with a handkerchief or a scarf. Then, fellow peers will have time to search for various objects around them.

Go!

Step 1. The teacher informs the children regarding the following activity. He will tell them what, how and when it will take place. Each student will have a few minutes during which he will look around for a nature element such as: a rock, leaf, stick, or a dead leaf. It is important that these elements be taken without hurting the nature, loose parts elements are recommended.

Step 2. When it's time, the teacher will tell everyone: "Please, sit back around the partner with your eyes covered, no peeking allowed."

Step 3. The child with his eyes covered will touch the elements one by one and guess what nature element it is, during this process

he will notice its shape, probable colour, its texture, its size, etc. All the children will do it, at least once, and the teacher will observe their progress in interacting with nature elements during the following attempts.

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 60 min.

AIM:
To recognize nature objects through touch, develop kinaesthetic skills, learn to work with a pair and work in teams.

CLASS ORGANIZATION:
Small groups

SUPPLIES:
Stones, leaves, sticks, bark, etc.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

The teacher asks the children: "Did we achieve our goal? How will this help me in real life?" In order for this process to be more efficient, the teacher will bring the children together in a big group with their objects and have everyone telling how the process has been for them, for example, what difficulties they have had in discovering the elements, which has been the hardest to guess and how they have felt with their eyes covered. Now discuss the difficulties that the visually impaired could face in everyday life, to make children more aware of the needs of other people.

Follow up!

- Children can use the natural elements they picked up and draw the shape of an animal with them.
- Children identify which properties of materials they can tell only by looking at them: colour, size, shape. Can eyes lie about the weight or touch?

Who am I?

Get ready

"Who am I?" is an activity meant for outdoor and indoor lessons. This is a fun and challenging activity which can be used all year round. The purpose of the present activity is to increase the children's general knowledge of different animals as well as presenting them with a way of thinking that is animal friendly.

Go!

Step 1. The teacher will attach a picture of an animal to the back of one of the children. (The child doesn't need to know what is shown in the picture!)

Step 2. The teacher will tell the child: "Please, turn your back to the other children, so that they can see the picture!"

Step 3. The child's task is to guess what animal he "turned into". In order to get the answer he or she should ask the other children various questions regarding the animal on his/her back. However, when giving answers for the questions, the children can only answer with "yes", "no", or "maybe", this way things get more challenging and fun, engaging the children's imagination.

The very first time, it could be an adult who has to guess the animal so that the children

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 90 min.

AIM:
Develop creativity, personality, language skills, working individually or in a team.

CLASS ORGANIZATION:
Groups, whole class.

SUPPLIES:
Animal pictures

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

may have an example of an applicable set of questions (they can ask about colour, size (by comparison like: is it bigger than a rabbit?), habitat, food preferences, breeding. Then children take turns to play. With younger children you can show a set of 5-6 cards before the game begins, thus making the game much easier.

Look back!

Have everyone tell how the process has been for them, for example, what difficulties they have had in guessing the name of the animal, which has been the hardest to guess and how they have felt without knowing what animal they have turned into. The teacher can also ask the children: "Do you feel any friendlier towards this animal, now that you turned into it? Have you learnt anything new about this animal today?"

Follow up!

- Try playing with other groups of words like herbs, local flowers, bugs etc.

Nature alphabet

Get ready

"Nature alphabet" is an activity meant for both outdoor and indoor lessons. This activity works best if the instruction time is short, in this case it allows the children to get at the heart of the activity as fast as possible. The approach, that the children may take, for the activity, can be either an individual one or a team-based one, depending on their needs.

Go!

Step 1. The teacher asks the children: "Who wants to start first, I need two volunteers?" Once volunteers have been found, one of them will go on to ask the other to say the letters of the alphabet, however the order should not be the standard one, but a random sequence chosen by the child.

Step 2. The child that is listening will have to look around for objects that are part of nature (if the activity takes place indoor, elements from nature can be brought to the class) and which have a name that begins with the letter mentioned.

Step 3. Once the object has been found children can either switch places, keep the same roles or work in different teams, following the rules.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 20 min.

AIM:
To develop creativity, personality, language skills, individual or teamwork.

CLASS ORGANIZATION:
Groups, whole class.

SUPPLIES:
Nature elements: leaves, sticks, rocks, dead branches, etc.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

The teacher asks the children: "Do you think we achieved our initial goal? How will this help us in real life?" In order for this process to be more efficient, the teacher will bring the children together in a big group with their objects and have everyone telling how the process has been for them, for example, what difficulties they have had in discovering the elements, if the elements easy to find, which has been the hardest object to find and how they have felt when finding an object or when they didn't find it.

Follow up!

- The first child can say two letters, the second child finds two objects starting with the corresponding letters and the first one makes a sentence with these two words + other words at his/her choice.
- The first child can ask the second child to find objects that do not begin with a certain letter, but have that letter in the middle or in the end.
- Find letter shapes in the surrounding nature.

Make a sentence

Get ready

Gather all the children in a circle and show them a rock and a leaf. Ask them to look around and get up to 5 rocks and one leaf. No matter the season, you can still find leaves on the ground, so there is no need to take from living trees or plants. Give the children a couple of minutes to find the materials, then you set two rules for this activity: 1. Work with rocks so that you and the others are safe, 2. Take turns to speak.

Go!

Tell the children that the rocks and the leaves will be used for forming sentences. Make sure children remember what sentences are. They will be successful if they can make up sentences where the leaf stands for the word *leaves* (in Romanian both a and the leaf are just one word, but in English there would be two words, that is why I chose the plural) while the rocks stand for other words in a sentence.

First, children should place just the leaf and a rock on the ground. "Please, make up a sentence with two words where the leaf stands for the word *Leaves* and the rock

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 30 min.

AIM:
To develop sentence building skills with a given number of words; develop sentence making skills with a given word.

CLASS ORGANIZATION:
Whole class or groups + individual practice

SUPPLIES:
Rocks and leaves.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

stands for any other word that you choose." (Leaves fall.) Ask several children to give examples. "Now, let's add another rock. How many words will the sentence have? (Three) and *leaves* is the first word. Can you give an example? (Leaves fall slowly / Leaves dance around) ". Therefore, on you can add up to a sequence of one leaf and 6 rocks. It is a good idea to show the leaf and rocks while saying each word in the sentence. It becomes much easier to form sentences.

Now, let's get creative. "Move the leaf from its front position to any other position (between any two rocks or at the end of the line of rocks). You can also remove rocks or add one-two rocks if you feel like it. Can you create a sentence to match the chosen structure?"

Look back!

Get the children again in the circle and discuss how successful they were in respecting the rules and completing the tasks. "If we compare the short to the long sentences which of them has a more powerful impact? What happens if the sentence is too long? How would you feel about using longer, more developed sentences?"

Follow up!

- You can play another game, asking a child to say a number from one to six. The children will make sentences with this number of words using rocks and touching a rock for every word.
- You can ask the children to pick a natural element that they like. To develop language sense you can ask them to name the word then add one, two, three, four and five words to form new sentences longer and longer sentences.

Autumn leaf colour

Get ready

"Autumn Leaf Colour" is an activity meant for outdoor lessons. In order for the activity to go smoothly, its instruction time should be kept to a minimum. The approach for the activity, that the children may take, can be either an individual one or a team-based one, depending on the needs of the children.

Go!

Step 1. The teacher presents the children with a set of coloured cards and asks each of them to get multiple cards.

Step 2. The teacher asks the children to explore their proximal environment in search for leaves that match the colour of their cards. The children scour the area around them in order to find all kinds of coloured leaves.

Step 3. This activity can end in one of the following two ways: a. the first child or team that finds the matching coloured leaf/leaves wins; b. if the time has expired, the teacher signals the end of the exploration phase and the children/ the teams that have matched the most leaves and cards are declared winners.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 15 min.

AIM:
To develop creativity, personality, language skills, working individually or in team.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Tree leaves, coloured cards

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

The children learn to use personal experience and knowledge and learn to communicate with other team participants. At the end of the activity, in order to ensure a great feedback moment, the teacher will ask the children one, or more of the following questions: "Do you think we achieved our goal? How did you feel about finding so many differently coloured leaves? Were there colours that you couldn't match to the leaves? What colours did you find? Is this light brown or dark brown?"
In order for this process to be more efficient, the teacher will bring the children together in a big group and have everyone telling how the process has been for them, for example, what difficulties they have had in discovering the leaves and associating them with the coloured cards, which leaf has been the hardest to find, how they have felt during their detective activity through nature, or what was new and most interesting for them during the task. The children can also talk about how their experience of working individually or in a team went.

Follow up!

- Arrange the leaves in chromatic order!
- Create together a legend that would explain why leaves change colour in the fall.
- Make a leaf colour chromatography experiment: https://www.youtube.com/watch?v=qH-AJDqsSII

Play with sounds

Get ready!

First, prepare 4 sets of cards with images of local plant species and 4 sets of cards with their names. Make sure that the plants you choose for the images can be found in the outdoor location you choose for the lesson.

Next, collect chestnuts, walnuts, fir cones, short and longer sticks and split the natural materials into 4 baskets. Divide the class into 4 teams of 5 children. Each team is given a basket of collected natural materials.

Go!

We start with the game *Match the plant with its name*. There is a set of cards with pictures of plant species and cards with their names for each team. Each team must correctly place on the plant card the appropriate card with the name of that plant. After remembering the plants, the teams are asked to find as many of the plant species as possible, within 15 minutes.

The plant is not to be uprooted but next to each plant, the children model the phonetic composition of its name with chestnuts, nuts and cones.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 25 min

AIM:
Phonetic analysis of words and making a sound/ phonetic model; constructing a sentence by combining the words in meaning and making of its model; reinforcement of plant species vocabulary;

CLASS ORGANIZATION:
Groups, whole class.

SUPPLIES:
Cards with plants, chestnuts, nuts, fir cones, short and long sticks, cards with pictures of plant species and cards with their names

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Chestnuts will replace consonant sounds and walnuts will replace vowels. The number of cones will be determined by the number of syllables in the word.

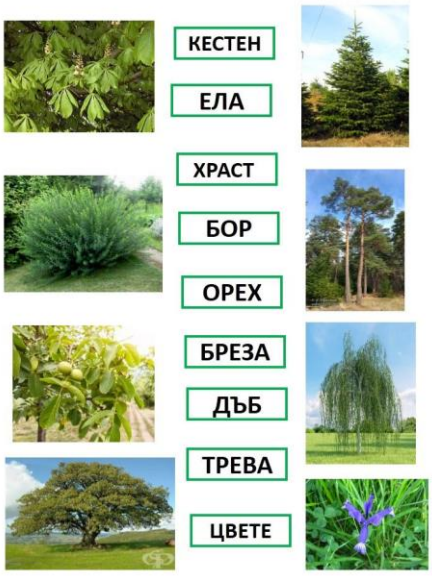
For example, Birch (in Bulgarian BREZA) - chestnut-chestnut-walnut-chestnut-walnut. Under the model are placed two cones for the two syllables in BREZA.

Each team makes a sentence which includes the word for the plant and models the sentence with the short and long sticks. Each team tries to find more plants and work out appropriate models.

Teams gather and present the result of their work. First is the team that found the most plants and arranged the models correctly.

Look back!

Through play, children enrich and reinforce their ideas of language terms (sound, syllable, word, sentence) and recall the names of plant species in the nature around us.



Follow up!

- You can start by giving them a model of a word like chestnut-walnut-chestnut, where walnuts are vowels and chestnuts are consonant. Can they come up with a word? What if we add more chestnuts and walnuts?

Rock and write

Get ready!

Nature always gives us the best opportunities to learn about it. Rocks come in lots of different shapes and sizes, and there's never a short supply of them, let's use some for writing! Collect stones and sticks, either with the children, or yourself beforehand.

In order not to disrupt nature, make sure to use only materials that are already on the ground, as much as possible.

Go!

Step 1. Gather the children into a circle and sit.

Step 2. Ask the group to imagine what we can make with the materials we have gathered. The teacher will try to elicit answers such as: "We can build, throw them, make shapes and patterns, play games and write with them. Let's try to write our names."

Step 3. Each child takes some of the materials and starts constructing the letters of their names.

Step 5. The children compare their work.

If you would like, you can take a photo before you leave it behind for someone else to admire. You could observe if they used small captions or big captions, if they used diacritics or if they wrote their family names, too.

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 20 min.

AIM:
To practice pre-writing skills in nature; to develop divergent thinking; to have fun!

CLASS ORGANIZATION:
Groups

SUPPLIES:
Stones and sticks

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

To ensure that a great feedback moment will follow, the teacher may ask the children: "How did you feel about writing your names with rocks? Have you ever played this game? Did you use rocks with different sizes and shapes? Have you ever seen names of people when hiking?" Use this opportunity to talk about the habit of some people to carve their names in three barks or write it on cave walls. "Does this feel right? Why?"

Follow up!

- The materials can also be stuck onto many surfaces using mud or clay;
- You can ask the children to write other words with the letters that make up their names.

Graphic signs

Get ready

Cursive writing is a fast, convenient way to record information. Even if we are in a digital era, cursive writing is still part of the school curriculum in most countries. The foundations of cursive writing are built in preschool when we practice graphic signs.

Before the lesson, prepare the necessary materials (permanent markers and fabric, paper, cardboard with patterns of graphic signs).

Start in a circle and show the children a walnut leaf. Let them feel and smell it and guess what type of leaf is. You could talk about two-three interesting facts about the nut tree (for instance that it produces chemicals called *juglone* which prevent the growth of other plants in the close proximity of the tree or that the bumpy textured meat inside a nut resembles the human brain). Then invite the children to go and find nut leaves and take 2-3 per child, preferably from the ground.

Go!

Once they are back with the leaves, tell the children you are going to practice writing on … leaves. The expectations for this lesson are: to use the materials for the game and to try to

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 25 min.

AIM:
To lay the foundations for cursive writing by practicing the writing of straight and oblique lines, points, vertical and horizontal lines, circles, ovals, spirals, hooks.

CLASS ORGANIZATION:
Small groups, individual

SUPPLIES:
Permanent markers, walnut leaves, materials with patterns of graphic signs

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

copy the graphic signs on the leaves. Let them observe closely the materials with the graphic signs and choose their own patterns.

I tell the children the main objectives of the activity: to be able to reproduce the graphic signs observed on the presented models, but also to write other previously learned signs, to write graphic signs following a certain pattern, to grasp a pencil and to sit for writing correctly. Even if this lesson was designed for the outdoor environment, some tables and chairs would be necessary for this activity.

Give the children type to study the materials and point out the special features such as sticks, curves and tails. It's time for the fingers warming-up game, which we do before every writing activity. I recommend children to practice writing the sign on the back of the classmate that sits on the right before actually writing it on the leaf. They use their index fingers for this and not the marker, of course.

Each child is encouraged to create their own model of graphic signs, to name the signs, to make associations between the model created by them and the presented models. Offer help at request and further explanations if needed!

Look back!

After all the children have finished writing, let them present their leaves and talk about their favourite graphic signs. Emphasize that they precursors to writing letters and numbers, so they are very important in everyday life. Ask the children where have they noticed certain graphic signs.

Follow up!

- Follow the link below for associations of graphic signs with letters and numbers https://activitatiprescolari.blogspot.com/2015/10/semne-grafice-prescolari.html
- Art: paintings or drawings using graphic signs https://kinderart.com/art-lessons/drawing/lines-of-all-kinds/
- Watch short videos about how you can use the tracing of the numbers for making a drawing https://www.youtube.com/watch?v=VvIqKOTvTsA

The talking stones

Get ready

Gather all the children in a circle and do some warm up activities to make sure you have all the kids connected. Now is the time to repeat the rules you set with the children for this activity. These rules can be made using the game "Mirror, mirror" (the teacher or a child says a rule and the others repeat it just like a mirror). Prepare the stones with letters on them and the word boards for the activity.

Go!

Get the attention of the children by showing them the stones in the box and let them make suggestions about the next activity. Because letters are written on stones from which words can be created, we can call them "Talking Stones". Show the children the materials used for the activity (smaller case stones, sheets with words written in upper case) and the objectives of this activity. Tell them that you want them to associate the capital letters with the small case letters, they will pronounce them and then, they will form words. The words written on the boards should be the ones in the active vocabulary of the weekly theme, for example, the theme is autumn colours, you can write words like: "golden",

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 30 min.

AIM:
To understand and read the written message in capital letters; rewrite a message in the small print letters; develop reading skills; develop love and respect for nature by reusing natural elements for other purposes; develop communication and team work skills.

CLASS ORGANIZATION:
Whole class and small groups.

SUPPLIES:
Letters with stones, boards with different words written in large print letters.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

"red", "yellow", etc. Divide the children into teams and make sure that each team has as many different written word boards as children in the team. Each group will have the same types of boards and stones with letters. While each group works, observe if all the children know the letters associate them and pronounce them correctly. Even if each child in the group will have different words, it is important that they work in the group and not individually, the goal is to help each other. After each child has properly matched the upper case letters with the small print letters, go to each child and read together the formed words.

Look back!

Children have always liked to play with stones and are very receptive when you give the stones use stones in a different way. At the end of the activity, my class found other ways to user the "Talking Stones": some kids formed new syllables and words, others put all the stones together and began to make patterns, and others created different shapes.

Follow up!

- Use letter stones for games such as "Tic-tac-toe", "Mixed letters", Rebus, memory games.
- Paint by making stone stamps and create your own designs.
- Encourage children to form their own syllables or words.

https://www.youtube.com/watch?v=tAn48s2frXs – training exercises for the activity
https://www.youtube.com/nwatch?v=r2tBH_XyeJc- exercises for fingers.

Literacy awareness

Get ready

This is not quite a lesson but a collection of activities that can be run with the help of the *Literacy Kit* described below. It was made by a grandpa with three boards and a birch branch. 10 hooks were attached to the branch. Next, the teacher wrote letters on small wooden slices (the same letter in upper case on one side and the lower case on the other side). Each letter appears several times, vowels appearing even more often than consonants. Each letter has a screw with a ring attached, that matches the hooks in the branch. It is a good idea to keep the letters in a special box or in a basket. The kit is safe and easy to use and our children loved it!

Go!

Introduce the kit to the children and show the different parts. Ask each child to practice putting the letter into a hook.

Activity 1: Place on the desk 3-6 letters (all upper or all lower case, for example: s,a,c,f,v or S, A, C, F, V). Ask the children to find the letter for the corresponding sound. For example, the letter for the sound /s/. The child finds the letter and places it into the hook.

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 25 - 35 min.

AIM:
To develop emergent literacy skills, develop phonological awareness, recognize upper and lower case letters.

CLASS ORGANIZATION:
Groups of 3-4 children, individual.

SUPPLIES:
Literacy Kit

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Take another letter from the basket and replace the missing letter. Challenge: you can ask one of the other children in the group to name the letter.

Activity 2: Place upper case letters on the desk (for example: U, N, D, P, E). Ask the children to find the corresponding lower case letters and put them on the hook in the same order (u, n, d, p, e). Challenge: ask one child to select the letters for the group or start with the lower case letters.

Activity 3: Write words made up of 2-5 letters in upper case with letters placed on the desk. Ask the children to *write* the same words with lower case by placing the letters on the hook. Challenge: increase the number of letters.

Activity 4: take out up to 7 letters and place them on the desk (t, i, a, l, e, b, m). Make a word with 2-5 of those letters (for example: *mat, table, beam, team, tail)*. Ask the children *write* the word themselves using all upper or all lower case letters by placing the wooden slices on the hooks. Challenge: can the children come up with the word?

Activity 5: Ask children to come up with words made up of 3-7 letters. Each child whispers the word into the teacher's ear then *writes* his word with the kit (they will probably need some help). Each child tries to read the word and draws the object on a paper. Finally, they all show and compare their drawings.

Look back!

Talk to the children about their favourite game. Ask them to invent their own game.

Follow up!

- If you make the kit with 10 hooks you can use it for Mathematics to practice numbers 0-9.
- This kit can be used in foreign languages classes (for example to practice writing words in English with short and long vowels).

Nature walk

Get ready

"Nature Walk" is an activity that is meant for outdoor lessons. In order for the activity to go smoothly, you will need a basic worksheet to record and write down what you come across during your nature walk. This could be a walk around the school- garden or a walk organised during trip. This worksheet contains 5 boxes, each for a different sense. I can see... I can hear…I can smell… I can touch….I can taste…

Go!

Step 1. The teacher gathers the students around giving each of them a worksheet.

Step 2. The teacher provides them with the following instructions: "We will take a walk in nature, your mission is to write down on the worksheet you have received, the things that you will come across during our nature walk. You may do this by writing certain things about what you see, or you may draw certain characteristics of the objects that you will encounter." This step is followed by a short feedback to check if the instructions were clear.

Step 3. The children walk around nature and draw/jot down the things that they encounter and the senses involved.

Step 4. After having taken their walk, all the children present the information they wrote.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 90 min.

AIM:
Develop interest in the natural elements, develop a friendly attitude towards nature and develop their intelligence by having all the senses involved in the activity.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Worksheets; pens and crayons

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

At the end of the activity, in order to ensure a great feedback moment, the teacher will ask the children one or more of the following questions: "Do you think we achieved our goal? How will this help you in everyday life?" In order for this process to be more efficient, the teacher will bring the children together in a big group and have everyone telling how the process has been for them, for example, what emotions they have had in discovering the sights, sounds and elements of nature, which has been the hardest to describe, how they have felt during their detective activity through nature, or what was new and most interesting for them during the task.

Follow up!

- Take some of the common things the children observed (for example probably more than one child observed the dandelion). Write the word *dandelion* or draw one, and write or draw all the descriptions made by the young learners. Can they come up with more descriptive words?
- Use the above mentioned exercise to talk about different points of view. We may see things in a different way from another person and each perspective is valid. It is just all right to have different opinions on things.

Carnival in the forest

Get ready

Start this activity by taking the children outside to observe the trees in autumn. "What colour are they? Do trees come in one colour or in many colours? What does the colour of the leaves depend on? Why do you think that the leaves turn yellow, red, orange or brown in autumn?"

Collect autumn leaves in different shapes and colours.

Let the children know that the falling of the leaves is a vital process for the trees and bushes, as their leaves evaporate a lot of moisture. Also, if snow fell on broadleaves, these would become too heavy for the tree, and they would probably break it. Think for instance of the difference in the shape of the leaves and shape of the branches between deciduous trees and evergreens.

Go!

The children are in the schoolyard. The teacher tells the class a riddle about the trees. After the students tell the answer, he/she invites them to describe the trees around them.

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 35 min.

AIM:
Creating and presenting characters from a poem.

CLASS ORGANIZATION:
Groups, whole class.

SUPPLIES:
Leaves (various in colour and shape), foil

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

The children listen to the poem „Carnival in the forest", explain what the mood of the poem is and how they feel when they listen to it. Ask the children to explain all difficult words. Learn the poem with the techniques that you usually use.

Next, ask the children to represent the carnival of leaves. They should bring the collected leaves to life by putting little eyes and smiles on them. Just like people, leaves can exhibit different moods (happiness, excitement, surprize, impatience etc.), they can body parts shaped in very different ways (for example eyes can come in different colours, they can be round or long, big or small etc.).

When all the leaves have a personality of their own, the students can arrange the leaves on foil – thus the leaves "are going" to a carnival.

Look back!

Finally gather the children back in a circle. Now, it is time for reciting the poem "Carnival in the Forest" with the leaves displayed.

Follow up!

- Ask the children what words / expressions would they use in an autumn poem.
- Use other poems, stories, legends and fables to role-play during language development activities.

Story stones

Get ready

Find or buy some rather flat stones. Make sure you clean them with a dish washer and let them dry. Paint or ask the children to paint/draw something on each stone. The drawings can be static or represent something moving, they can have a theme (like the *Outer Space* or *Critters*) or be the result of free imagination. Make several kits of story stones.

Go!

Gather the children in a circle and show them the story stones. Discuss what some of them represent. Ask the children to make 2-3 sentences with the pictures on some of the stones.

Now, take out three stones. Can they make a story that contains the three words represented on the stones? Discuss with the children a few *ingredients* for a good story like: good setting, memorable characters, suspense and tension, satisfying endings.

After you practice, make groups of 4-5 learners. It would be fantastic to have an adult monitoring each group! Each group should have a stone kit. Take out one stone at a time and put it in a line. Start the story yourself, and ask volunteering children to continue the

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 20 min.

AIM:
To develop language sense and story telling skills.

CLASS ORGANIZATION:
Whole class and groups of 4-5 children.

SUPPLIES:
Stones, paints or markers, paintbrushes, etc.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

story with every stone. First, accept all ideas, even if the story is a bit chaotic, illogical or too fantastic. Each child can tell one or more sentence for every piece or rock. When you take out the last stone, ask for an ending of the story.

Look back!

Gather the children around and talk about the experience: "Did you find the activity easy or difficult? Which part was difficult and what can we do to make it easier? Does the story make sense? Would you change anything on your story?" Talk about the ownership of the story (chain stories are owned by all the children who created them). You could record the stories and share them with the parents.

Follow up!

- With children younger than 5 you can try just naming the picture on the stone, use a descriptive word (like colorful rainbow, delicious ice-cream) or make a sentence (example: The children are in the boat under the starry sky).
- Keep practicing using the story stones to develop their speaking skills. Point out that the same stones can be developed into completely different stories. Step by step, the children will understand story sequence (what comes first, next, last).

What will it grow?

Get ready

Creating a vegetable patch can be an occasion to work on a series of competences that are not solely related to science, arts or crafts. Children enjoy activities like: mixing the soil, digging, sowing seeds, watering plants, clearing the plants of the weeds, observing how they grow, eventually tasting the strawberries, carrots, tomatoes, and lettuce which you were able to obtain. Besides all this, we can actually explore other activities that are related to gardening, that will stimulate children's imagination, and help expanding their vocabulary and abilities to describe their ideas.

Go!

After having sown your first seeds or planted the little plants in the school vegetable patch invite your children to sit in a big circle. Tell them to close their eyes, and imagine what will happen when what they have sown will start to grow. Guide them through a brief meditation activity. You can decide to make them act out the story with their body. First, they are a little seed sleeping in the terrain, then they start stretching a little bit, and gradually they grow out to become a sprout

CURRICULAR LINKS:

AGE GROUP: 4+

TIME:
30 min. meditation activity;
30 min. circle time discussion;
40 min. drawings, clay moulding

AIM:
Development of imagination, creativity, logical competences, ability to form hypothesis, and draw conclusions.

CLASS ORGANIZATION:
Groups, whole class.

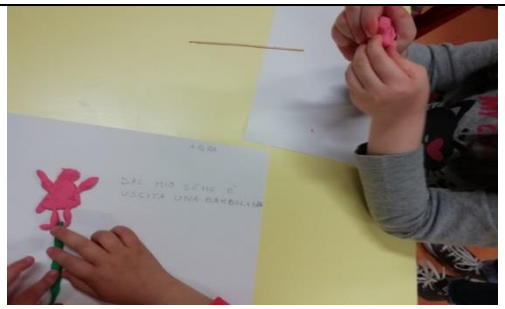
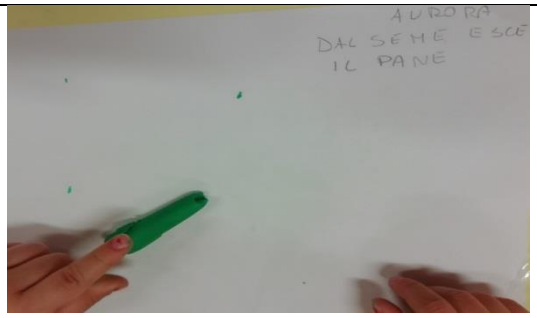
SUPPLIES:
White drawing pads, felt tip pens, play-dough or clay.

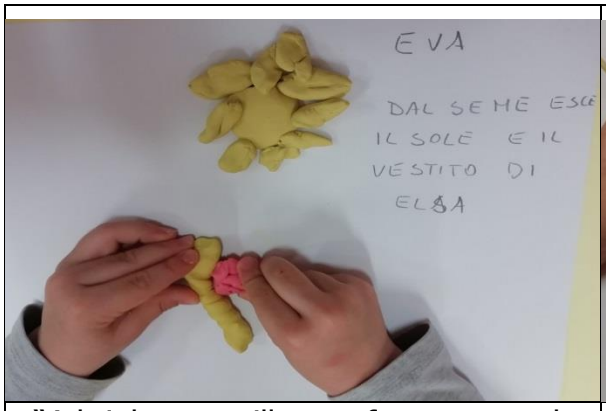
OUTDOOR/INDOOR:

TEACHER/CHILD LED:

that gets taller, and taller, and finally, they grow into a big plant with fruits. Inform your class that for this activity, what exactly will grow from the seed they planted is a question open to investigation. Tell your children it is time to have fun, and explore with their imagination about what could grow from a little seed. Invite them to use their best imagination, but do not offer examples, rather ask them for examples.

Let the children choose, they can draw, model with play-dough, or describe what will grow from their seeds.

"Green Polpette from my seeds"	"Pink ice-cream from my seeds"
	
"Chocolate ice-cream and a doll"	"A red heart for my flower"
	
"I am pretty sure a little funny doll will sprout from my seed"	"A green loaf of bread"

	
"A bright sun will grow from my seed, together with Elsa's pink gown!"	"Some green hearts"

"From my seeds a green pizza, and delicious ice creams will grow"

Here I summarized the conversation from our four and five year old class in San Carlo pre-school*:* "(Martina) I would like a tasty chocolate ice-cream from my seed; (Aurora) I would like some chips and grapes from my seed; (Ambra) I do not want food, I would like felt tip pens to draw and write; (Faisal) I would like a plant that produces hamburgers with mayonnaise and ketchup; (Eleonora) I would like a nice brush to brush my hair, (Giovanni and Liam) Our plants will grow the costumes of our super heroes Dragon Ball, Sonic and Flash; (Eliana) Tomorrow when we come back to school, I am sure I will find a huge flower; (Elias) Maybe I will find a kebab, I like kebab sticks.

Teacher: So do you think that tomorrow when we come back we will find all these things? If this is the case, I will ask the fairy for a pizza;

Children: Noooo, (Martina) I think the fairies are doing this magic, because in real life seeds just turn into plants, flowers and bushes; (Giovanni) Exactly, this was just a joke! Only plants grow from seeds, human beings do not; (Rachele) Fairies do not exist, (Faisal) Fairies are a fake; (Eleonora) I think fairies do exist, they live in the woods; (Eva) You are wrong the only fairy that does exist is the Tooth fairy!"

Look back!

Our children really enjoyed this activity. Children love to work with their fantasy and imagination. Activities of this kind can be presented more than once in different forms, children love repetition and each time they will add some new detail to their work. Most of our children proved to be aware of the difference between reality and fantasy. This is an important detail to consider when you observe your class, together with the ability to form hypothesis and draw logic conclusions from the hypothesis that were offered. Children whose mother tongue is different have more difficulties in expressing their ideas, their priority is to express their needs and feelings.

Follow up!

- The following class start from the picture of the child's modelling and his/ her sentence ("A red heart for my flower") and ask him/ her to develop the idea and tell you more ("Why is this flower so important to you? How do you take care of your flower? Why do you think the flower also needs love?")
- Watch the seedling form and grow and describe them in different stages using more and more developed vocabulary and complex sentences.

What am I?

Get ready

Choose a space with various and different natural elements. If this is impossible, you could collect natural elements and scatter them around the area you have chosen, prior to the activity.

Your students should be divided into teams of 10-15 people. Each student needs to find a natural element in the area you are and bring it back to their group. Design and shape a circle in the middle of the ground where students will come back and place the natural elements they found. Then ask the whole group to sit around the circle.

The next step is to explain to your students that they will play a game which needs observational skills and open mindedness so as to come up with interesting and challenging questions.

Ideally, the activity should be completed in a circle by the kids themselves, who can take initiative and decide for a coordinator amongst them.

Go!

One by one, the students should think of anitem of their choice (not the one they picked

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 15 min

AIM:
Speech and writing development, combinatorial thinking, vocabulary development.

CLASS ORGANIZATION:
Groups

SUPPLIES:
Natural elements

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

necessarily). The remaining children are restricted to 4 questions each, in order to find what is the item the student has in their mind. However, the questions can only be answered with a YES or a NO.

Each time that the team finds the item in the students' mind, this particular item gets removed from the circle.

Contrarily, there are two other ways to move forward:

- The one who thought about the item reveals what he/she had in mind.
- The item remains within the circle without revealing it was in the student's mind so that someone else has the chance to pick it in the next round.

The game finishes once all of the items have been picked and found by the teams or when you are out of time.

Look back!

Gather your group in a circle: Discuss with your students how easy/ difficult it was for them to come up with the right questions to find the secret item. Did they apply any strategy when asking the questions (maybe they went from general to particular, or first wanted to have an idea about what the object looks like) ? Were there appropriate questions for more than one item to be found? Allow the children to reflect and express their thoughts and emotions on the activity.

Follow up!

- Ask the children to close their eyes and hide one of the objects. Can they tell which object is missing? What does it look like?

Memory and communication

Get ready

The group gets divided into teams of 3-4 people. Each group is given particular natural materials which they can use. In each round, one designated member of the team has 1' to observe and memorize a design made out of natural material in order to describe it to the rest of their team. The aim of the game is to recreate the original design that the designated member has memorized.

Make sure to motivate the students to find strategies that could help them solve the problem and recreate the original design. For instance, "What is up and left? How many wooden sticks did they find in the original design? How is everything oriented?" and so on and so forth. The rest of your colleagues should be engaged in the activity so as to assist the students in finding solutions and following effective strategies.

Go!

The coordinator of the game divides the teams and hands out the material they need. It is advised that the teams sit far away from one another so that there are no distractions and so that they create their own unique interpretation of the original design. Firstly,

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 30 min

AIM:
Develop memory, recognition of positions, and communication of thoughts.

CLASS ORGANIZATION:
Teams of 3-4 learners

SUPPLIES:
Natural materials (small rocks, oaks, wooden sticks etc)

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

the coordinator creates a random design with their own material (e.g. 2 small rocks, 4 sticks and 3 leaves). In continuation, they ask from the designated observer-students of each team to come close to observe and memorise the design. The students go back to their team and describe verbally what they saw in the best way possible so that the other members recreate the design. When the design is complete, each team calls for the coordinator to see if everything has been done correctly. If something is missing or misplaced, the coordinator could give a second chance to the observer-student of the team to observe the original design for another 30" and go back to correct the mistakes made. The game can be repeated as many times as the coordinator wants by appointing another member of each team as an observer.

Look back!

Gather your group in a circle: Discuss about the strategies used by each team. Were they effective? Did the group communicate their thoughts well? Did they place all items in the correct positions? Was it challenging to remember where everything should be placed? Allow the students to discuss and express their thoughts and emotions.

Follow up!

- This can also be done in pairs: each child has the same set of items (1 stone, 3 sticks, 2 acorns etc.) The children sit back to back and one begins creating a design with the items while at the same time describing to the other child how to make it. When they are done they compare their designs.

Animal world

Get ready

Students are divided into two teams. Each team receives a piece of paper describing five animals (sea animals for team 1 and forest animals for team 2) and natural materials with letters (shells with letters for team 1 and leaves with letters for team 2).

Go!

Students read the descriptions and guess which animals are described. They write the names of the animals using their natural materials.

Then, the pupils in team 1 show which animals are on their list using actions and gestures. The students in team 2 guess which animal is being imitated. Then the teams change roles.

Each team then explains what all the animals in their list have in common - the same environment (the sea and the forest).

Students from both teams complete their lists with other animals from the same environment.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 30 min.

AIM:
Practising vocabulary related to animals; developing speaking and reading skills; enhancing teamwork skills; developing creative and artistic skills.

CLASS ORGANIZATION:
Small groups (maximum 5 pupils in a group).

SUPPLIES:
Shells and leaves with letters, sheets of animal descriptions.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

Each team makes an animal from natural materials and describe it to the other team. They guess the animal.

Evaluation: Put sheets of paper saying WONDERFUL, GOOD, ACTIVE, and INTERESTING at different places/corners. Participants choose how they feel and place around the corresponding word. They share what makes them feel like that.

Follow up!

- Students may try to make a description of an animal.
- They can make a presentation about that animal.
- Make photos of the animals made by natural materials and create an e-book or photo album.
- Find out stories about these animals and later read them in front of the class.

A story about bees and flowers

Get ready

Students form teams of 5 children each. Mutual assistance is acceptable. Each team receives a maze scheme. The teams go through their maze, solving a few math tasks. At the end of each maze there is an envelope. In the first envelope there is a riddle for a bee and in the second for a sunflower.

I am an insect / A hive is my home.
I eat some pollen/ To make honeycomb.

This is a type of plant / Very tall it can grow.
It gives seeds and oil / Its color is yellow!

Go!

Each team has 15 minutes to solve the riddle and to create a bee or a sunflower of natural materials.

Once the bee and sunflower are ready, the teams present them. The first team will name the body parts for bees as well as interesting pieces of information that they can share about bees. The second team does the same for the sunflowers. Once each team finished their presentation, the other team can also add information or appreciate content.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 60 min.

AIM:
Self-checking the level of learning and the ability of students to practice.

CLASS ORGANIZATION:
Small groups of 5.

SUPPLIES:
Envelope with riddles for each team, maze scheme for each team, natural materials for applications

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

Finally, the participants can dance like bees and flowers. As a prize for the hardworking bees and flowers, indulge them with aromatic forest honey.

Follow up!

- In order to revise knowledge on body parts you could play the following game: ask one of the children to stand in the middle of the circle of children. Make a joke that you think that the child is an insect/ amphibian / reptile / bird / tree/ bush etc. Ask the children to prove with arguments that it is not the case.

Healthy colours

Get ready!

Each student receives a leaf and a twig. Different seasonal fruits and vegetables are placed on a table in front of the students. Remember the hygiene rules when it comes to eating fruits and vegetables or performing activities that involve handling objects.

Go!

One fruit/vegetable is shown to the students and the teacher says what color it is. If the sentence is correct, they lift the leaf. If it's wrong, they pick up the twig.

For example: The teacher shows a red fruit and says "It is yellow." This is not correct and they pick up the twig. The teacher says the correct sentence "It is red."

The activity continues with all the fruits/vegetables using longer sentences. For example: The teacher shows a yellow banana and says, "It's a yellow banana." Then students are asked to form sentences like: "It's a blue banana." or "It's a yellow apple." Students determine whether it is right or wrong by lifting a leaf or a twig.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 50 min.

AIM:
Practice and develop colours, fruit and vegetables vocabulary; Develop attention and listening skills.

CLASS ORGANIZATION:
Whole class.

SUPPLIES:
Fruit and vegetables of different colours, leaves, twigs, scissors, eco-friendly glue, cardboard, a bowl, biodegradable knives, plates, cups and teaspoons.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

All the children make a circle and share what is their favorite fruit/vegetable and favorite color. They are asked to specify a dish made with that fruit or vegetable. A fruit salad is always a great treat! Using only biodegradable cutlery, cups and plates some of the students cut and mix fruit for a seasonal salad. The other students make collages - baskets with fruit and vegetables using leaves, twigs and eco-friendly glue. In the end, all the students taste the salad and admire the crafts made by their colleagues.

Follow up!

- Students can learn song about colours and fruits.
- Students can make a leaflet or a poster with the steps of preparing a fruit salad.
- Older students can make a book with description of the fruits and their healthy qualities.

The story-telling stick

Get ready

The men in the aboriginal tribes of Australia used to set off a trail of purification which lasted several years. The would carry a stick and if they passed a significant place they would pick a bone, a leaf or a piece of rock to be fixed on the stick. Once they arrived home, they would use the things attached to the stick to retell their magical voyage. The aim of this activity is to create a message stick or a story-telling stick like this, but for a shorter trail. Therefore, to prepare the lesson you need rubber bands (about 2 per child). Each child will find a stick, as straight as possible and a little higher than their waist. You need at least two accompaning teachers per class.

Go!

Start in a circle and set clear rules (1. I stay with the group and 2. If I get lost, I hold to a tree and wait for the group to come back for me). Talk to the pupils about walking conditions (mud, steep ravines etc.) and safety measures. If there are harmful plants in the area, the children should be aware about them. Ask each child to place the two rubber bands on their stick and talk to them about the story-telling stick in Australia.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 45 min.

AIM:
Develop vocabulary and story-telling skills; develop knowledge about local plants and animals.

CLASS ORGANIZATION:
Whole class or group of pupils

SUPPLIES:
Sticks, rubber bands, plants from the environment.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Before leaving, make sure you check the footwear and clothes of every child (shoe laces should be tied, hats and gloves for wintertime, no jackets or bags in their hands etc.) You should know the trail very well and establish some stop-points beforehand. About every 10 minutes, you could take a break for the children to observe interesting things, you can tell amazing stories about the surrounding nature, talk about childhood memories or play a game. Take advantage of happy encounters (a running dear, a special mushroom, a breeze of wind playing with a leaf) and talk to the children about what they see. Create some magical, memorable moments. Do not forget to mark these moments with a memory like a leaf, a flower, a mushroom attached to the stick.

Look back!

The activity ends with reflection time which the children retell with the help of the stick their experience. At the end, explain the importance of keeping traditions and respecting different cultures and appreciate special moments like someone that picked a can from the ground, children helping each other or a child who shared an interesting experience.

Follow up!

- This lesson was inspired by the book *Play the Forest School Way, Woodland Games, Crafts and Skills for Adventurous Kids* by Jane Worrol and Peter Houghton. Try other activities from this wonderful book.

The ABC mat

Get ready!

On the playground or in the woods, lay down a mat that shows the letters of the alphabet. The aim is for pupils to notice the details of their surroundings and match each letter with a natural object beginning with that particular letter. A normally insignificant stone can now grace the S letter and a bit of moss can take its place on the M. Pupils scan the area and try to name both small objects and large objects in their hunt for the correct first letter.

Go!

Divide the class into groups of 3 or 5. Each group is given an ABC mat. They must find an object for each first letter. If they cannot take the object they can draw it near the corresponding letter. They say the word and spell it. This activity can be done in a competition where each letter of the alphabet gives 1 point and there is a limited time. The groups receive 2 points for each specific object they can find and associate: a leaf on the L receives 1 point, while a maple leaf on the M receives 2 points.

The activity can be repeated with slight changes:

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 30 min.

AIM:
Improving grammar, practicing foreign language skills, developing empathy and expanding vocabulary.

CLASS ORGANIZATION:
Small or large groups.

SUPPLIES:
ABC mat showing the alphabet, natural elements.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

- Collect nouns, adjectives or verbs
- Collect opposites
- Collect species
- Collect imaginative words
- Allocate points for synonyms
- Collect objects that rhyme

Look back!

Students can discuss what they have seen and felt. Do they know a tale, a story, a movie, a rhyme or a song about the objects they have found? What could each object tell?

Follow Up!

- Students can make the letters of the alphabet using natural objects – sticks, stones, pine cones.

- In math classes they can write numbers and draw figures.

Jungle A~B~Speed

Get ready

You will need to find a quiet and calm place in an outdoor environment in order to play this game of concentration and vigilance. For instance, away from others in the group who run or attend other activities which may draw one's attention.

Depending on the environment you have chosen for the group, use an item as a table. You only need a small surface so as to place a pine on its center. For example, you could use a tree stump. Once you set this up, divide your group into teams of four. The game can be coordinated either by a teacher or by one of the children in the group.

Go!

To begin with, the teacher needs to explain to everyone how the game is played. All kids should stand around the table and have equal distance from its center, where the pine is placed. The coordinators start by silently running the alphabet in their mind until someone says "stop" so that they say the letter out loud for everyone in the group to hear. The kids should then think of a word that starts with this letter and can be found

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 25 min.

AIM:
To develop memory, language sense, observational skills, coordination and vigilance.

CLASS ORGANIZATION:
Groups.

SUPPLIES:
A pine cone.

OUTDOOR/INDOOR:

TEAC HER/CHILD LED:

outdoors. For example, if the coordinator stops with the letter p, a word to be said could be "pine". The person, who says a word first and grasps the pine fast, wins the round. It is of utmost importance that kids remember the words that have been said so that they do not get repeated.

Look back!

Get the group to sit in a circle and start discussing the game after 5-7 rounds of play. Were the instructions clear? Did they remember the words that were said in the rounds before? Were they careful in order to avoid repetition of words? Was there something difficult for them? Make sure to motivate the kids to reflect and express their feelings and thoughts.

Follow up!

- You can ask the children to say words that end in the letter of the alphabet chosen;
- They can also try to find names of: plants and animals, countries, rivers, mountains, or even name of boys and girls.

Ancient tribes

Get ready!

All players are divided into 3 teams depending on the number of players (Example: Ancient Bulgarians, Thracians, and Slavs). The name of the team must be of an ancient tribe.

Go!

Players from each team have their eyes covered.

Each team has one player with uncovered eyes and he or she is the leader that leads "the blinders" with commands where they need to rotate or to move. Each player is carrying a piece of the puzzle that is important.

Players follow a path with natural obstacles - trees, shrubs, stones - and they carefully move through. The leaders keep an eye for every blind player. The purpose is to arrange the English word for the respective color. For example: green, red, and brown.

After the puzzle has been completed, the second stage of the activity begins: children read the word of the color they achieved in English, in the puzzle arrangement. Afterwards, they start to look around them for 5 objects of the same color (grass, leaves, clothing, something they have in their pocket,

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 60 min.

AIM:
Practicing vocabulary related to colors; developing speaking and reading skills; developing teamwork abilities.

CLASS ORGANIZATION:
Small groups students (up to 5 students in a group).

SUPPLIES:
Sleeping mask, large puzzle pieces, A4 cards with the name of a color, cone obstacles, circles, plastic bottles, hoops, nets.

OUTDOOR/INDOOR:

TEAC HER/CHILD LED:

a pen and etc.)

They must put the items in one place.

The teacher is just observing the activity and corrects or guides if it's necessary.

Look back!

Each team is practicing the words of colors in English and the names of ancient tribes. Each team is developing reading and speaking skills and teamwork. Also, orientation in nature is developed.

Follow up!

- This can be an introductory lesson on ancient tribes. The subject can be further explored with the help of the following YouTube videos:
  https://www.youtube.com/watch?v=_w3X87gCNjg
  https://www.youtube.com/watch?v=IAQAAJo1fI0
  https://www.youtube.com/watch?v=uKR6IMS4uxE
- This can also be the starting point in exploring complementary colors or cold versus warm colors.

Letters in nature

Get ready

The students get divided into teams of four. Each team has 5 minutes to discover letters which allow them to create words that are associated with nature (branches, trees, rocks etc). The second step is to create a short story using these letters and items.

Make sure to motivate the students to find letters that can be found in nature and can be turned into a short story. The rest of your colleagues who are engaged in the activity should assist students in order to find letters and communicate effectively to write a creative short story.

Go!

The coordinator of the game allocates the students into teams and explains to them the aim of the game. Each team should walk around the area in order to find letters that already exist in nature. For instance, the letter X which is shaped by the peaks of two trees or two pine needles. Another example is the letter O, which is shaped by a cavity on a tree. Once they discover a few letters, the whole team needs to come up with a short story which is based on the letters they found in nature. Once all of the teams have completed

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 30 min

AIM:
Practice letter recognition; develop teamwork; writing development

CLASS ORGANIZATION:
Teams of 4

SUPPLIES:
nothing particular

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

the task and created their stories, they start narrating them one by one. Ask your group to sit in a circle and each group starts explaining their research on the letters. What letters did they find? And where? After explaining their research process, the other members of the team narrate their story. This outline should be followed by all of the teams until all stories have been heard in the circle.

Look back!

Still in a circle, discuss how everything worked out. Did everyone communicate well in their teams? Did they find letters in nature? Could they create a story easily? Did they find anything challenging? Allow the students to express and discuss their thoughts and emotions.

Follow up!

- Find further inspiration in *Discovering Nature's Alphabet* (2010) by Krystina Castella and Brian Boys.

Letters and orientation!

Get ready

Decide on a word, no more than 5 letters long, related to the outdoors. For example, the word "STONE". It must be possible to write the letters using only right angles. Write the word on a square paper, letter by letter.

Count how many squares fit on each side of each letter, write them down and also keep a note of the orientation of each line. These are the exact instructions that you are going to give as the master gamer.

Children get divided into teams of three. Each team has a designer, a walker and an observer.

The designer is responsible to design on the square paper with a pencil the instructions that master gamer gives.

The walker is responsible for following the master gamer's instructions by walking.

Finally, the observer has to check if the drawer and the walker follow the master gamer's instructions.

These are three rotating roles. Encourage children to decide their roles and their rotation way (for example, rotate roles on each letter).

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 40 min.

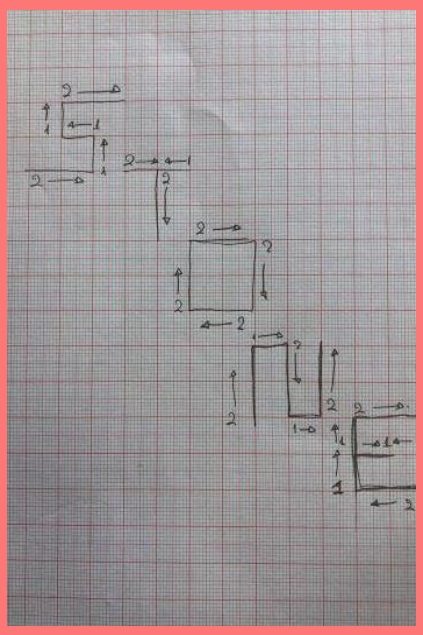
AIM:
Orientation

CLASS ORGANIZATION:
Groups of three

SUPPLIES:
Square papers, pencils, hard surfaces for writing

OUTDOOR/INDOOR:

TEAC HER/CHILD LED:



Go!

The coordinator of the game gives orientation instructions for each letter of the word they have chosen. The designer, the walker and the observer have to follow them. The instructions are always specific steps with a specific orientation. (For example, for the word "STONE" the letter "S" is: two steps on your right, one step forward, one step on your left, one step forward and two steps on your right). Give each letter randomly so they would be able to put them in the correct order only at the end of the game.

Important tips:

1. Each step equals one square on the square paper.
2. Children draw each letter without lifting the pencil. That means that sometimes they have to draw onto an already drawn line. E.g. two steps on the left, one step forward, one step on your right, one step on your left, one step forward, two steps on your right. This was the letter "E" of the word "STONE".
3. The walkers always look to a specific spot while they are walking. (this way every child has the same orientation when you say left, right, forward or backwards) E.g. Always look towards the mountain.

Look back!

Gather your team into a circle and ask them to form the correct word from the scrambled letters. Discuss the results of the teams. Was it something difficult in the activity? Did they cooperate efficiently? Help them to organize their ideas, share their thoughts and express their feelings.

Follow up!

- This activity can be done also with shapes, instead of letters, in order to promote geometry skills and vocabulary.

Leaf letter game

Get ready

This lesson is to be carried out in autumn when there are already enough leaves on the ground and while you are in a forest or a park. Choose a short story or poem on the changes of the season, especially on how leaves turn different colors and fall to the ground.

Go!

Begin by sitting in a circle and introducing a mindfulness exercise that brings calmness and quietness. Now it is time to whisper the story or the poem. After this special moment, with a soft voice ask the students to pick leaves of different sizes, shapes and colors and give them some time to study them.

Now, ask the children to describe the leaves: "What kind of leaf is it? What is its shape? What color does it have? Which tree do you think belongs to? How are the edges? Is it a simple or a compound leaf?"

After describing the leaves, discuss with the students the letters that they already know and draw the shape of the letters in the air. In the next part of the activity, children, using markers, will write a letter on each leaf. Then, ask them to arrange the leaves so that they

CURRIC ULAR LINKS:

AGE GROUP: 5+

TIME: 30 min

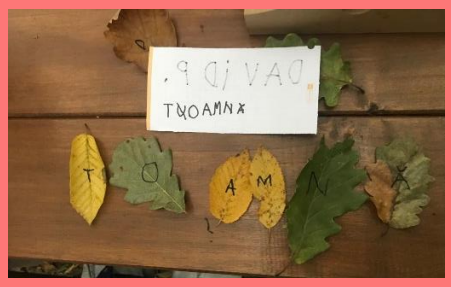
AIM:
Identify sounds, syllables, words in clearly spoken statements; formulation of own statements in various communication situations. Write letters and words using different materials and different styles

CLASS ORGANIZATION:
Small groups.

SUPPLIES:
Leaves, markers, small sticks

OUTDOOR/INDOOR:

TEACHER/CHILD LED:



form words. Whenever one work is ready, ask the group to read it and copy it on a paper label (see picture).

Next, what can we do with these nice words? Of course, sentences! "Let's hear some interesting sentences, preferably related to the present season, the magic fall". The formulated sentences will be repeated emphasizing the word formed by the students.

Look back!

If there is time left, other adjacent tasks can be performed. For example, the syllable parting of the word, the identification of the sound at the beginning or at the end of the word, the plural form of the word, the presence of a specific sound in the word, number of the words in the sentence. Ask the children why writing is important and how it can help us in everyday life.

Follow up!

- Trace letters/ short words on the ground, in the mud or sand with a stick or play easy word games like Hangman.
- Ask the learners to form letters using leaves, sticks and stones or other natural small items. See the pictures below.

Funny alphabet soup

Get ready

In a science session, we will go to the playground to pick up leaves that have fallen from the trees, and then we will use the leaves in a language session.

Go!

We already have all the leaves collected! We are going to write a capital letter on each sheet. With the letters on the table, we can play several games which are an effective way of practicing vocabulary, of writing on letters, parting into syllables. Here are some game ideas:

1. Word search with the vocabulary we have learned from each unit. Each team should find the words and stick them in a corkboard.
2. How many words can students form using 5/6 randomly chosen letters? Can they get at least one word in which to use all the given letters?
3. Play in pairs. Each student forms a word that lacks a letter or has an extra letter. Can the pair guess the right word? Take turns.
4. Play in pairs. Each student forms a

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 90 min.

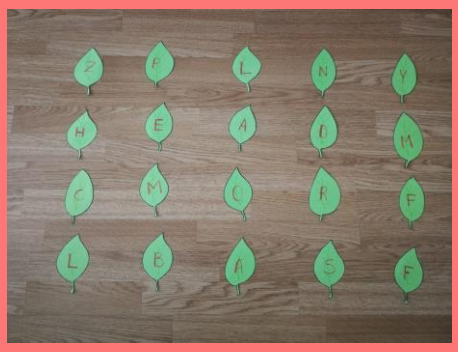
AIM:
Memorize more data; increase concentration, visual memory and attention; revise the vocabulary of the new unit.

CLASS ORGANIZATION:
Small groups.

SUPPLIES:
Leaves and permanent marker.

OUTDOOR/INDOOR:

TEAC HER/CHILD LED:

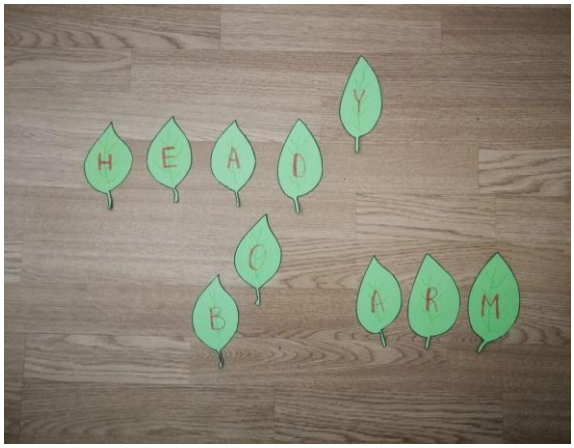


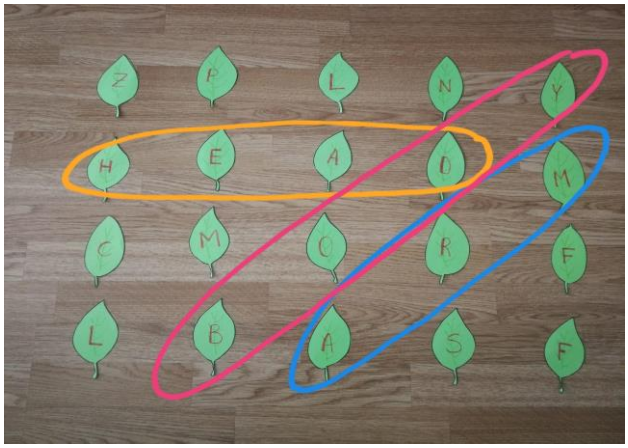
word in its singular or plural form. His pair should recognize the word and write the other form, be it singular or plural.

5. Pair game with the pairs sitting or standing opposite each other: one of the students forms a word. Can his read the overturned words?
6. Play in pairs. Reading test. In turn, each student forms a word placing the leaves from right to left instead of left to right. How fast they can his/ her pair read backwards? The last two games as just for fun!

Look back!

The teacher will check the children's games and will offer help only at request. At the end of the activity, we will check that the students have found the words correctly and ask if it seems funnier to do it with leaves or in a traditional way.





Follow up!

- We will teach students to make alphabet soup with other recyclable materials:
  https://www.youtube.com/watch?v=7esiaH96s7o
  This way, we will promote the importance of recycling of things we have at home.

Alphabetical ordering

Get ready

The aim of this lesson is to individually discover a natural item in the area where they are placed and think where would it fit in the alphabet. They should then cooperate as with the rest of the group in order to put the letters they have found in an alphabetical order correctly. Everyone needs to fit in and place his/her item in the correct order.

Make sure to motivate your students to find their favorite item in nature and try to remember where it should be placed in the alphabet by reminding them the alphabetical order if needed. The rest of your colleagues should be engaged and assist the students with the activity.

Go!

The coordinator of the game explains to the students the aim of the activity. Ask them to walk around the area for one minute to find their favorite item in nature. Then ask a series of questions such as: "What is the item called? What is the first letter of the item they have chosen? What is the second letter?" and so on. In continuation, the whole group should cooperate and say what item they have chosen. The ultimate aim is to create a line by

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 30 min

AIM:
Alphabetical ordering recognition, teamwork skills.

CLASS ORGANIZATION:
Individually and in groups.

SUPPLIES:
Natural elements

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

starting with the student who has chosen an item starting with the letter A. The student standing next to them should have chosen an item starting with the letter B. The remaining students should stand next to them according to the letter they have chosen in order to create an alphabetical line from A to Z.

Looking back!

Gather your group in a circle: Discuss how the activity went. Did everyone cooperate well? Could they place their items in the correct alphabetical order? Was there anything challenging for them? Allow your students to discuss and express their thoughts and emotions.

Follow up!

- Some of the objects could have two names (like *rock* and *stone* or *dirt* and *soil*) how does this affect the order in the alphabet?
- See also the activity called *Letters in Nature.*

Writing with nature

Get ready

Using nature as a first approach to reading and writing can be a very motivating and stimulating methodology to adopt with young pupils. Forming words with natural elements, besides being creative and funny, can definitely strengthen learning and facilitate the memorization of letters. The ideal place to carry out this activity is obviously out in the open in a garden, a park, or in the middle of a woods of oak trees, walnuts, chestnuts or horse-chestnuts. The beach too can be an excellent place for this activity. The end of summer and autumn is an ideal period to present children to this activity, and involve them in the collecting of natural elements phase.

Go!

Step 1: Gather the children in an open space, distribute bags to everyone, and encourage them to pick small natural elements such as little wooden sticks, leaves, acorns, nuts, seeds, pinecones, chestnuts, seashells, pebbles etc. Make sure your pupils understand what exactly they can pick up, and explain they should not pick up objects that can be harmful, i.e. glass pieces, cigarette butts etc. Allow twenty to thirty minutes for this activity.

Step 2

Each group of children will then, distribute the material in the proper container.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 30 min (10+20)

AIM:
Natural elements classification skills, words and sentences writing skills, creativity, group work.

CLASS ORGANIZATION:
In pairs and in little groups

SUPPLIES:
Bags, buckets or baskets and other containers, natural elements such as: seeds, nuts, chestnuts, acorns, wooden sticks, seashells

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Step 3

The teacher distributes thick coloured cardboards on which to compose words. Children are invited to close their eyes, think and picture in their minds the word they would like to write, then, once they have picked a material they would like to use in the process, they can proceed with the composition of the words.

Look back!

When all the children have written their words, invite them to read them to their peers. You can launch a natural element word contest. Each pair will say the word they have written, and all the class have to quickly reassemble the natural elements to form that word. When the competition is over, each child or pair will choose a word and then, using some vinyl glue stick the letters on the cardboard. If vinyl glue is not strong enough use some hot glue. You might decide not to stick the letters, but to take pictures of them, or ask children to paint the words they have written on a different piece of cardboard.

Follow up!

- Once the words have been formed and read, you can suggest finding other words that begin or end with the same sounds and letters;
- Once you have collected a lot of words, you can invite children to create sentences with them;
- Ask children to write English words.

Lost words

Get ready

During the first grade of primary school, the initiation of writing is studied, and children begin to join words and to form sentences that make sense, both in our mother tongue and in a second language. Therefore, they will take advantage of this activity.

Go!

The teacher prepares several bags with small stones and on each stone, he/she writes down a word to form a sentence.

Once in the field, the teacher hides the stones around the place.

Students, divided into groups of five, should find the hidden stones. Then, we place them on the floor and order them in order to build sentences.

Finally, we write on a paper the sentences that we have built.

Look back!

We all sit in a circle and discuss if it has been easy or not to find the stones and the difficulties we have had while forming sentences. We can also see if within a sentence we can change the order of the

CURRICULAR LINKS:

AGE GROUP: 6-7

TIME: 20 min

AIM:
Acquire comprehension skills and sense of a sentence.

CLASS ORGANIZATION:
Groups of five

SUPPLIES:
Stones. pencils

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

words. Does this change affect the overall meaning of the sentence? Moreover, each team will analyze the sentence saying if the word is a verb, a noun, an adjective etc. It is pretty sure that students will have some stones left that they couldn't add to any sentence, so we can show them the correct way to do it or the different forms that we have to combine the stones to obtain more than one sentence.

Follow up!

- In the following video, children can watch how sentences are built in English: https://www.youtube.com/watch?v=0Wrv_ZviMEc
- The next time you can ask each group of children to write their own sentences for the rest of the group in the class.

Phonetic synthesis

Get ready!

Begin in a circle and tell the students that they are going to analyze sentences and represent them phonetically with natural materials. They should gather sticks of different sizes, stones/ pebbles and leaves. Once they gather the materials, they will write C for consonants and V for vowels on each of the pebbles. The children will also write the punctuation marks on the leaves. The longer sticks are going to represent the sentence, the shorter ones will be the syllables.

Students will study and the represent the components of a sentence of 3, 4 words. The trick of this activity is to make a short sentence where all words should start with the same sound.

Go!

Gather the group in a circle and give them the clipboards and felt pens/ markers. They will represent a given sentence using sticks, leaves and pebbles by the following pattern: a longer stick for the whole sentence; a leaf bearing the correct punctuation mark next to it; shorter sticks for the words (gaps between

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 40 min.

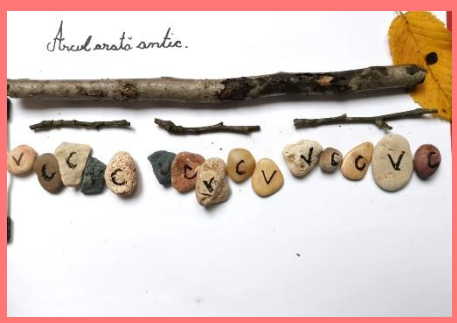
AIM:
To develop analysis and phonetic synthesis of the words and syllables; improve spelling; practice composition of short sentences; develop phonemic awareness and the ability to think and communicate.

CLASS ORGANIZATION:
Groups and individual/ pair.

SUPPLIES:
Clipboard, marker or felt pen, paper + natural loose parts (pebbles, sticks, leaves).

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

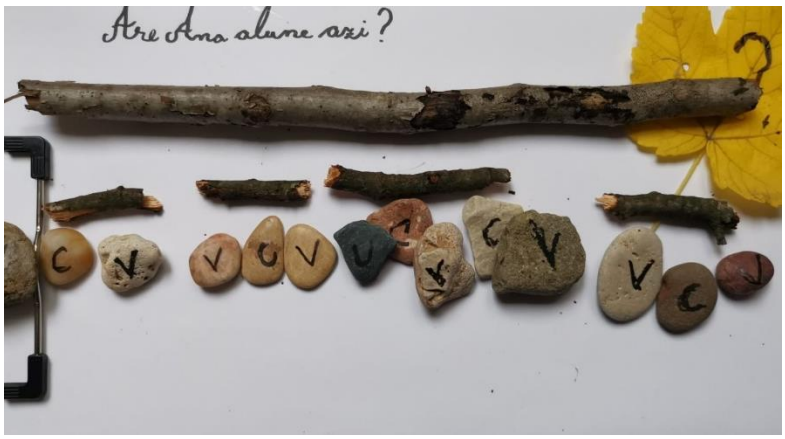


them); pebbles for vowels and consonants under each short stick. They can work in pairs or individually if they are advanced in phonetic analysis. Tell them 2-3 sentences of 3-4 words beginning with the same sounds, for example: Lady Lee loves lizards. Is Isabell inside?

Allow for enough time for writing the sentence down and the phonetic synthesis. Ask the children if they can form such sentences in their mother tongues. Make the analysis of these new sentences.

Look back!

Students share their feelings and thoughts about how they did this activity. Tell that the use of words that begin with the same sound near one another is called *alliteration* and end with 1-2 examples of the sentences analyzed during this lesson.



Follow up!

- Challenge the students to find a noun, an adjective, a verb and an adverb starting with the same sound. Make funny sentences by joining them.

A new spelling game

Get ready

Correct spelling in Romanian can give students quite a headache! There are lots of words that are written hyphenated or in one word depending on the context and meaning. To understand when to write one or the other is one of the aims of the primary school language development lessons. We invented this game to practice spelling in a fun and creative way! I prepared a set of laminated cards with two symbols: a circle (for the situations when the spelling is joined and we write just one word) and a line (for the situations the word is divided with a hyphenation). You can play this game in a forest, park or a place with trees! Even if you are not going to teach your students Romanian spelling, this activity might give you some ideas of how to address spelling issues in your own native language.

Go!

Start by showing the set of laminated cards (I have made 5 green cards with circles and 5 pink cards with a line) and ask them what game they think they can play with these cards. Go in the forest and design an area, then get the students to glue each card to a

CURRICULAR LINKS:

AGE GROUP: 9+

TIME: 30 **min.**

AIM:
To spell correctly; to develop attention and quick response.

CLASS ORGANIZATION:
Small groups of up to 9 or 10.

SUPPLIES:
Set of cards as specified in the lesson, poster putty or Tack-It, white boards and markers.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

tree with poster putty or Tack-It (Faber-Castell). Explain that they are successful if they can choose the correct spelling for the given sentence and make up their own spelling challenge.

In order to give enough thinking time, the teacher will also use two symbols (like a traffic sign): a red and a green one. As long as the teacher reads a sentence, the red circle is up. When the teacher is sure that all the students have heard the sentence twice and had enough time to think of the correct spelling, he/ she raises the green symbol. When they see it, the children will run to the right signs (remember that there are more than one copies of each sign) and put their hand on it. After they have made their choice, one of the pupils can explain the reason for choosing that particular sign. It is a good idea to encourage children to always change the sign (for example, even if they go twice for the circle, they should touch different circles). This way, they move and run a lot. Repeat the game several times then ask the students to come up with their own challenges. (Either you give all of them whiteboards and some time to make their sentences or each can try to tell a sentence on the spot). After they choose the symbol for the whole or the hyphenated word, one of the children will explain his/ her choice.

Look back!

Back in the circle, the children will draw their own conclusions regarding their competences and skills in using the right spelling form. Ask them why we should learn to spell correctly when we have devices that check and correct our spelling now. How can better spelling improve our lives? You could also discuss the other gains of this game (well-being, fun, running, self-confidence). End the lesson with the teacher's feedback and conclusions.

Follow up!

- You can play with numbers instead of signs. The children will choose one or the other of the trees considering the number of words in a sentence. This would be suitable for 6-7 year olds.

Noun relay race

Get ready

We record nouns that are related to nature and we want the class to work with. We find images that represent them. It's good to be as many as the kids in each group. We can either print the images or have them painted on stones or wood as many times as the children in each group. We divide the nouns/ images into as many sachets or boxes as the groups of children.

We define three points in the classroom:

1. the starting point
2. the end point
3. the position of the last person in the line.

For each line teachers place on point (2.) a pencil and paper on a hard surface for writing. On point (3.) a sachet/box with the nouns. Point (1.) and point (2.) must have a significant distance between them.

The groups form in a row and stand next to each other with a short distance between them. The last of each line is slightly behind the others in point (3), so that they are next to the sachet of their team.

Teachers explain the rules to children and set an example for them to make sure they all understand what they have to do.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 30 min

AIM:
Being able to explain the role of a noun and identify nouns; to practice spelling of nouns; develop teamwork skills.

CLASS ORGANIZATION:
Mixed ability groups

SUPPLIES:
Pencil, paper, hard surface for writing, images of nouns, box/sachet

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

The goal is to finish as fast as they can. The team that works best and has the least spelling mistakes wins.

Go!

The last person in the line takes an image / stone from the bag / box, looks at it and puts it aside. They run to the person in front of them and whisper in their ear what they saw (e.g. Cloud). Then that person whispers it to the person in front of them, and that person to the next and to the next, until the noun reaches the first in line. The first in line runs to the end point (2.) and writes the noun to the paper there. They then run to the end (position 3.) so the team climbs one position, with the second in line becoming the first and the first becoming the last and thus drawing a noun image. Continue until all the images are finished and all the nouns are written.
When the team is finished, they take the paper with the nouns they have recorded and discuss together to correct any spelling mistakes.

Look back!

In a circle discuss: did they find all the nouns? Did the team work well together? What made it difficult? Have they been able to find any spelling mistakes?

Follow up!

- You can use the same game to practice vocabulary in a second language or reinforce specific vocabulary in geography or history.

From grammar to verse in spring

Get ready

In this activity we use *Noun, Adjective, Verb* routine for observing and describing the nature around. This routine helps students slow down and make careful observations about an object and group words into parts of speech. Students will think about words and phrases to describe what they see, pushing them beyond first glance or obvious description.

Choose a special natural area, a corner in the park/garden/ outdoor school center in springtime.

Go!

Step 1: Invite your students to sit down and look carefully around. Quiet, uninterrupted thinking and looking is essential for this activity. Invite them to list 5 nouns denoting things observed in the area around them. Remind your students that a noun is a person, place or thing. They can write the words in the first column of *Nouns, Adjectives, Verbs* sheet or on sticky notes. Allow them to share their nouns with a partner, and then have students share their nouns with the whole discussion group.

CURRICULAR LINKS:

AGE GROUP: 8+

TIME: 40 min.

AIM:
Develop observation and communication skills; group words into parts of speech.

CLASS ORGANIZATION:
Pairs/groups, whole class

SUPPLIES:
Sticky notes, pencils, sheets of paper, Noun, Adjectives, *Verbs* worksheet (optional), a chart paper.

OUTDOOR/INDOOR:

TEAC HER/CHILD LED:

On the next stack of sticky notes ask students to describe the natural area around them using five adjectives. Remind them adjectives are words that describe something and can answer questions such as: "What does it smell like? What does it look like? What does it sound like?" Once finished, students share their words with a partner and then with the whole class.

Next, ask students to look for five verbs. Explain that verbs are action words and give some examples. Invite them to share their action words with a partner and then with the other colleagues.

Note: document students' responses on chart paper or a board. Did they choose the same words? Did they choose similar words? Synonyms? (Optional-Ask for antonyms for some of the adjectives). Did they choose the words correctly? Encourage students to discuss about the chosen words including why they have chosen a certain word. Depending on context, some words can be nouns and adjectives, too.

Step 2: In groups, have students lay out their words together on a board/sheet of paper. Next ask them to write a short poem or story using as many as possible of these words. Once completed, they can take the lead to film each other reciting the poem/ telling the story right there, where they were inspired to write the words!

Look back!

Sit down in a circle with your legs crossed. Put your hands gently in your lap, palms up. Close your eyes and breathe in slowly feeling the fresh air deep in your chest. Give thanks for the beautiful things around you.

Follow up!

- Teach the children about and how to write a traditional Haiku (Japanese poem consisting of 3 phrases in a 5, 7, 5 pattern and a seasonal reference.
- Make a digital book or a video clip dedicated to the forest/ sea/ volcano etc. with the children creating and reciting their own poems on spot.

Nature story with tenses

Get ready

The aim of this activity is that children finish as fast as they can. The team that works best and has the least spelling mistakes wins.

Go!

Children head out to explore and select the living thing that will be the protagonist of their story.

Once they decide what it will be (e.g. a flower, an ant, a bird) they start constructing their story and taking notes. They should make a paragraph on the past, one on the present and the other on the future of the protagonist. Each paragraph should contain at least two time adverbs.

Look back!

Gather your students in a circle and discuss: Did they use all tenses? What were the adverbs used? Did the team work well together? What made it difficult? Have they been able to find any spelling mistakes?

Follow up!

Use the same idea with other parts of speech.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 45 min.

AIM:
Practice the use of tenses and time adverbs.

CLASS ORGANIZATION:
Groups of up to 4 children

SUPPLIES:
Pencil, paper, hard surface for writing

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

See, think, wonder

Get ready

See, Think, Wonder routine helps students make careful observations and thoughtful interpretations. It also stimulates curiosity and sets the stage for inquiry.

Choose an area that will sparkle children's interest: a corner in the garden/ park, next to a pond, a playground, in the middle of an orchard or meadow etc. Establish clear limits of the observation area.

Go!

Invite your students to sit down on their mats and look carefully at the scene. Hold up the sign *"I See!"* and invite them to write down what they first notice on the *See, Think, Wonder* sheet or post it. The answers of the younger students can be written by the teacher on post it of different colours. In the end of the activity stick the posts on a board.

We are in the middle of the meadow. "*What do you see?"* Of course, answers will vary: a tree, a bush, a blue flower, a bee, a butterfly, the sky above, the spring, grass, a black bug, an acorn, a cone, some mushrooms…

Ask the students to share what they noticed in a whole group discussion. As they answer,

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 50 min,

AIM:
Practice investigation skills; make connections and articulate what you see, think and wonder about; practice location and orientation, compare and order by size, identify geometrical shapes.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
See, Think, Wonder sheets or post it of three different colors, pencils. Optional: "I See", "I Think", "I Wonder" signs.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

encourage students to provide more details in their responses and to point to the location of the things they mentioned. "I see some blue flowers over there, to the left, next to the hazelnut tree". Provide help if they need additional information to identify the observed plants and animals. When they finished, make a summary of what students observed.

Hold up the sign *"I Think…"* and ask them "What do you think?" Invite them to write their ideas. Students' answers can be developed by the answers to a second powerful question "What makes you say that?"

Examples: "What do you think?" **"**I think this tree is an oak tree." "What makes you say that? "Because of the shape of the leaves and the acorns." "I think the butterfly is a swallow-tail butterfly. I recognize the patterns, colours and the shape of the wings." "I think this insect is a ladybug. She is round, red with black spots." "I think the butterfly is eating". "What makes you say that?" "His proboscis is lengthened". "I think the bird is building a nest. She is carrying some straws in her beak".

Hold up the sign *"I Wonder…"* and invite your students to write their ideas on the sheet. "What makes you wonder? "

"I wonder if that tree is a pine tree?" "What makes you say that? "" It is a conifer tree but I am not sure if it is a pine tree or a fir tree". "What makes you wonder?" "I wonder if the bird is building her nest in this area?" "What makes you say that?" "The bird can find here lots of building materials: grass, small sticks, forest moss. It would be lovely to hear her twittering. I wonder how many baby birds she will have this year?" "What makes you say that?" "Many birds are a good thing, here. I like to hear them sing and to watch their flight".

Math is also an important part of this activity. Questions like "What do you see behind the oak tree? What do you see in front of the fir tree? What colour are the flowers on the right? Look at the trees on the left side. What tree is the tallest? The one in the middle? The third tree? What flower is the closest to the blackberry bush? The blue ones or the white ones?"

Encourage your students to share their ideas with their classmates. Make sure that all students are involved in the activity and provide enough time to express their ideas and thoughts.

The teacher can add a personal touch to the discussion testing questions like: "How does this… image/landscape/painting make you feel? Does it remind you of something, of someone? Have you ever had the same feeling?" Connect the observations, the students' ideas of recent events that took place in class / school and help them to better understand their behavior, attitude in certain situations.

Look back!

All the groups of students observe the same scene. Invite your students to share their observations, ideas and thoughts with the rest of the class. Even if they observe the same natural area, different perspectives will bring new information and amazing new ideas.

Follow up!

- On a rainy day you can replace the natural scene with a picture from nature, a poster or a famous painting. Make sure you choose a work of art according with your students age, previous activities or topic of the week.
- When you apply *See, Think, Wonder Routine* starting from a painting it is a great exercise to connect observation, rigorous analysis with children's own experiences. Challenge them to associate with the picture sounds, smells, other colors than the visible ones.

Autumn carnival

Get ready!

Go outdoor and start a leaves hunt! All types of leaves, of any color. The first task for your students is to observe very attentively the leaves they collected: shape, size, colors, edges, type (simple or compound leaf). Help them to describe what they see/touch/smell. Can they identify the plant after its leaves? What trees/plants are growing in that area? The second task is to group the leaves according to a specific criteria like type, shape and color and/or to order by size.

Go!

Working in teams, students investigate a group of leaves using their senses. On a worksheet they organize their observations in a table.

I see	I feel
I smell	I hear

Students glue the leaves on the worksheet and fill in their observations specifying what part of speech are the words used in the description of the leaves: *nouns, verbs* or *adjectives*.

In the next part of the activity each team receives an envelope with new instructions.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 60 min.

AIM:
Develop observation and analysis skills; Develop vocabulary; Identify plants specific to the area; Develop creativity by translating language into body language.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Paper, envelopes with messages, cardboard, fiber pens, leaves, small stones, glue

OUTDOOR/INDOOR:

TEAC HER/CHILD LED:

Each group has to find pieces of paper with written words hidden on the trees' trunks (team 1), in the bushes (team 2) and in the herbaceous plants (team 3). With the words found they form sentences. Team 1 sentence: THE AUTUMN FOREST IS SAD AND LONELY. Team 2 sentence: WE LOVE YOU, GOLDEN AUTUMN! Team 3 sentence: CHARACTERS ARE THE WIND, THE LEAVES AND THE SUN.

Once students glued the words in the right order on their worksheet, they are asked to write some of the words with natural materials like leaves and small stones.

In the last part of the activity students are challenged to "translate" the sentence using the body language. Depending on the time available each team can receive the challenge to re-create the sentences of the other teams using facial expressions, body movements and positions, sounds, gestures.

Look back!

Inspired by the richness and the shinning of the season students create new tasks for the other teams like imagine a dialogue between a tree and its falling leaves, a conversation between the trees and the family of birds who are leaving its nest, a talk between the sun, the wind and the forest, etc.

Follow up!

- Students can create posters about fall using leaves.
- Students can write a composition "One day in autumn" describing their activities.

Milo's magical stones

Get ready

Today it is important that our children become familiar with nature, so that they can grow aware of how vital it is to protect and care about nature. Milo's story presented in this book, helps children understand how to care about nature while capturing their attention, urging them to act and not stay passive. Beside listening to the story and discussing about it, pupils will be asked to think about an ending of the story, and they will also create a little symbol that will remind them of Milo's lesson.
The story can be read outdoor, in the forest or school garden while children are sitting in a circle, so the teacher can easily show the book's illustrations. If indoor, the teacher can choose to show the book's illustrations using a smartboard.

Go!

Read the first part of the story and stop before the two possible endings are presented. If the teacher has read the story indoor, now it is time to leave the class and go outdoors. Explain to your pupils that this story has two endings and they need to use their imagination to figure out what might happen creating both

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 90 min

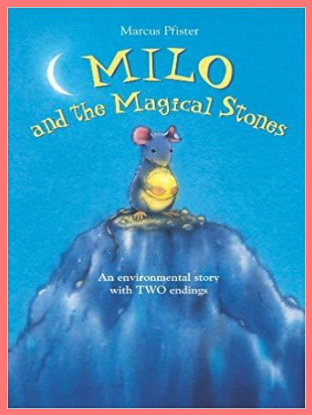
AIM:
Develop listening skills, oral communication, reflection on the meaning of a story, ability to make hypothesis creativity, protection and care of nature.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
A copy of Marcus Pfister's book: Milo and the Magical stones, North South, oval and round rocks, dried flowers and grass, rope, vinyl glue, indelible markers, one bag for each child.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:



a positive, and a negative ending. After listening and discussing some of children' endings, the teacher reads both endings presented by the author. The children can now comment on the endings proposed in the story and the teacher can guide the discussion helping children understand what exactly the island might represent (Planet), how the mice behave, what it means to have a positive or a negative behaviour towards the Earth (nature). At this point, the teacher will show the magic marble created by the mice for the mountain, which are illustrated in the book. The children observe the illustration attentively and make hypothesis about how they have been made. The teacher asks the children whether they would like to create *Fire stones* to offer to our Earth/Nature, and invites children to get a little container/bag, and collect any natural elements that they can (flat stones, grass stems, flowers, leaves, little pinecones, shells). Since the children might not find suitable flat stones, it is better if teacher makes sure these stones are collected previously. Once the search for the material is over, each child will decorate its own flat stone sticking whatever s/he feels like and colouring it with the indelible markers.

Look back!

Once the compositions are ready invite children to sit in a circle observe all the magic stones and collects further comments on the story and on magic stones.

Follow up!

- You can order the book via internet via Amazon or other book dealers. https://www.youtube.com/watch?v=foZfHJS4vIg

The forest of Gruffalo

Get ready

Children love so much monster stories. You can use these stories for physical games and imagination games.

Start reading the book by Julia Donaldson and Axel Scheffer *The Gruffalo*, with the children sitting down on the grass in a circle.

This is an outdoor activity to be carried out, preferably in a garden with a lot of trees like a forest. The reading is followed by two games.

Go!

1st step: You read the book in the schoolyard in circle time.

2nd step: Game "the animals' boxes"

You invite the kids to spread out in open order and curl up like close boxes. The teacher tells, for example "Open the boxes! Mice are coming out!", the teacher names an animal of the forest which is in the story. The kids move imitating the animals and their cries. After a while, you give the instruction "Close the boxes" and the children come back in the first position. Continue the game with different animals, and at the end give the instruction "Open the boxes! A lot of Gruffalo come out!" Now the children can imitate the funny monster of the book.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME:
1st step: 30 minutes, 2nd step: 30 minutes, 3rd step: 30 minutes.

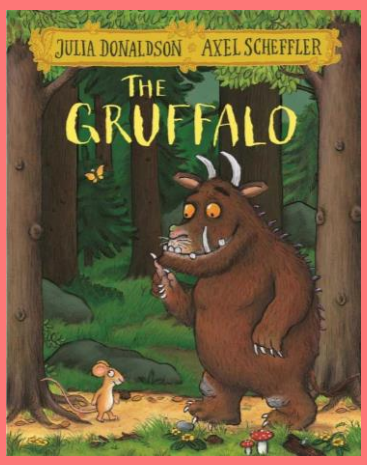
AIM:
Develop listening ability, attention, creative thinking, imagination, physical skills, and respect of rules.

CLASS ORGANIZATION:
Whole class and individual.

SUPPLIES:
The book "The Gruffalo"

OUTDOOR/INDOOR:

TEACHER/CHILD LED:



3rd step

Game: "Watch out for the Gruffalo!"

The teacher tells the children to spread out in open order in the garden. Choose one child and give him the role of Gruffalo. The other children will be the animals of the forest. The Gruffalo has to catch by touching the children that are running away. The children who are caught become Gruffalo and start running after the other children. The game ends when there is only one child left. The winner is the only child that has not turned into a Gruffalo.

Look back!

These activities support the development of positive and constructive relationships among children, encourage children to develop respect towards the others and game rules.

Follow up!

- You can read other books of the series Gruffalo, listen to the song, act out and read the story in English;
- https://youtu.be/CcCkEpKCLAs *The Gruffalo Song*;
- https://youtu.be/s8sUPpPc8Ws *The Gruffalo Story*.

Treasure hunt

Get ready

This is an interdisciplinary activity. It connects knowledge from subjects such as: language, geography, literature, logical thinking and orientation. This is why it requires a little more preparation. It is best done if two or more teachers organize it between the kids of their classes.

The activity has 2 stages: preparation when the children prepare the materials under the guidance of the teachers, and the conducting or the development of the activity.

The students are split into 3 or 4 teams (5 – 8 kids each). They are given a poster they have to fill in (make an acronym).

Go!

The teacher and 2–3 kids who are helping with the conducting of the activity place posters with certain information across the school and in the schoolyard. The information depends on the topic (for ex. Amazonia). The children find clues (color-coded for facilitation). When they find all of them, they go to their teacher who confirms the completion of the task and gives them a key and info for the next task. It is riddle solving.

CURRICULAR LINKS:

AGE GROUP: 8+

TIME: 90 min.

AIM:
Improving communication, team work, problem solving; read for specific information.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Educational posters, acronym posters, treasure

OUTDOOR/INDOOR:

TEAC HER/CHILD LED:

It is conducted by a kid from the school. When the team completes the task – they are given a piece of the map.

The aim is all teams receive keys and answer the riddles. Thus, all pieces of the map will be collected. When the map is whole again, the students can find the starting point for the directions to the treasure.

Look back!

After finding the treasure, the children gather to reflect on the activity. Each group points out the hard, the easy and most interesting parts of it. Ideas for upgrading the activity in the future are welcome. The teacher asks them questions like: "What was the most interesting part of the activity for you? Did you find any difficulty? Do you like the things you've learned? How was your group communication? Do you want to participate in more activities similar to this?"

Looking for clues

Answering the riddle

The map is assembled

The treasure (flag) is found

Follow up!

- You could make this a parent-child activity on an Open School Day.

Spring is here!

Get ready

It is spring! Outdoor! Look around! Can you see the buds of the trees, the delicate flowers in the green grass, those fluffy clouds crossing slowly the blue sky? Can you hear the birds singing? Can you feel that fresh and vivid smell? Invite your students to observe the surroundings. Eyes, ears, nose alert! Observe and describe. Pay attention to any detail.

Go!

Connect students' observations with the poem *Spring is here!*:

The wind told the grass/ The grass told the tree/ The tree told the bush/ And the bush told the bee/ The bee told the flowers/ Which bloom with magic powers/ A butterfly liked what he heard / And he told to a bird/ The bird sang out clear:/ "Spring is here! Spring is here!"

The poem is a sequence of images. For the next part of the activity invite children to draw the sequences then to display them on board/on the grass in the order suggested by the poem. The sequence of drawings of the poem *Spring is here!* helps them to recite it and to memorize it! It is an ingenious method

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 50 min.

AIM:
Develop observation and communication skills; classify words into parts of speech.

CLASS ORGANIZATION:
Pairs/groups, whole class

SUPPLIES:
Drawing papers, colored pencils, crayons, sharpeners and erasers, board.

OUTDOOR/INDOOR:

TEAC HER/CHILD LED:

that supports the memorization of any content.

As we are outdoors it is time for some movement, too. Students are challenged to recite the poem using body language and mimicking natural sounds and movements: the breeze of the wind, the flutter of butterfly wings, the chirp of the birds, the rustling of the leaves in the trees and bushes, the buzz of the bees. They can add musical fragments (seasonal children's songs or classical music).

Look back!

Back in school, using phones/ tablets/laptops, students select video files with nature sounds. They practice some relaxation exercises and enjoy bringing nature, even for a short while, in the classroom.

Follow up!

- Challenge your students to take spring snapshots using their phones or tablets!
- Can you remember another poem that can be recited using body language or imitating sounds from the environment? For example, my students memorized the poem "Tell me, which mother is the dearest" by Nichita Stanescu, using cards with the plants and animals introduced in the poem, placed in the right order on the board.

Creating a newspaper

Get ready!

The students are divided into teams according to the sections of the newspapers in which they participate:

Pupils from Our School Celebrate, Code Green, Fairytale World, Our Successes, Sunshades, Music Page, Curiosities, Tasty, Sports News, My Pet, Hobbies, Magic Palette, Games & Entertainment, and Skittles.

Go!

Students are working to create the text, the photo materials for the respective section, jointly and under the expert guidance of a guest journalist from the local newspaper and the participation of students from the University from the training of teachers.

Look back!

The preparation of the newspaper and its dissemination in school is a source of satisfaction and motivation for teamwork. Children develop skills for good communication and socialization. Form and develop their skills for an environmentally friendly and responsible lifestyle.

CURRICULAR LINKS:

AGE GROUP: 10+

TIME: 40 min

AIM:
Developing skills for sharing, disseminating various, interesting events, celebrations, school activities; improving and applying students' knowledge of language and communication skills; developing digital abilities while editing and designing the articles.

CLASS ORGANIZATION:
Small groups.

SUPPLIES:
Texts, photos for the newspaper, headings.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Follow up!

- This activity can be linked with others to strengthen a group of pupils and their ability to work as a team towards a very specific objective.
- This can be one of many activities on the importance, evolution and future of newspapers.
  https://www.youtube.com/watch?v=cBIoPplnbf8
- Pupils can become proficient in using different types of applications in order to edit texts and photos. Thus, the teachers can introduce blind typing crush courses to improve their ability to type.

Storytelling stones

Get ready

Storytelling is in our genes. It is an imagination trigger, an amazing extension of the everyday life. Also, through stories, ancient wisdom, local traditions, the knowledge about historical events or great figures of our history travel down across the millenniums. Collect in a box or a bag some round stones with a smooth surface.

Go!

Ask your children to sit down in a circle and to take a stone from the box. Let them spend a few moments with their stones. Encourage them to describe the stones: colour, shape, size, type. How does it feel?

All the children draw or write something on their stones. This could be anything they wish: a bird, a flower, a tree, a butterfly, a magic word… When the stones are finished ask the children to put them back in the box. Set the rules for this activity and let the magic begin!

The first child pulls out a stone from the box. He starts the story based on the image on this stone. The next child will pull out another stone and continue the story inspired by the new image. Everyone else will get a turn so,

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 60 min.

AIM:
Develop communication skills, memory, patience, empathy and listening skills as well as expand vocabulary by creating a story, in group

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Stones (at least 1 for each child), acrylic colours, and painting brushes, black markers for drawings or any colouring pens that work on stones, a nice box or a bag to hold the stones

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

they must have patience and be attentive to the chain story.

When a child ends up telling the story he places the stone in the circle. Assist anyone who is hesitant or shy. Make sure that all the children contribute to the story and add their stone in the circle.

Discuss the story underlining the sequence of events and the characters of the story. Who are the main characters? What can they tell about each one? Are they positive or negative characters? Where are the events taking place? When? Help them organize their ideas, share their thoughts and express their feelings. How did they feel during the activity? Celebrate how wonderful each stone is and what an amazing story di they told.

Look back!

Talk about the drawings on the stones. What other interpretations could give to that picture? Why did they choose that image/word? Which part of the story is their favourite? Which character is more interesting? Why? Did the story send us a message? Can we draw a conclusion? Who is the best storyteller, today?

Discuss about the importance of the stories in the cultures across the world and about the role of the stories in transmitting precious information from generation to generation.

Follow up!

- Another version of this activity starts from small natural items. The children / the members of the family pick up from the natural environment a few elements: stones, leaves, sticks, feathers, flowers, acorns, nuts, forest fruit, mushrooms, snail shell and put them all together. One child /member of the family removes an item from the box/pile and starts a story inspired by that object. The next child picks up another object and continues the story. And so on. Family stories are unforgettable…

Creating a text with keywords

Get ready

Provide contextual learning by updating the knowledge related to the narrative text (place and time of the action, the characters participating in the action, the unfolding of the action, the ending). Remember the rules of placement on the page, alignment, main parts (beginning, content and ending).

The keywords are written on wooden discs, stones and wooden spatulas, divided as follows: words / expressions representing the time and place of the action are written on the stones; character names are written on wooden spatulas; names of actions (verbs) are written on the wooden discs. These keywords are taken from stories known by students. It will be interesting to watch how they combine the characters from different stories with actions, time and place from other stories.

Go!

Present to the children the trays with materials, naming what kinds of words they can find on each of them. Divide students into groups to of 4-5 students.

Ask the students to create a literary text with

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 90 min.

AIM:
Developing creative thinking, developing vocabulary, expressing personal opinion.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Stones, wooden spatula, wooden discs, marker, sheets and writing tools.

OUTDOOR/INDOOR:

TEAC HER/CHILD LED:

keywords. Invite one representative from each group to take a stone from the tray with the time and place of the action, two wooden spatulas with character names and three wooden disks with verbs. Explain to the students that they will build a literary text of at least one A4 notebook page with real and unreal elements, in which all the extracted words must be found, exactly as written on the teaching materials.

Look back!

Each team will present the product through another representative; discuss with the students the content of each output and make the necessary assessment. Lead the discussion about the created text by insisting with questions such as "Why did you choose this way?", "How did you think?", "What links did you make?". The purpose of these questions is to invite the students to justify the choices made. As expected, some very original creations were written, which the students enjoyed.

Finally, through the Gallery Tour method, choose the most beautiful story. Request arguments for the student choices not forgetting to track the page layout, spelling, punctuation marks and readability of the text.

Follow up!

- By changing the keyword register (e.g. history), the technique can be used to deepen lessons related to historical characters. (e.g. Historical Figure: Prince Stephen the Great, Time and place: the reigning years (1457-1504), Moldavia, Action: Founded Putna Monastery). This time the students are required to find the information that goes together.

Spring of creativity

Get ready

Invite the students to come to outdoor class with a telephone or a tablet that they can take photographs with, can edit and have an internet connection.

Go!

Ask the students to take each 1-2 good photos of a plant in spring. Then, they have 10-12 minutes to look for online information about the name of the plant and its characteristics. (They can first use Plantnet or another app to identify the plant). Once they know the plant well, they write 3 adjectives that speak about the plant, its smell, taste etc. The final step is the making of a descriptive text about their plant in spring.

Look back!

Back together, ask the children to read their touching creations. Point out the most amazing poetic phrases/ pictures.

Follow up!

Back in the classroom, each student can create a text called *Signs of spring* that can combine the best ideas.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 40 min.

AIM:
Use descriptive words in a creative text; develop digital skills.

CLASS ORGANIZATION:
Small groups.

SUPPLIES:
Leaves and permanent marker.

OUTDOOR/INDOOR:

"Sorrel. Spring. Gossamer flower made of white glass. It makes me think of the sour-sweet taste that mildly pampers my senses".

(Tricuță Ingrid, 3rd grade)

Nature and we

Get ready

Activity 1. Refresh previous knowledge

The teacher helps students to systematize and consolidate the knowledge about food chains by emphasizing the strong links established between all life forms from this perspective.

Activity 2. Create food chains

Students, divided into two groups create food chains using natural materials. They draw or write the name of a plant or animal on wooden tiles or pebbles (optional).

Go!

Activity 3. Create Labyrinth

Each team gets a maze design, find the key word of the puzzle (a plant's name or an animal's name) and make a small craft (that plant or animal) using only natural materials. This "craft" is trapped. Each team chooses a way out of the labyrinth. To pass through the trap, students must solve the enigma from the envelope. Be aware of the fact that a shorter path, means a more difficult task. If the team cannot solve the task from the selected route, it is necessary to look for another path and this leads to solving a new task. The students are working in groups of

CURRICULAR LINKS:

AGE GROUP: 9+

TIME: 1 school day

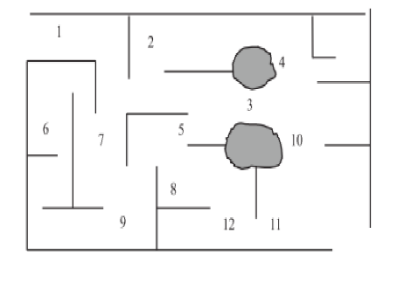
AIM:
Independent verification of the level of learning and the ability of students to apply knowledge in everyday life; practice team work.

CLASS ORGANIZATION:
Groups of five

SUPPLIES:
Two balls of thick twine/cotton thread, Treasure Chests – Tasks Wood / cork slabs, sticks, stones for food chains, a safe with materials for each team, envelope with puzzle, maze pattern, small natural materials for crafts tablets, digital microscope, interactive toy BEE-BOT.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:



five and practice team work. All children apply the picture from the trap.

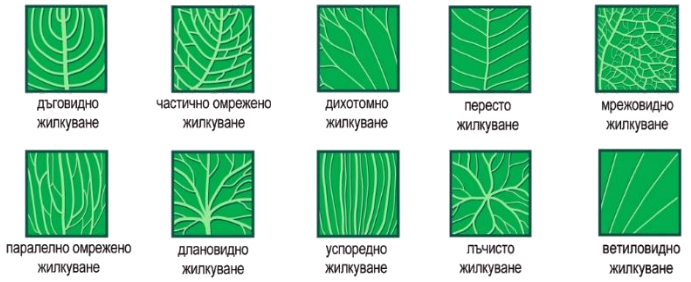
If children fall into trap 1 they should make a bee of natural materials. If they fall into trap 2, they make a flower from natural materials.

The first group has to name the parts of the plants they have designed; the second group has to name the parts of the bee's body. The next task is to look at their creations and to choose the perfect flower for each bee. Then, using these beautiful flowers and bees from natural elements students as characters each group is challenged to create a story. In the end they share their stories and a piece of honeycomb as a reward for the hardworking students.

Activity 4. Treasure Hunters. Creative writing

Students are working in groups of four. They seek treasures (in chests). In the chests each team finds a puzzle to solve. The theme of the puzzles is ecology. Using the puzzles as a starting points students are invited to create a short text (ecology, ecosystems) with an impactful message related to environmental protection.

Species	Shape of the leaf	Ribs	Other details
coniferous / or / deciduous plant	heartbeat palatable needleless kidney		



There is also one leaf in the chests. After they share their texts students concentrate on the leaves from the chests. They observe the leaf very attentive and record in the tables all the information required (species, shape, size, margins, leaf ribs etc.).

Activity 5. Young explorers, travelers, eco reporters

Depending on the type of leaves in the boxes, students are divided into three teams:

Team I: "Young Researchers" - with a digital microscope students search any microorganisms, mites, insects on the leaf.

Team II: "Travelers" - The Bee Boot is a symbol of protected sites - national parks, protected areas. Students make a list of these special areas marked with Bee Boot. The Bee Boot will identify at least one plant and/or animal protected in these areas.

Team III: "Eco reporters" – Students create avatars and design a statement for environmental protection - in Bulgarian and English.

Look back!

These activities were carried out all along a school day. Yet, they can be easily adapted to be run separately.

Follow up!

- Using students drawings on environmental protection create new puzzles.
- Post students' results on a special school board.

Creative writing

Get ready!

1st activity. Go out in nature. Let children sit down in a circle, look around and talk about the signs of the autumn season. Read /listen to or watch, if you are in class/ the story *The Anxious Leaf,* by Henry Ward Beecher.

Discuss with children what beautiful dreams was the leaf having while whirled through the air. Ask children to gather autumn leaves for the next activity.

Go!

2nd activity. Creative thinking and writing. Ask students imagine what animals/creatures could the leaf meet while falling on the ground and what are they saying to each other. Have in mind the season and the place. Let children decide on 5-6 animals to use in their creative story. Children make groups of four and each group works on creating an episode of a meeting. They write down a short dialogue and work out a poster / a picture, using the gathered leaves and other natural materials to present the episode.

3rd activity. Children present the different episodes of their new story, saying the dialogues and showing the posters. The teacher can record the whole story after some practicing.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 3 x 60 min.

AIM:
Use nature as an inspiration source for creative writing, art, drama in Bulgarian and English; develop observation skills; develop team work skills; raise nature awareness.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
The Anxious Leaf by Henry Ward Beecher,natural materials, poster sheets, glue, colour pencils, camera

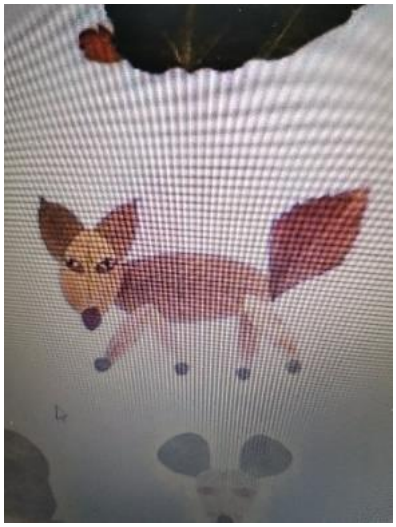
OUTDOOR/INDOOR:

TEAC HER/CHILD LED:

Look back!

Students are encouraged to discuss what was challenging for them, to share their thoughts and emotions. They can watch the video showing their work together and highlighting different aspects of the activities. Teacher makes sure that all the students are equally involved in the activities and in subsequent discussions. A special attention will be accorded to the students who find it hard to express their ideas and emotions, to speak in public.

Children's posters presenting the episodes of their new story:



Follow up!

- The video with the new story created by the students: https://www.youtube.com/watch?v=WaBy4PUeeCg
- *The Anxious Leaf* by Henry Ward Beecher: https://www.storyberries.com/fairy-tales-the-anxious-leaf-autumn-stories-for-kids/
- If your students are specially gifted challenge them to write conversations between leaves and other natural items in form of lyrics. Ask them to select a soundtrack for the story poem.

Magic potions

Get ready

I remember preparing magic potions as a child: potions to keep the boys at a distance, potions that turn us into fairies or potions that make homework disappear. During this lesson, the third graders along with invited students from a local school use the magical powers of the forest to prepare potions of superpowers. The students also practice skills of writing a functional, non-fictional text (a recipe) that creatively combines scientific observation and knowledge.

Go!

Begin in a circle. Tell the students that our forest is a magical one, with elements that have supernatural powers. These elements can be combined in potions that make you strong, fast or can develop other amazing skills.

In groups, the children will decide on a group name and will write, guided by a Fact file, a non-literary text, a recipe of the potion after the following plan: name of the potion, the main effect, ingredients used, posology/ dosage as well as warnings (side effects).

Some more important rules would be: the potion belongs to the whole group so all

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 45 min.

AIM:
To develop writing skills for a non-literary text; to observe nature and use knowledge about plants and animals in creative projects.

CLASS ORGANIZATION:
Whole class and groups.

SUPPLIES:
Clipboards, Fact file, pencil, 4-5 glass bottles and small tools (scissors, shovels, pincers).

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

members should present their ideas; the texture, characteristics and scientific information will be developed into ideas of magical powers. If there are poisonous or harmful plants in the area, the students should be aware of them. Each group will get a chipboard with the potion recipe Fact file, a pencil and an interesting glass bottle. Make sure you agree on a certain territory to be explored (the students should keep within visible distance). Give the students enough time to observe the environment. They choose the ingredients, prepare the potion and write the recipe and the other information required on the Fact file. When done, each group takes turn in presenting their work.

Look back!

Back in the final circle, ask the students to talk about things that they learnt during this lesson. Appreciate teamwork and presentations (for example our students invented very funny side effects (like: "your hair stands up and your voice turns high-pitched"), they played with the significance of words (e.g. they used moss for physical power as the word *moss* in Romanian sounds the same with the word *muşchi)* and used very well their knowledge on local plants for this activity.

Follow up!

- Ask each of the students to prepare such a potion in their families and write its fact file.
- Usually the magic potions are accompanied by incantations or spells. Challenge your students to create a spell inspired by the ingredients and/or the effects of their potions.

Trees with souls

CURRICULAR LINKS:

AGE GROUP: 9+

TIME: 50 min.

AIM:
Develop creative writing, artistic sense and empathy with trees.

CLASS ORGANIZATION:
Whole class, small groups

SUPPLIES:
White and red clay, string, 4-5 small whiteboards, markers and natural elements.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Get ready!

This was an English lesson with 3rd graders but it can be also run as a native language development lesson. Start in a circle by setting two rules for this activity: 1. Stay within the set boundaries and 2. Use only natural elements that are fallen to the ground (not alive) for the sake of our environment. Ask the students to take a minute and just enjoy the moment. Then, ask them to close their eyes and, when they hear their named whispered, they should name one of the things they enjoyed watching the most. Surely, at least one child will say: *forest* or *trees*. This lesson is about trees and their souls. Success criteria: to create in groups the story of a chosen tree and design a face for the tree that would reflect its personality described in the story.

Go!

Form groups of 4-5 students. Each group will take a short walk and choose a tree. First they will observe it attentively, starting from the roots to the canopy. Then, they will create a text in which the tree will tell a story (it can be its history or an interesting event in its life). This story will be written on the white

boards with the markers and should not be longer than 25 lines. Pay attention to text format: layout, title, outline and paragraphing.

The teacher will observe and help only if necessary.

Once the story is finished, the children can choose their art materials: red and white clay, acorns, sticks and leaves from the ground. Each group will make a face that should reflect the soul of the tree and match the story that the group wrote.

Once they finish, each group will present the story to the others, right next to the tree. After every presentation, the peers will comment on the match between the story and the *face* of the tree will appreciate the most interesting parts and will make suggestions, if necessary. Together, they will draw the conclusions of the lesson. (One of our students said: "Trees also have souls, just like us!")

Look back!

Make a final circle and ask questions like: "Who tells you stories? What difference does this make in your relationship? Why are stories important? Do you think, our faces mirror our souls and the choices we make in life? Do you think trees have souls? If they have a way of thinking, connecting, talking to each to each other, how fair is it to cut them?"

Appreciate text correction and outline, involvement and teamwork.

Follow up!

- You could ask the children to imagine a whole community and give different roles to the trees (the mother tree, the chef, the guardian etc).

Fine arts

Fine arts preschool activities:

- The musical staff of nature
- Nature's orchestra
- Orchestra of soils
- The music boxes
- The joy of loose parts
- What can you create?
- Small creatures
- Nature head collage
- Colourful portraits
- The highest tower
- Stick domino
- Natural sculptures
- Delicious art
- Cakes and cakes
- Trip to the past
- Painting nature with nature
- Natural palette
- Leaf paint brush
- Leaves paiting leaves
- Paint by numbers
- Cone painting
- Let's colour stones
- The autumn owl
- The autumn elf
- Winter landscape
- Snow and Sun
- My beach
- Leaf book
- The dot
- True colours

Fine arts primary school activities:

- Composing a nature symphony
- Sounds of spring
- The duration of musical sounds
- Fall symphony
- The music behid the science
- Water molecules game
- Tree of life
- Cord trees
- Nature into the classroom
- Our mandalas
- Decorative stones
- A tasty Italian flag
- Making trinkets
- Magical wool fairies
- Symmetry in art
- The power of observation
- Discovering Magritte
- Mud painting
- Flower pigments
- A different nest
- Easter eggs
- How do you play?
- Corn husk dolls
- Natural art detective
- Faces of nature
- Lyrical autumn
- Perform your own story tale
- Nature in action

The musical staff of nature

Get ready

For this activity, you should motivate your students to create their own musical rhythms and motives with the use of natural elements. Each group of natural elements will represent a sound.

The students should be divided into teams of 4-5 people. The aim of the activity is for them to research and collect at least five different groups of natural elements (e.g. 1:pinecones, 2:sticks, 3:stones, 4:leaves, 5:nuts). Once these have been created, they should work with their teammates and decide what sound each of the element groups should represent. These sounds should be produced either with their body (e.g. jumping, clapping) or with their own voices.

Make sure to encourage your students to observe carefully the outdoor area you have taken them to and collect different natural elements. In continuation, they should match them with sounds.

Your colleagues/teachers who are engaged in the activity should assist the whole group in this procedure and coordinate the teams if needed.

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 45 min.

AIM:
To explore and understand basic music values, to experience and practice rhythm. To have fun!

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Natural elements

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Go!

The coordinator of the game or else the maestro divides the whole class into teams and explains the instructions of the game. They should clearly explain the aim of the game and emphasize the importance of teamwork.

Primarily, each team should collect and create at least 5 groups of natural elements (e.g. stones, sticks etc.) Once the first stage has been completed, each team should categorise the materials they collected and order them in a straight line. Each team should pick a particular sound for each element group based on the number of items in each of them. For instance, 5 pinecones= 5 claps, 2 leaves= 2 jumps, 3 stones= 3 whistles. Once each team experiments and decides upon the sound of each group, they should create sound motives (e.g. 2 pinecones- 2 claps, 1 leaf- 1 jump, 3 pinecones- 3 claps, 1 leaf- 1 jump, 3 stones- 3 whistles). At the end of the activity, each team should present to the rest of the class their musical staff and motives they have created with their teammates.

Look back!

Gather your group in a circle and discuss the activity. How did they like it? Could they easily collect and categorise natural elements? Did they experiment with motives and sounds? How did they reflect on their teamwork? Was there anything challenging for them? Allow the children to express their feelings and thoughts on the activity.

Follow up!

- With primary school learners you could choose 7 types of natural elements, each representing a musical note (do, re, mi etc.). Let them create in groups short musical scores with these natural materials and then, invite the other groups to interpret the tunes.

Nature's orchestra

Get ready!

The coordinator collects large stones, pinecones, sticks and other natural elements they find in the outdoor area they have chosen for the game/activity.

The aim of this activity is to experiment with natural materials and create music from natural elements. Hence, changing their actual use and transforming them into musical instruments!

Go!

The coordinator of the game gathers the students in a circle. The group gets divided into smaller teams of 3-4 people. Once they all come close, the teacher should hand out different natural materials to the teams. Then, the teachers should ask their students to do some experiments with these materials and produce different sounds. Make sure to motivate them to try different combinations (e.g. pinecones with pinecones, sticks on pinecones, sticks on stones etc.) and explore the sounds coming out. They can try out different rhythms or exchange the *musical instruments* created. Finally, each team plays out a rhythm with their instruments and then

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 20 min.

AIM:
Changing the actual use of natural elements.

CLASS ORGANIZATION:
Groups.

SUPPLIES:
Stones, sticks, pinecones.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

maestro of the orchestra and signal with his/her hands which team starts and which one continues playing!

Look back!

Gather the children in a circle. The coordinator asks the students if they want to leave behind their *musical instruments* for the next time they visit the area. Additionally, they can also suggest to the students to make a presentation of their musical creations to the rest of the children of their group before their departure.

Follow up!

- Bring in a variety of musical instruments. In what way are they similar or different from the materials in the forest? What makes the sound of an instrument so special?
- Use the sticks, rocks etc. for rhythm exercises like some of the ones you can find here: https://www.youtube.com/watch?v=z9WAvSPjHmY&t=2435s

Orchestra of soils

Get ready

Choose a quatrain musical-kinetic song that you and your students know very well. For example, you could choose a song you normally sing when you are in the forest or a song that you have created as a class.

Every time a sentence of the song ends, it needs to be followed by a movement (e.g. clapping of hands/fingers or touching their knees etc).

Before the activity, make sure that the outdoor space you have chosen has various natural elements for the students to use. Gather your students in a circle and start the activity.

Go!

The coordinator of the activity explains the instructions of the game to the students. Allow the students to look around the area for about two minutes in order to collect natural elements (e.g. sticks, stones, pinecones etc.) which will be used as musical instruments. Once every student finds the element(s) they are happy to work with, they return to the circle. Once everyone completes this process, one by one they make a sound with the element they have chosen. The whole group should pay attention and listen carefully in

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 30 min.

AIM:
Exploring and understanding basic music values, experiencing and practicing rhythm**.**

CLASS ORGANIZATION:
Whole class

SUPPLIES:
Natural elements.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

order to distinguish between the elements that can produce a loud sound and the ones that produce a quiet sound. Further, the whole group should start singing the song you have chosen whilst playing its melody with the natural elements, musical instruments. Hence, the initial movements that followed the song get replaced by the sounds. The orchestra may play in different ways such as, loudly or quietly producing sounds with their instruments, individual sub-teams playing one by one or altogether as a group.

Look back!

Gather your group in a circle and discuss about the activity/game. "Were the students able to observe differences concerning the volume of the sounds ? What were the challenging parts during the activity? Did every sound coming out from the natural elements had the same volume? Were the instruments used made out of the same natural element? Were the students able to play the song coordinated with the rest of the orchestra?" Allow the children to discuss their thoughts and feelings on the activity.

Follow up!

- Practice a list of songs as the above and have a concert for the parents.
- Nowadays, many bands experiment with new sounds produced in different ways. Look up for several videos and discuss with the children the type of sound and the volume produced by these unusual instruments.

The music boxes

Get ready

This activity is a musical game made with unique musical instruments. You need different materials from nature, two of the same kind from each - stones, sticks, leaves, seeds, chestnuts, acorns, etc- that fit the size of the containers (various boxes) you have. Such an easy-to-make musical instrument kit can be used to form a small orchestra with the children. Before starting the activity, do some exercises to prepare for the activity (a few exercises with your fingers, rhythmic hitting of the palms or different parts of the body, vocalizing to warm up the voice, etc.).

Go!

To capture the children's attention, present their boxes with natural elements and let them make predictions about how they might use them. You will notice that they will be very curious to see what is in them, they will hit one against the other, shake them, compare them with those of their colleagues and observe the sounds they make. This is the time when you can identify which boxes make low, high, loud, barely noticeable, sharp, serious, pleasing or less pleasing sounds. Then start humming a song they know. This

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 45 min.

AIM:
Development of harmonious relations with music, development of sound and rhythm perception, development of attention.

CLASS ORGANIZATION:
Whole class

SUPPLIES:
Small containers, different objects in nature, two of the same kind: stones, sticks, leaves, nuts, acorns, etc.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

song can be "Musical Instruments" from the link below. Tell the children that there is a musical game in which you are the conductor and singer of the song that you have just hummed and they form the orchestra that will have to keep the rhythm of the song. Play a rehearsal game to show them how to keep the rhythm and how to accompany the song with the help of the musical boxes. Then play the music together with the children. Some children will find it hard to coordinate, not knowing exactly what rhythm or measure to use but following the example of your colleague and yours will help them manage to keep the melodic line. If it is an easy song that does not use many types of musical instruments, divide the children into groups so that each group represents a musical instrument. Let them choose the music boxes they think are representative for the instruments of the group they belong to, and help them with suggestions. Also, a child could replace you and be a conductor.

Looking back!

To reward the children let them make their own music boxes with other natural materials that you have prepared beforehand (beans, pips, seeds, fir cones, etc.) and let them test them. Then, make the connection to real life and ask them how they felt during the activity, asking them questions like: "Do you think this musical game helped you with something?", "How can we play with the music boxes?", "How did you feel?", "What did you like and what didn't you like?".

Follow up!

- Use the music boxes for a memory game for the sense of hearing.
- Describe the sounds by using adjectives.
- Be a songwriter and create your own songs using the music boxes as musical instruments.
  https://www.youtube.com/watch?v=KVdDJWZ7Z_I – Musical instrument song

The joy of loose parts

Get ready

Loose parts are objects or materials like sticks, rocks, seeds, leaves, sand, buttons, screws, beads, etc. that provide children with endless opportunities for combinations, thus greatly developing their creativity. Some of the benefits of loose parts play are: they are mostly natural materials that the children can feel and enjoy; they are available and most of them cost free; they develop children's hand-eye coordination, gross and fine motor skills; when working in teams, loose parts can highly contribute to emotional development and sense of achievement.

The place you choose can be inside or outside. The play can be theme based (like Spring Tableau, see picture) or free. It can be done individually, in pairs or in groups.

Go!

Get the children's attention by introducing the boxes with the loose parts. Name the materials that can be used and talk about their colour and shape. Avoid using small objects with very young children. Also, be aware that they might swallow things. This is why, children aged 2-4 should work individually or in very small

CURRICULAR LINKS:

AGE GROUP: 2+

TIME: 10-45 min.

AIM:
Develop creativity, problem solving skills and collaboration by playing with loose parts.

CLASS ORGANIZATION:
Whole class, groups, individual.

SUPPLIES:
Boxes with natural or man-made materials like leaves, shells, buttons, popcorn, vegetables etc.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

groups and under the supervision of an adult. Also, if you use loose parts that look like food (for example: berries, nuts) they should be edible. Check for any allergies before playing with loose parts.

Children can create big or small things, using all natural/ all artificial or a combination of natural and man-made loose parts, make something simple or something complex. Loose parts can be combined with drawings or paintings, the craft can be done in a box or in a frame, based on a story or just for fun. While working, children will count, talk about the properties of the materials, tell stories, solve problems, and collaborate.

Look back!

At the end, let each child/team present his/her work and talk about the joy of creation. Appreciate involvement, creativity, perspective in each presentation!

Follow up!

- You can find more ideas of loose parts play in *The Shape of Nature exhibition* with the following link: https://sites.google.com/view/the-shape-of-nature/home/loose-parts?authuser=0

What can you create?

Get ready

The outdoors is the best setting for this activity. In the beginning of the lesson we will review numbers from one to ten, we will ask children to count by twos starting from O and 1 and to count backwards.

A short game that you can play to practice numbers is hiding fingers behind and guessing the number of fingers hidden. Whenever the children the children make a guess you can say *Correct/ The number of fingers is higher/ The number of fingers is lower*. This way, if they did not guess the number from the beginning, at least they have a more limited range to make a guess.

You can also talk about natural elements that they can find in the surrounding environment. We will encourage the children to take what is already on the ground and not living nature like flowers, branches, etc.

Go!

The teacher will organize the children in small groups and ask them to find a different number of various natural elements, for example one seed, two stones, three leaves, four sticks etc.

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 90 min.

AIM:
Develop their creativity, speaking skills, critical thinking

CLASS ORGANIZATION:
Small groups.

SUPPLIES:
Natural elements like stones, leaves, sticks, seeds.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

You can either give each group a worksheet with a visual representation of the required elements or you can repeat the task 2-3 times so that the children remember the 5 elements. Give them a couple of minutes and then ask them to show the group what they found.

Next, they will have 15 minutes to create a piece of art with all these materials they found. You can give them a theme or encourage them to create according to their imagination. Monitor the group activity and observe teamwork in order to encourage all children to participate with their ideas.

Each group will show their creations and they will explain what they have created. Encourage children to use full sentences and even to have a story behind the picture.

Look back!

Point out that you started from numbers to create art and a story and that numbers are important in tradition fairy-tales, too (there are usually three sons, the dragon has 7 heads). Ask the children to think of numbers that are important to them (how old they are, the number of brothers and sisters, the number of their apartment etc.)!

Follow up!

- We can study with our class about natural artists like James Brunt. http://www.jamesbruntartist.co.uk/

Small creatures

Get ready

For this kind of activity you need to be outdoors in a place with natural elements such as: sticks, leaf, stones, seeds, etc. At the signal of a teacher (a song, a shout, a bell, a whistle, etc), children gather together ready to start the activity. In order to carry out any activity in nature, so that it is protected and the children are safe, it is advisable to have a set of general rules that children should know and repeat every time. Furthermore, it is recommended to show the children the area in which they will operate.

Go!

Get the kids attention by introducing them to an insectarium that also contains spiders, molluscs and crawling insects. If you don't have one, just catch some insects in a jar, or show them some realistic toys. Tell them that they are following an art activity where they will not use pencils, brushes or watercolors and ask them questions like "Why do you think I am showing you these animals?", "Can we do an art activity without the tools we usually use when painting or drawing?", "What materials can we use?". After the children come up with some ideas, stop at the fact that

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 30 min.

AIM:
Develop logical thinking and spatial awareness; recognize the shapes used in the Tangram game.

CLASS ORGANIZATION:
Whole class, small groups.

SUPPLIES:
Leaf Tangram Kits – at least 1 per group.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

you can show "The little living creatures" through a collage of natural elements, found on the spot. Start by observing the insects and other animals using magnifying glasses, describing details such as: insects have three parts and are formed of the head, thorax, and abdomen, have six legs, some have two pairs of wings, others have no wings, have compound eyes.

A spider has eight legs and belongs to the family of arachnids and not to insects, the creepy crawlies and snails do not have all the peculiarities of insects so they are not part of the same family, etc. After you have guided the careful observation of the children, present the objectives of this activity by telling them that you are interested in finding elements of nature which will suit building small living beings, at will. Give the kids a time limit and make sure you tell them from time to time how many minutes they have until the end. The collage should not take more than 15 minutes. If they wish, you could let them work in pairs as well. As they explore the terrain to get their materials and work on collages, go to them and guide them with questions or observations to help them develop their attention to detail and encourage them to create, imagine and discover other little creatures in nature. Allow them to experiment, touch, make noise and smell some natural materials. Ask questions such as: "Why did you use the leaves for the wings and not the stones?", "How many feet does your insect have?", "Why is the body so big and the head so small?" "Why did you choose

to build this one? "How do you think your little creature feels in nature?" "Why?". It is important that we do not criticize any representation of the little living beings made by children and remember that in art nothing is wrong. However, we can make suggestions that fix the information received during the observation period.

Look back!

After the time is up, you organize a small art gallery and encourage the small artists to talk about the choices they made. Finally, make the connection to real life and notice that by looking at the same insect (object, different forms), we can see things differently, some may pay more attention to detail than the other, making us different and unique. Ask the children how they felt during the activity, which was the most difficult thing for them during the activity, what they liked, what they didn't like, etc.

Follow up!

- Study the painters who use or have used the little creatures in their art - Andy Warhol - "Happy Bug Day".
- Read Eric Carl's "The Very Hungry Caterpillar" and study butterfly metamorphosis.
- Introduce the concept of symmetry and play it through collage.
- Study the useful and useless insects by following them in nature

Nature head collage

Get ready

"Nature head collage" activity is meant for outdoor and indoor lessons. This activity can be done all year round. "Nature head collage" should have short instruction times on how children can use free natural materials, like leaves, flowers, small sticks, grass, stones, sand.Children can work individually or in groups of 3 children.

Go!

Make a circle with the children and ask one of them to be your pair in the middle of the circle. Describe your pair's face (the hair is long/short, what colour it is, the eyes are big/ small and the colour, the nose is straight/small with big/ narrow nostrils, the lips are full/ thin etc. The child who is your pair will describe your face, too. Now ask the children to form pairs and describe each other at the same. Show them an example of ready-made collage and tell them the mission for the day– to decorate the head with natural elements.

Next, the children collect natural elements for making the head collage. Use what you can find on the ground also use either flowers that

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 40 min.

AIM:
Develop creativity, personality, language skills, working individually or in teams.

CLASS ORGANIZATION:
Groups, pairs, whole class

SUPPLIES:
Natural materials, glue sticks, sheet of paper with drawing, templates of different human faces

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

you grow in the garden for using them as teaching materials or flowers that you buy at the market.

While kids collect natural items, they can ask, discuss, and comment on their colours, patterns or shapes. After that, children glue the natural elements to shape the human nose, hair, eyes and mouth. They can add earrings or necklaces. Once the artwork is completed, each child or a group of 3 children will present their head collages.

Look back!

In the end, have a final reflection on learnt lessons and discuss, what kind of natural materials children used while making the "Nature head collage".

Follow up!

- https://mothernatured.com/printables/nature-craft-collage-boy-and-girl-head-printable/
- https://tinyurl.com/2zmtfajc&biw=1920&bih=920&dpr=1#imgrc=hNTPgly_sGimgM

Colourful portraits

Get ready!

Begin the glass with a seasonal song, we sang a very one called *Golden autumn*. Which season does the song remind us of? What changes occur during this season? What is autumn abundant of? Have you heard that autumn is the biggest painter? What colours prevail in this season?

We are going to use these same colours in our class to make interesting and unforgettable human portraits.

In a power point presentation we look through beautiful autumn scenery, different animal figures, birds and human heads made of leaves.

Go!

Pupils can work individually or in groups of four. The students who are going to work in a group of 4 receive a big sheet of paper - A3, and those who are going to work alone - A4. We begin with cloring the pictures and then we decorate them with colourful leaves. In addition to leaves we can use all kinds of pods and seeds for earrings (like acacia pods or maple seeds) or other interesting supplements.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 35 min.

AIM:
To complete various portraits with the help of autumn leaves and other parts of different plants.

CLASS ORGANIZATION:
Whole class or groups – voluntarily.

SUPPLIES:
Sheets A3 or A4 with images of human figures, leaves gathered by the children

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

We can also add necklaces, bows or hats.

Look back!

Once the pupils are ready, they present their work. They can make their own portrait, someone's they know (a friend, a family member) or just a face. They can give a name and create a short story for the portrait. Make observations of how they worked together as a team and ask what else can we create from the gifts of autumn.

Follow up!

- Make the children kinds of the forest and princesses of fall: cut a A4 cardboard piece in half on the long side. Staple the two parts at one end and put it on a child's head to measure a crown. Measure and staple so that you have now a circle that fits the child's head. Decorate the crown with fall leaves. You can either glue or just stick the leaves on a band of sticky tape. Use the nicest and biggest leaf in the middle.

The highest tower

Get ready

To start this activity we need to collect slim sticks in the forest during five minutes, all the groups will have the same number of sticks (about 8-10) which should have more or less the same length (about the size of their forearms) and not thicker than their little finger. It would be much easier for them to find suitable sticks if you gave each child a model stick that they can compare to the ones they find.

Sitting down in a circle the children will have the chance of touching, smelling and feeling how their sticks are. Encourage them to describe the sticks: colour, shape, size, smell, the tree they come from...

After analysing the sticks we will give them a piece of play-dough. This play-dough has to be of a harder type to be able to keep sticks together.

Go!

With all the materials ready they need to build the highest tower putting everything together. For this task they will have 10-15 minutes.

There is not only one way to do it, so the creativity will be their main tool.

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 60 min.

AIM:
Develop fine motor skills, team work, listening and speaking skills, empathy and expand vocabulary.

CLASS ORGANIZATION:
Small groups or individual.

SUPPLIES:
Slim sticks, play-dough

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

They can discuss strategies; they must negotiate which stick goes where, developing resilience and negotiation techniques; they can come with new solutions as they advance with the tower.

After finishing, the tower needs to stand at least 10 seconds. The winner won't only be the highest tower but the one that can stand the longest time without crumbling and falling. You can add a little dramatic effect, by counting from 1-10 together. The tower should stand by the time you read number ten.

Look back!

The purpose of this activity is to work as a team and listen to the ideas of all the components in the group. Also it intuitively teaches children about balance and gravity.

(We didn't add any photos because we want you to use your imagination)

Follow up!

- After doing this activity we can reflect about bamboo and how it is used to build in some countries like bamboo scaffolding. Here is an example: https://www.youtube.com/watch?v=QqUS4JGbb3I.
- Children can watch a song about the towers of the world if they click on this link:
- https://www.youtube.com/watch?v=3z-wfHpZTbo.

Stick domino

Get ready

Here is a creative way for your students to make their own domino with natural elements. Firstly, together with the children collect at least 20 sticks from the forest, or an outdoor area of your choice. If you can't do this, you can bring some sticks yourself in the class.

Choose 4 colours (e.g. red, blue, white and green) tempera, or other type of paint and dilute them with water. Use 8 small cups and fill them up until the middle (2 cups per colour). Finally, place these on a table where the activity will take place, along with the sticks and a surface upon which the children will place the sticks to get dry.

Go!

Gather a team of 8 students around the table and ask them what they see. Explain to them that the aim of the game is to paint the ends of the sticks with one or two different colours. For example, two red ends or 1 red and 1 blue, so that these can be used as a domino. Ask if they could think of ways that this could happen by using the materials placed on the table solely. If a student suggests that you dip the sticks into the caps with the colour, allow

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 30 - 40 min.

AIM:
To make a game collaboratively; to practice self-control while using paint. To have fun!

CLASS ORGANIZATION:
Small groups.

SUPPLIES:
20 (or more) small sticks, 4 different colours of paint or finger paint, 8 pots for paint.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

them to try it out and encourage the rest of the group to do the same. This way the students will start dipping the ends of the sticks into the caps and stir them around. Once a stick is painted from both ends, ask them to place it on the surface until it's dry. If the students suggest other ways of painting the two ends, allow them to experiment and see if it is effective! If no one from your class suggests any ideas, give them some ideas of your own and explain to them the activity with clear instructions (e.g. that they dip the ends of the sticks and stir until both ends get painted).

Look back!

Once your sticks dry, gather your group into a circle and place the sticks in the middle. Ask the children whether they liked the way the sticks were painted and if they found it easy/challenging. Additionally, ask them to tell you their thoughts on how these sticks will be used after the activity. Listen carefully and try out their ideas. In the end, however, let them know that they have just created a stick domino out of natural material.

Follow up!

- If you want to play the game, make sure that you have the right numbers and colours for the sticks. A classical domino would consist of 28 sticks (7 doubles and 21 singles). Each colour should appear 8 times: once each on 6 sticks and twice on the double stick.

Natural sculptures

Get ready

Take a good look at the natural environment and the materials you can or would like to make use of, before the group goes outdoors. At the same time, make sure you have clay available. Encourage the group to pick their own natural treasures. Must be something they like or find interesting from the surrounding environment. If there are poisonous plants, the students should be aware and stay away from them. Also, rare plants should be known and protected.

Make a box with all the natural materials! Engage in frequent discussions talking about the selected treasures and present them to the group. Notice their ideas and encourage them to make a sculpture with the materials they have collected!

Go!

Bring clay into the room. Talk about where the clay comes from and how it was used along history. Next, show the kids how they can mould it into shapes. When everyone makes the size and shape they want and after they enjoy themselves, open the box with the treasures they have collected. Explain that

CURRICULAR LINKS:

AGE GROUP: 3+

TIME: 30 min.

AIM:
To promote divergent thinking and self-expression using natural material and nature itself as a canvas.

CLASS ORGANIZATION:
Whole class.

SUPPLIES:
Clay, natural elements.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

they need to place the materials on the clay before it dries and stabilizes. On the clay they can put pine cones, pieces or whole leaves, small sticks, fruit anything else the kids have picked and/or chosen.

Look back!

When the artwork is finally dry, it is time to show it to the group.

Each child can present his/ her artwork to the group and give a name to their sculpture. Then all the projects can be put together as a museum exhibition at the school. In the group meeting the children discuss whether they like the sculptures or not, what they and their friends learned from this experience and what they considered to be difficult. Involve the parents and ask them to show and discuss with the children the clay pots they have in the house.

Follow up!

- See connections with the lesson *Clay* in Technology section.

Delicious art

Get ready

Presenting your own students' still life drawings with autumn fruits can give you the opportunity to discuss about autumn fruits and vegetables, about their colours and shapes. Suggest the children to use the gifts of autumn and, with imagination, create interesting and funny figures of animals.

You also need to prepare a great variety of seasonal fruit and vegetables. We used cauliflowers, black and red peppers, grapes and pears, apples, lemons, radishes, raisins and carrots. You can even add some mushrooms!

Go!

The teacher shows a hedgehog made of a pear, grape grains, and wooden chopsticks. Now, that you have got their attention, they can name the fruit and vegetables and make associations to shapes of animals. The teacher can also show different animal figures made from autumn fruits, vegetables and chopsticks to serve as inspiration.

Kids choose how to work – alone, in pairs or in teams to bring their ideas together. In addition to these materials some spices

CURRICULAR LINKS:

AGE GROUP: 5+
TIME: 35 min.

AIM:
To develop 3d vision and creativity by creating interesting and funny animal figures using fruits, vegetables, wooden chopsticks and spices; give opportunity for artistic expression and improvisation.

CLASS ORGANIZATION:
Whole class, small groups, individual.

SUPPLIES:
Fruit, vegetables, mushrooms wooden chopsticks and spices

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

(cloves, cinnamon sticks) and others interesting objects like flags can be used. Wooden chopsticks are to be used with care and adult help can be requested.

Look back!

"What does autumn give us? What kind of fruit and vegetables can we use and combine to create funny animal shapes? What animals have you created? Was it better to work alone or in teams and pairs?" Every child or the team/pair presents their work in an attractive way through sounds, poems, songs or improvised dramatization.

Finally, make a temporary exhibition by carefully placing the animals on a neutral background.

Follow up!

- Use fruit and vegetables to reproduce faces in Giuseppe Arcimboldo's style.
- Arrange for an open-air market run by children where they *sell* forest fruit that you collect together and vegetables and fruit from their own garden to parents and other community. Make sure that with the money you buy something that all the class can enjoy.

Cakes and cakes

Get ready

What if you get hungry during a nice walk in the woods or while you are playing in the open air in a nice garden? What if there is no food in your backpack? No problem: Nature knows how to help us and will certainly supply us with the necessary material to create delicious and very colourful cakes!

Cake production is an easy activity that can be presented in different ways either as an individual activity or as a whole class. If for example you want to celebrate a pupil's birthday it will be more suitable to involve the whole class group to create a big cake using leaves, nuts, pinecones, acorns, sticks, mud, and flowers, and any other natural material that children can find. We could pretend that the sticks are candles.

If instead your students are freely playing in the garden, maybe this is an activity that you can suggest children to do individually, or they can decide to pair up, or create a cake in group on their own.

Go!

Choose the right occasion on a bright sunny day spent in a nice park, in the woods during a hike, or even visiting a garden. Be smart in attracting your pupils' curiosity and expectation for the activity. To arise children's imagination, maybe you can start by telling a story about a crazy baker

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 30 min.

AIM:
Development of creativity and of artistic sense; fine motor skills, visual and manual coordination, abilities to cooperate inside a group; sensorial development, strengthening of observation skills.

CLASS ORGANIZATION:
Whole class, in groups, in pairs, or even individual work.

SUPPLIES:
Camera, tablet, or cell phone, natural material which lays lose on the ground: leaves, acorns, pinecones, nuts, pebbles, sticks, pine needles, pebbles etc.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

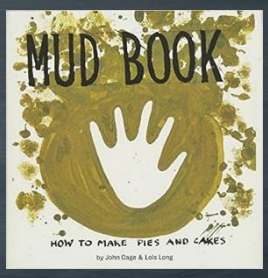
who lived in a magic wood and loved to bake very special pastries and cakes with what nature was offering him/her. Rehearse the basic rules of the game. If you are in a public park or in the forest children should be instructed about the exact area they will be able to carry out their search for natural elements, also indicate where the pastry shop of each group will be. Remind children that nature should be respected, and that they can pick up what lays lose on the ground. Create the groups, or pairs, indicate the time they will have at their disposal for each phase of the activity. First, children discuss among themselves and choose the shape and flavours of their cake. Then, they go around looking for natural things to collect to create it. They can pick up leaves, flowers, fruits, pebbles, sticks, pine needles, bark, mud, nuts etc. and all the material can be used to shape the cake. Once the cake is created, they can decide upon which changes to make to improve their final creation.

Look back!

When all the cakes are ready, each group of pupils will choose a student that will describe the cake list the ingredients, instructions for baking, its tastes and flavours. Pupils will then, go around looking at their friends' cakes and listening to all the cake recipes. Finally, before cutting the cakes and distributing the slices on big leaves, each group will take picture of their cake. At the end of the snack, maybe the belly will still feel hungry, but everyone will have probably enjoyed the activity. Before you leave the area to go back to school, remind your class that all material has to be reordered and returned to nature in an organized manner.

Follow up!

- After this activity you can read the book by John Cage & Lois Long "Mud cakes how to make pies and cakes" Princeton Architectural Press.



Trip to the past

Get ready

During the Palaeolithic era, apart from the making of tools and shelters humans started to represent through drawings made on rocks various figurines of humans, animals and other geometrical shapes. The aim of the activity/game is to motivate your students to create their own rock drawings and come up with a story to accompany them. The students should experiment with different natural materials before they decide what they would like to use and communicate their ideas and thoughts within a team.

Therefore, the students get divided into teams of four and each team starts by looking for the natural elements they could use to create their drawings. However, they should also start discussing their scenario prior to the creation of the drawings, as these will be based on the actual story line.

Make sure to encourage the students to try out different kinds of natural elements such as nuts, soil, stones, sticks and pinecones so as to find which are effective for them to draw on the rocks or stones. This is based on the idea that the students will explore and critically think which materials could work as "brushes" and which may not. The remaining teachers-

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 45 min.

AIM:
Developing and narrating a story, exploring drawing with natural elements, changing the use of natural elements. To have fun!

CLASS ORGANIZATION:
Groups of 4 children.

SUPPLIES:
Natural materials.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

colleagues should move around with the group and assist the students in anything they need.

Go!

The coordinator of the game divides the group into teams and through his/her narration about the rock drawings, they transport the children to the past where aboriginal people used to draw into caves. In continuation, each team explores the outdoor area in order to find natural elements to use for their drawings. The decision should be based on their experimentation on stones and rocks to find out whether these materials are effective enough to draw on the rocks. If not, they should think why. Once each team selects the natural materials they would like to use for the activity, they should discuss and think of a short scenario upon which the drawings will be based. Finally, once every team has completed their drawings, one by one they should present their stories and drawings to the rest of the group.

Look back!

Gather your group in a circle. Discuss about the strategies that were followed to make the rock paintings. What natural elements did they use and why? What differences could the students observe when drawing with different materials? Was there good communication within the groups? Was there anything challenging in particular? Allow the students to discuss and express their thoughts and feelings on the activity.

Follow up!

- This video explains cave art to young children: https://www.youtube.com/watch?v=HvQD0OZWEUc
- You can learn how to draw Prehistoric art here: https://www.youtube.com/watch?v=b2_iWoZvLtQ

Painting nature with nature

Get ready

Think about nature and its colours. Every season is different. When visiting the forest or the garden you can pick some fruit or nuts according to the season and let the students analyse them.

Then, the students and the teacher will sit and discuss about them. They will describe the smell and taste. Class can answer questions like: "What is it? How are they called? Where did you find them? What colours are they? "

Go!

Try opening different types of fruit with the kids, see their colours, try to print them on paper!

Let your hands get soiled and become similar to great painters! "What colour does the chestnut leave on paper? Is it different from the pomegranate's? What colour do both of them leave when used together?" Use your imagination and creativity! When each child creates the background they want, they can decorate their work with the collected materials of nature, such as small sticks and twigs, pieces from pine cones, fruit peels, leaves and everything else you may think of.

CURRICULAR LINKS:

AGE GROUP: 3+

TIME: 90 min.

AIM:
To get familiar with natural materials and become more creative.

CLASS ORGANIZATION:
Groups, whole class.

SUPPLIES:
A4 paper cut in half, nature's berries and fruits according to each season.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

We make a circle in the class and each and every student presents his artwork to the group. It would be nice if they child finds a name of tells the story of the picture.
We ask the children if they liked this activity, if they found it difficult, and what else we could do to make it better. We are brainstorming on other ways we can utilize the materials we used, i.e. we can try eating them, drying them, etc.

Follow up!

- See the next activity: *The Joy of Loose Parts* for more ideas on how to use natural materials.
- Can you make a rainbow using only the juice of fruit and vegetables?
- Compare natural colours to paints you can buy in the shop.

Natural palette

Get ready

Gather in a circle. Take a few minutes to observe the different colours in your surroundings. "What colours do we see around us, in nature, in our food etc." Talk about the origins of colour - where, when and why people started to use colours. How are colours enriching human life? What do we enjoy about colours?

Ask the children to think how they may create their own colours. Once the conversation has started and the children are sharing their ideas, decide on the colours desired for the creation of a natural palette.

Mention the usage of herbs and spices in art. Think of spices that resemble the colours you have chosen for the palette.

Go!

Divide the children into "colour" groups. Give them bowls with different herbs and spices and let them experiment with their own ideas on which to use to create the colour they desire.

Have your first attempts. Dilute a teaspoon of spice with one or two teaspoons of water until you get a thick paste. Try to draw with your mixtures on a piece of paper or cardboard to check its effectiveness.

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 45 min.

AIM:
To create and use a palette of natural colours; acknowledge useful material for drawing creations and be able to categorize them according to their properties; get familiar with simple techniques to create unusual pieces of art; recognize colours in nature and art pieces.

CLASS ORGANIZATION:
Individually, in pairs or mini groups - up to four.

SUPPLIES:
Spices and herbs, bowls ,spoons paint brushes, paper or cardboard

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

Gather in a circle and present your results to the whole group. Discuss alternatives and get organised for a next attempt. Ask children what they think of the process, if they enjoyed it and what other materials we could use.

Follow up!

- This activity may be combined with history, exploring past civilizations and how they made drawings.

Leaf paint brush

Get ready

How about making our own paint brushes out of the leaves that have fallen from the trees. Pine and fir, cypress and rosemary make the best brushes as their leaves are needle like. We can look at the shapes of the leaves and find the ones that would be more appropriate for our brushes. We can either go out and gather leaves and a stick for the brush and have the materials ready beforehand or the children can pick the leaves and stick they want to use.

Go!

Show the children leaves on the ground. "Can they think how we could use those leaves? Could we use those leaves to paint? How? Which leaves seem to be the best to do this job?" With the help of the adults the children wrap the leaves around the stick using rope or rubber bands. After our brushes are ready we give the children a piece of paper and some paint to see how the brushes work! Do the lines look similar or different? Which leaves make a thicker/thinner line? Why? Which paintbrush would be better at covering a larger surface with paint? How else can you

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 40 min.

AIM:
To practice divergent thinking; expand imagination and address personal expression.

CLASS ORGANIZATION:
Individual, whole class.

SUPPLIES:
Leaves, sticks, rope, rubber bands, scissors.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

use this paintbrush? (shake the stick gently to sprinkle paint).

Look back!

In our circle time we talk about our interesting brushes and about the leaves and the trees we used. The students can answer questions such as: "What else can we do with the fallen leaves?"

Follow up!

- Check the next activity called *Painting of a Leaf.*
- Encourage the children to paint unconventionally using things found in nature (acorn caps, sticks, moss, lichens, pinecones, nuts, berries).

Leaves painting … leaves

Get ready

Gather a small quantity of smaller leaves and blades of grass. You can gather them from the schoolyard (thuja and fir trees work well), from the vegetable gardens (parsley, dill are perfect) or from your outdoor area. With the leaves and the grass create natural paintbrushes by attaching a bunch to a stick with sticky tape or rubber bands (see side picture).

Go with the children on a short walk to gather the necessary materials for the lesson: big leaves of different shapes and sticks (no bigger than their forearms). Enjoy the walk in the forest and use this opportunity to marvel on the interesting or unusual things. (Just because you have already started a Fine Arts lesson, does not mean that an interesting mushroom or a hanging spider web in the sun should go unnoticed).

Go!

Gather the children in a circle and tell them they are going to paint leaves shapes with… leaves. Show them the natural paint brushes and ask them to touch them and to say what they are made of (leaves or grass with

CURRICULAR LINKS:

AGE GROUP: 2+

TIME: 20-35 min.

AIM:
To experience with shapes and traces of natural elements; recognize colours; give families ideas of common activities.

CLASS ORGANIZATION:
Small groups

SUPPLIES:
Sticky tape/ Rubber bands, cardboard, paint, paint cups

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

younger children, older children could make a guess at the type of the trees/ plants). Ask the children to predict what kind of mark does each type of paint brush leave and let them experiment with paint.

Now use step-by-step instructions of how to make the painting: stick a large and beautiful leaf on a rectangle piece of coloured cardboard with a small piece of paper tape. Prepare paints that reflect autumn colours and name them. Dip the paintbrushes in the tempera and paint/hit gently with the paintbrush around the leaves. Use different paintbrushes and various colours or paints. Once they are ready, let them dry then remove gently the leaf from the cardboard. Then ask the children to make a natural frame with the sticks. Adjust the length of the sticks if necessary.

Look back!

Ask younger children to look at the shapes of the leaves and describe them. Children over 4 can make a guess on the types of leaves just by looking at the outline. The leaves are not there, still our minds fill in the empty shapes with imaginary leaves.

Make an exhibition with all the paintings and share it with the families. They could also use this technique to have fun at home.

Follow up!

- Use the painted leaves and sticks to make a tree collage.
- Check out the lesson *Leaf paint brush*.

Paint by numbers

Get ready!

This activity is a colour and number game which helps children with fine motor coordination, ability to distinguish shapes, logical thinking and cooperation skills. To stir the children's attention, I asked them to bring a rock about the size of their fist and a stick as long as their arm. Let them suggest activities that you can do with this combination and then tell them that you are going to make a wonderful painting with them! Make a frame with the sticks and fill it in with rocks. Imagine a drawing suitable for the age of your preschool group for the picture. Write the numbers 0-3 on four other rocks (these rocks resemble a map key and will help you understand how to paint the picture). Each number has to match a colour just like you can see on worksheets that are called: *Colour by number, s*o you need a key which specifies the colour to be used for each number. You can do this by paining rocks in the colours to be used in the picture and writing the number as soon as the paint dries a bit. Note that these preparations can take between 15-20 minutes depending on the number of pictures.

CURRICULAR LINKS:

AGE GROUP: 2+

TIME: 30 min.

AIM:
To develop colour perception and reading of number; develop attention and team work.

CLASS ORGANIZATION:
Groups of 4-5 children.

SUPPLIES:
Rocks of about 2cm diameter, markers, paint, paint brushes, sticks.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Go!

Get the small group around the picture and ask them what they can observe. Then, explain that there is a surprise hidden in the picture and, in order to find it, we should paint each rock with the colour specified in the *key.* This is the moment when you can assess number and colour recognition in a fun way.

Make a demonstration for each colour, then paint together. It is important not to make the picture too big because the children will have a hard time painting it. While you are complete the picture, ask questions about the colours and numbers and sing songs together. Make this a very enjoyable activity!

Look back!

When they can already guess the picture, let them say what is the object in the picture and encourage them to paint all the stones to see if there are no other surprises to discover. At the end, ask them how they enjoyed painting the rocks and agree which games suggested in the beginning of the lesson are to be played next.

Follow up!

- With older children, you can use more numbers and colours.
- We can use the painted stones to mark the colourful sides of a path in the schoolyard.
- We can use some of the painted stone to play a *Memory Game.*

Cone painting

Get ready

Invite the children on a field trip and tell them that you need lots of cones for a craft activity. Ask them what kind of trees produce cones. Once you find the trees, observe their bark and leaves, the way the branches spread and the plants and creatures that inhabit the tree or the area. Talk about the cone (the main function of the cone is to protect the seeds from wind, cold weather or predators, a tree produces both male and female cones and they are like the woody flowers of a tree with scales instead of petals). Ask the children to loosen the cone scales and look inside. They may find a winged seed that contains lots of vitamins. Some pine-trees produce edible, very tasty seeds called pine nuts that are used in pesto. And…who doesn't like pesto, right? The trekking children will collect the cones in bags or rucksack; the more, the merrier but at least each child should have his/her own cone.

Go!

Next prepare the supplies and a protection for the table. Ask the children to paint each cone in their favourite colour. If they like more colours, the can pain more pinecones. With the help of the brushes, they will start to paint

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 90 min.

AIM:
Develop speaking and painting skills.

CLASS ORGANIZATION:
Small group (5-6)

SUPPLIES:
Cones, acrylic paint of different colours and brushes.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

them. Afterwards, each child will let it dry.

Finally, once the paint is dry we will classify them according to their colours, shape or size, we can count them or make patterns. Finally, you can invite everyone for a basketball match with cones or you can take the painted cones to the school to make further decorations (see the lesson with the *Autumn Owl*).

Look back!

At the end, we can sit in a circle, remember some of the important things about cones and coniferous trees then invent some other things that we could do with the cones. This activity allows them to work with natural elements, make decorative pieces and develop their creativity.

Follow up!

- Other lessons with cones in the Guide of Good Practices are *Pine-cone aircraft, Pine-cone sports* and the *Autumn Owl*.
- Once the cones are finished, in class we can teach the children to turn them into ornaments for the Christmas tree. We can follow the steps with the following link:
  https://www.youtube.com/watch?v=yQlPzV-n-gI

Let's colour stones

Get ready

With how many ways do you think we could paint stones? Let's see! First, collect with your students a great number of small stones from the forest or your school garden so that each kid has at least 6. If that is not an option, then you should provide your students with the stones. In continuation, choose 6 different colours (e.g. blue, purple, orange, yellow, green and red) and fill some bowls or caps with tempera or any other type of paint of your choice. For this activity, you will need two distinct tables or spaces. Each table/space should have 2 bowls with each colour. Next to the first 2 bowls, place 2 small sponges and next to the second pair of bowls place 2 brushes. Finally, next to the 3rd pair of bowls place 2 pinchers. Make sure that each table has one empty tray and one tray full of small stones. The activity is based on a team of 6 students!

Go!

Gather your students in a circle and announce them that you need their help to create colourful stones! After that, get up and start observing the materials that have been placed on the tables/spaces (stones-paint-sponges,

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 45 min.

AIM:
To experience different ways of achieving the same outcome; to enjoy the process rather than the outcome; to follow directions; to have fun!

CLASS ORGANIZATION:
Groups of six.

SUPPLIES:
6 different colors of finger paint or paint. 6 bowls or pots, 2 paint brushes, 2 pinchers, 2 sponges, small pebbles (at least 6 for each child)

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

stones-paint-brushes, stones-paint-pinchers). Once they have a look around and observe everything carefully, each student is placed behind a bowl and starts painting the stones with one out of the three available ways.

Therefore, if they have sponge in front of them they should dip it in the bowl with paint and then paint the stone from both sides. Once the stone is ready they should place it on the empty tray. If they have a brush in front of them, they follow the same procedure by using their brush. Finally, if they have a pincher in front of them, they should use the pincher to grasp the stone and dip it into the paint so that it is covered in colour. Once they do this, they should place it on the empty tray. By the end of the activity, every student should have painted 2 stones. When a signalling sound (e.g. Gong) is heard, the students should stand up and change their places so that each child paints 2 stones by using all three techniques: 2 with a sponge, 2 with a brush and 2 with a pincher.

Look back!

Once all students complete the activity, ask them to wash their hands and sit in a circle. Ask the students how did they find the activity and whether they enjoyed it. Which painting method did they find more enjoyable, easy or challenging? Additionally, ask them whether they can think of alternative ways to paint the stones or whether they can imagine how the stones could be used after the activity.

Follow up!

- Use the colour stones for as per lessons *Coloured stoneboard, Coloured stoneline* or *Talking stones.*

The autumn owl

Get ready

To start this activity we should go out in the nature to collect some pinecones, it is important to choose them correctly because they will be our future owls.

Sitting down in a circle the children will have the chance of touching, smelling and feeling of how their pine cones are. Encourage them to describe the pinecones: colour, shape, size, type, smell...

To do this activity, we will need the help of some parents. We could do this as an autumn workshop with the families.

Go!

Time to start! Have one owl ready to attract attention and show the children what the final product looks like. Then give each child a bag with the necessary materials and make a step by step demonstration of the making of the owl. Let's design our owl preparing the parts of the owl's body, cutting and sticking the felt for the claws and beak, the autumn leaves for the wings, and the googly eyes. Assist the children who have difficulties in cutting or gluing. After finishing the craft, each group will find some information about the life of the

CURRICULAR LINKS:

AGE GROUP: 3+

TIME: 90 min.

AIM:
Develop fine motor skills, team work, listening and speaking skills, empathy and expand vocabulary.

CLASS ORGANIZATION:
Small groups

SUPPLIES:
Pinecones (one per child), autumn leaves, goggling eyes, glue, scissors, box or bag to keep the owls).

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

owls, like how and where do they live? what do they eat? do they communicate each other? common things/ differences with other animals. They can share what they know about the owl then find the information through picture books, through a presentation made by the teacher, through the teacher's reading of children's encyclopaedia or through watching a video for kids on you tube.

Look back!

To finish the activity each group will show the class their autumn owls and will explain with the help of the parents all the information found about their lives in nature.

Follow up!

- Each group can invent a story with their owls and represent it to the class.
- Try to make other crafts from the pine cone: a spider, a mouse, a fox or a hedgehog.

The autumn elf

Get ready

Start this activity outdoor, so that children could perceive all the tactile and perceptive sensations that the Autumn season offers. Invite children to admire the variety of colours of the leaves, touch, and feel the different leaves surfaces, to hear the noise of the leaves cracking under their feet. In a big basket, collect as many leaves as possible, making children observe their different shapes. You can also suggest children to gather some leaves while taking a walk with their parents in a park or garden during the weekend.

Go!

To introduce the laboratory, invite the children to sit in a circle and read a story about Autumn, Autumn colours, and/or Autumn leaves. The teacher can check what Autumn books they have available in school, or select the best story and song on YouTube. Once the leaves have been collected, invite the children to observe and say all the leaf shapes and shades of colours. Help the children identify all the main autumn colours, shades and shapes, and then using the autumnal paints, help children to reproduce the leaves adopting different techniques on small cardboard sheets. Then they will cut them out.

After, the teacher informs the children that those leaves they created, will be used to decorate the Elf's clothes. Children glue their leaves on the Elf

CURRICULAR LINKS:

AGE GROUP: 3+

TIME: 3 h

AIM:
Expand vocabulary; identify seasonal characteristics shapes and colours; develop dramatization skills.

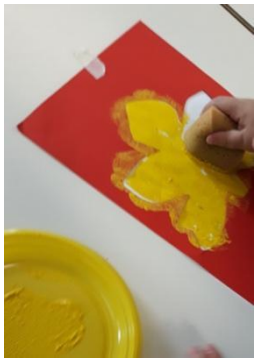
CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Large elf cardboard template, sponges, paint brushes, crayons, vinyl glue, black plastic bags one for each children, curved scissors

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

template. Use the remaining leaves that the children created to decorate the black garbage plastic bags. On each plastic bag cut one hole for the head and two holes for the arms. This way, each child can wear a simple costume and become an Autumn Elf. Children usually love to dress up, and pretend they are different character of stories. All together invite them to dance and sing Autumn songs.



Look back!

You can hang all the costumes around the classroom together with the Autumn Elf.

Follow up!

- Together with the children, create a fairy-tale for the elf and turn it into a dramatic play. Record it and share it with the families.

Winter landscape

Get ready

For this activity you will need to collect cones, twigs, pine needles, small stones or crystals, pieces of bark, acorns. Also think of materials that make fake snow (Styrofoam beads, white flocking soap flakes, decorative snow, painted cornflakes, salt, white playdough and ever bits of paper can be used).

Go!

Invite the children to come out in the yard of the kindergarten. Use a riddle about winter: "It is children's favorite, it makes them slide and it is called ..."

Direct the children's attention to the winter season by asking them questions: "How do we dress in winter? What is the weather like during this season? Is it snowing in our city?"

"As there is rarely any snow in our hometown, we will make some today."

Give the children the task to prepare the snow and then spread it on a thick cardboard. Put some small twigs, pebbles and cones on the tables and ask the children to push and press them in the snow. Help them with tips so they can create a forest picture. For example, the

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 20 - 25 min.

AIM:
To build up children's interest in nature; to involve children in the beauty of native nature; to form children's aesthetic sense.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Pebbles, bark, pine cones, pine needles, fake snow, mirror, white clay or playdough

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

twig can become a log, the fir needles become a tree, a piece of mirror becomes a frozen lake, a pile of snow turns into a slide or they can also make a snowman with clay or playdough.

Look back!

Let the children present their work. They learn that in winter conifers remain green and their leaves do not fall off. They express the feelings and emotions of being outside. Finally, for an emotional ending of the lesson sing a winter song, who knows? Maybe it will bring the snow along!

Follow up!

- Create along the year the image of the forest through the four seasons and compare the four crafts.

Snow and Sun

Get ready

Print 3-4 winter pictures and glue them on a coloured cardboard. When dry, cut them into four even or uneven shapes to make puzzle pieces. If the children are older, you can cut the pictures into more than 4 pieces. These puzzles will be used for winter season observation. Finally, place the puzzles pieces that belong to the same picture on a table each in the schoolyard and invite the children outside.

Go!

By asking questions, we direct the children's attention to them. "What do you see in these pictures?, What season is it in the pictures?, What season is it now?" (It`s winter, despite the lack of snow in our town.) (It is cold, we are wearing warm clothes, although the sun is shining.)

Ask the children to put the puzzles together and to describe what they see in the pictures. "Compare the weather in the pictures to what you see around! What are the similarities? How about the differences?"

Then direct the children to the game *Snow and Sun*. For this game the two large pictures will

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 20 min.

AIM:
To build up children's interest in nature; to develop observation skills.

CLASS ORGANIZATION:
Groups, whole class.

SUPPLIES:
Puzzles, 2 larger pictures with snowflakes and sun.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

be used. When showing a sign with a snowflake, the children dance like snowflakes, when showing a sign with the sun the children wave their hands. For an emotional ending the game is played on music.

Look back!

Call the children back in the circle and ask them to say at least 5 words connected to winter. Through these lesson they will better remember the changes during the winter in their hometown, Burgas.

"Which part of the lesson did you like the most?" (The most interesting moment was when we played games in the yard.) "Are you satisfied with your work?" (Yes, it's always fun when we go outside.)

Follow up!

- Study what happens to the water in different seasons.
- In freezing or snowy weather study which boots convey more safety: the ones with a smooth or rough sole? Why?
- Make a book on basic types of snow. Get out on a snowy day and study with a magnifying glass the snowflakes falling. Which type are they?

My beach

Get ready

When the new school year begins, and suddenly you find yourselves back in class surrounded by little children, you desperately crave for a stratagem to attract pupils' attention and fascinate them. If your pupils are in school for the first time, make sure you collected plenty of shells, strange rocks, polished pieces of glass, and bags of sand during your seaside holidays. If your pupils are older, you might have reminded them to pick some interesting beach material before the end of the school year.

We should receive these presents, while listening carefully to children accounts. With this activity the class will focus on sharing what they collected during the Summer and sharing memories. By manipulating this material, you can invite children to observe, touch, feel, and smell. By doing this, you will solicit memories and encourage children imagination.

Go

Arrange the children in a circle and place all the materials over a large cotton sheet in the middle of the circle.

CURRICULAR LINKS:

AGE GROUP: 3+ to 10

TIME: 1st step: 30 min. 2nd step: 30 min. 3rd step: 45 min.

AIM:
Creativity with natural materials, fine motor skills, five senses awareness, observation, develop teamwork.

CLASS ORGANIZATION:
Groups, pairs.

SUPPLIES:
Wooden tablet, tempera colours, vinyl glue, paintbrushes, shelves, sand, containers.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

1st step: Invite pupils to observe, pick what they are curious about, touch and feel the surface of each object, smell it, see if it produces any noises.

2nd step: Let the children play with the sand, let them feel the sand with their hands, play with it, filling some cups and other containers, pouring it, and sifting it.

3rd step: Once the children have observed, touched, and played with all the beach material, tell them it is time to work, now their task will be to create a sand beach panorama on a large wooden tablet.

Tell the children that the tablet will be divided in three parts: in the lower part there will be the sand beach, in the middle band they will paint the sea waves, and finally, in the upper part they will recreate the sky with a large orange and yellow sun at the side.

Organize the children in pairs, distribute some paintbrushes. First, prepare some deep blue paint for the sea, and some light blue paint for the sky. Let the children choose one dark yellow or orange shell which can be glued to represent the sun core. Then, some children will distribute the vinyl glue on the bottom part of the large wooden tablet, then other children will pour some sand and spread it all around.

Once the whole tablet is covered with sand, let it dry. Later, each child will glue rocks, shells and pieces of polished glass, wherever they prefer on the sand. When the artefact is ready ask the children what they feel looking at it.

Look back!

If your children are in the later years of Primary schools you might ask them to create to sand beaches: one clean sand beach and one sand beach filled with plastic, cigarette butts and other signs of pollution. While observing the two beach models you can then ask children to comment and express their feelings about them.

Follow up!

- Other art craft ideas with shells would be: cast shells into plaster, make a shell mobile, make decorated jars filled with as many books as the class read during the summer holiday.
- Shells can replace rocks in any of the activities described in the guide. Use them for language development, mathematics, art, science, physical education or personal development.

Leaf book

Get ready

Children love books, they enjoy handling books that have peculiar shapes, and are made out of unusual materials. We can try to build a book with our children using natural material that we can easily pick up in our school garden during Autumn. Begin the activity with a nice stroll in the garden, and by inviting the children to pick up the colourful leaves that they find on the ground. The children imitate the teacher and while picking up leaves, they also observe each leaf carefully. To encourage observation of leaves colours and shapes, you can play easy games with your pupils. You may invite children to first pick up all the green leaves that they can find, then the yellow leaves, and finally the red and brown ones etc. You may also ask them to bring the biggest leaf they can find and the smallest leaf that they can spot. Continue by asking to bring leaves with sharp pointy margins, and leaves shaped like a heart, or like a star, etc. Later all the leaves might be classified according to colours, size and shape, and so on.

CURRICULAR LINKS:

AGE GROUP: 3+

TIME: 4 hours

AIM:
Observation of the Autumn signs, development of fine motor skills, expansion of creativity in the use of natural materials.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Leaves, corn flower, seeds, rice, barley, oatmeal and dried vegetables, cardboards, markers, pastels, paint, vinyl glue, sponges, paint brushes, pointed paper fasteners, scissors.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Go!

In class distribute five cardboards shaped like a leaf to each child and show how to decorate each cardboard leaf applying different techniques.
LEAF BOOK COVER: use magic markers or pastel to colour it.

1st page: Autumn paint, deal the leaves you collected in the garden and use them as if they were brushes or make colourful leaf prints of different shapes of leaves.

2nd page: crumble up all the dried leaves and glue the little pieces on the leaf shaped cardboard.

3rd page: spread some glue on the cardboard leaf and sprinkle some corn flour on it.

4th page: spread some glue and cover this leaf page with various seeds such as: lentils, rice, barley, oatmeal, dried peas etc.

Finally, when the leaves are dry enough, help the children to put all leaf pages together and insert the pointed paper fastener through them.

Look back!

At the end of the work each child shows his/her product to friends. The leaf book can decorate the kindergarten class, and then can be distributed to the children to take home and be read with mom and dad...

Follow up!

- Between two sheets of wax paper spread some waxed pencil crumbs. Use Autumn's colors. Protect the wax papers with a simple white paper and iron it. The crumbs will melt and partly mix. With a marker draw the same leaf pattern as the rest of the book. Cut the wax leaf with a scissors. You can add it to the book as it is or paste it on a white sheet of paper.
- Paint one or two white cardboard leaves with natural colors: spirulina, turmeric, soluble coffee, paprika (powders dissolved in a little water). Before full drying, draw the leaf ribs with soft colored pencils.
- Older students can write on the painted leaves messages or lyrics dedicated to autumn.

The dot

Get ready

Introduce the activity by reading the students *The Dot,* story by Peter H. Reynolds (online links at the end of this activity). Ask them if they enjoyed the story and if they experienced a similar situation. Continue by directing their attention to the dot from the story as shape in real life and invite them to look for dots around their classroom. Then ask them about what kind of objects can make a dot. Most probably the answers will be that generally all round objects can make a dot. That is why, invite them to investigate this statement.

Go!

Introduce the tray with different types of natural objects: stones, sticks, leaves, marbles, flowers, acorns, seeds, wooden disks, pine cones, etc. Give the students 5 min to explore these objects with all their senses and then another 5 to take turns in describing them. Next, invite them to think about which of these objects can create a dot. Encourage them to think out of the box and to test each object by placing it in paint and stamping with it on a sheet of paper. Observe and discuss the many sizes of the dots and the objects

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 40 min.

AIM:
Critical thinking, problem solving skills, inquisitive mind-set, artistic sense, communication and observation skills.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
The Dot , story by Peter H. Reynolds, natural objects, white paper, painting.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

used to create the dots. Try to guide the students in making a correlation between them. Also, study the margins of the dots and try to connect them to the materials of the objects. Together with the children investigate all other ways the objects in front of them could create a dot: maybe the lateral side of the pine cone, the margin of the wooden disk, the node of a stick or the side of a marble. Discuss about how the 3D shape of some of the objects can trick us into thinking that we could not use them to create dots (like the pine cone, for example).

Look back!

As expected, in the beginning, the students indicated that only the round objects were suited for creating dots and selected only the wooden disks, the marbles, the round flowers and the acorn cap. However, after analysing and testing the objects, they decided that all objects could be used to create dots if they were using different sides of these objects. In order for the students to figure this out, the teacher needs to give plenty of time for investigation, exploration and testing. The teacher should observe the children and then guide them with questions. The teacher should avoid giving the answers beforehand.

Follow up!

- Talk next about what kind of art the children can create with dots (maybe some mandalas, or dot paintings).
- Explore the concept of concentric circles and the art of Kandinsky.
- This lesson can be an introduction to pointillism for kids.
- Watch *The Dot by Peter H. Reynolds* on YouTube: https://www.youtube.com/watch?v=t5mGeR4AQdM

True colours

Get ready

Early March morning! Look at the forest: what colours can you see? A lot of brown, some dark grey or black. Everything looks kind of dull and monotonous. This is the way we started this lesson. If I got your attention, please mind that I prepared beforehand some white paper in plastic sheets. Thus, later, the colours can be better observed.

Go!

We divide the class into small groups and ask them to look for as many things of different colours that they can find in the forest. 10 minutes should be enough for them to come with objects of different colours. These are some of the things that our found: orange coral lichens, green moss, white bark, grey lichens, see-through ice, white rocks, brown pine cones and leaves, black tree bark, green fir tree branch, orange and brown acorns etc. The children place the found natural materials on the white sheet of paper and thus the colours stand out on the white background. The plastic sheet helps if some to the objects are wet (ice, tree bark).

Each group presents the colours that they could find. Our class were really amazed at the

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 40 min.

AIM:
Inquisitive mind-set, observation skills, personal development: understand that it takes time and effort to discover the beauty of the world.

CLASS ORGANIZATION:
Whole class, groups.

SUPPLIES:
"The Dot" story by Peter H. Reynolds, natural objects, white paper, painting.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

diversity of colours that they could discover on such a short walk!

Take this opportunity to talk about how some people may seem dull and uninteresting at first sight, but if you know them closer, you might find that they have a very colourful personality and there are plenty of things to discover about them.

Look back!

Ask the children to summarize what we did during the lesson: we discovered that the forest is much more colourful than it appears at a first look. Also ask them if they discovered that a child or an adult is very interesting after spending more time with him/ her. Conclude together that we need to invest time and energy in discovering how interesting people or things care really be.

Follow up!

- This activity was suggested to teachers participating in the LeAF (Learning About Forests) international program. Look for this program that is being developed in other 28 countries around the world and involve your class in this world-wide endeavor to help the young generation know an love the forest.
- You could do this activity in the summer when the forest looks really green.

Composing a nature symphony

Get ready!

Nowadays we are used to live in very noisy environments: urban areas, streets, school, cars etc. We are constantly distracted by all sorts of noises. Most of us are not really aware of how deeply this affects our lives. When we have the opportunity to spend time in nature, we need some time to realize what silence really is. We can hardly detect natural sounds, and we have trouble identifying what and who are producing these natural sounds.

Ask the children to sit in circle and discuss with them what silence is, and what natural sounds are. Invite pupils to define how we discriminate them from artificial sounds and noise. Make a list of all possible natural sounds that can be heard in your outdoor environment. "When in school or at home can we hear any natural sounds?" If yes, "which ones? Are there any differences between natural sounds and artificial ones? Try to make a list."

Go!

Divide the class in groups of four or five children and ask them to take a brief stroll in the woods while taking notes of the sounds they can hear. Then, ask them to see if they can produce some sounds using natural elements such as: sticks, rocks, dry leaves, tree branches, water etc. Each group will then, create a symphony using both the

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 60 min.

AIM:
Make children aware of natural sounds and their beauty; helping them discriminate between natural and artificial sounds, encourage creativity.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Any natural elements: wooden sticks, pinecones, acorn, nuts, rocks, dirt, dry leaves, water etc.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

natural sounds that are present in the natural environment as background music. These natural sounds could serve as background music: wind blowing, wood cracking, brook babbling, water dripping, leaves rustle, bird tweeting, insect buzzing, cricket or cicada songs etc. To these background sounds, children will add whatever natural sounds and rhythm they can produce. You can establish how long the symphony should be (max 1 and a half minute should be long enough for each group). Stress the fact that pupils should be creative and not imitate well-known commercial music or songs. Leave at least fifteen to twenty minutes to pupils' creativity, and then ask each group to share and present their natural symphony. As a follow up, ask children "what they learned from this activity, were they able to reproduce the symphony exactly the way they had prepared it?, Did they try to reproduce a tune, a rhythm or a melody that they were familiar with, or did they look for something totally new?"

Look back!

Teacher can decide to record each groups' symphonies and see what effects they create when they are played indoor.

Follow up!

- Use the children's ideas to made a set of percussion instruments that can be used in class to practice rhythm exercises.

Sounds of spring

Get ready

Let the children know that they are going on a special trail and that they will need phones, cameras or tablets for recording sounds and sights. Organize this activity on an early spring morning.

Go!

Meet the children and make a circle. Ask them to keep quiet for some moments, close their eyes and listen attentively. "What can you hear? Which sounds are high and which are low? Are the sounds that we hear loud or quiet? Which sounds are more frequent and which are less? Which direction do they come from: above / in front/ behind us? Or maybe from our left or right? The sounds are produced near us or they travel a distance to reach our ears? Which sounds that we hear are natural and which ones man made?"

Now let them know that the outcome of this activity should be a video of the sounds of spring that we can record during the trail. In addition to sounds, the children can take photos of signs of spring to be also used for the video.

Our students got totally immersed in this activity. The usual happy chattering was

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: about 2h.

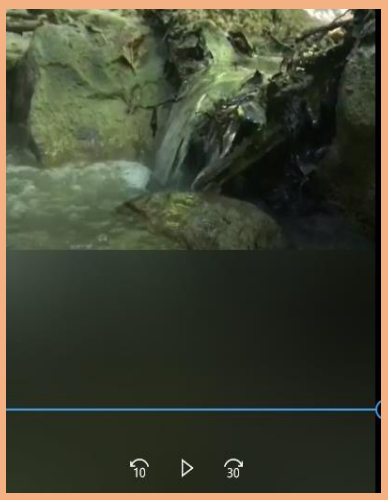
AIM:
Develop sound perception and associate sounds with seasons; develop digital skills by making a video-clip.

CLASS ORGANIZATION:
Whole-class and individual.

SUPPLIES:
Phones, cameras or tablets to record pictures and sounds.

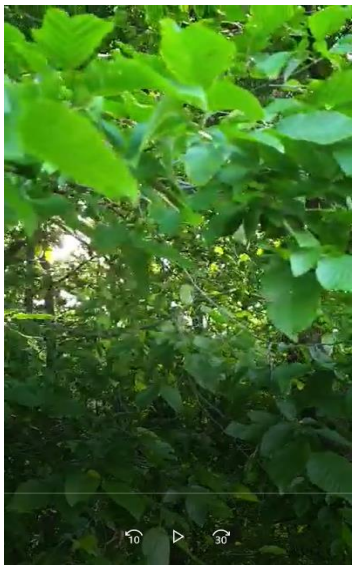
OUTDOOR/INDOOR:

TEACHER/CHILD LED:



The photos used for this lesson are print screens of the video-clip.

replaced by walking in silence, paying attention to sights and sounds and frequent stops for recordings. The wind blowing the young leaves, some crickets in the grass, a dog, a cat, a mooing calf, a see-saw, a cuckoo bird, tits, black brids, the water of a fresh spring - all these and many more made it to our video. The teacher along with volunteering students made the video using an app called "You Cut" and overlapped the recorded sounds on Eugen Doga's - "Waltz of Roses". You can also use other spring related classical musical pieces like: Chopin "Spring Waltz" or Grieg "To Spring"– from Lyric Pieces, Book III.

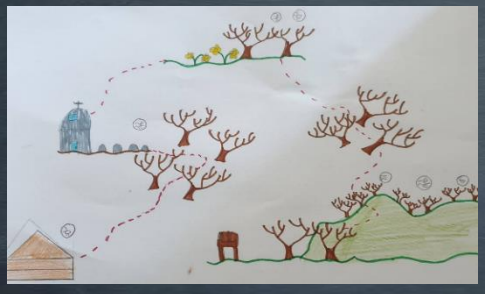
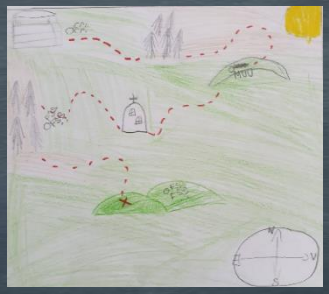
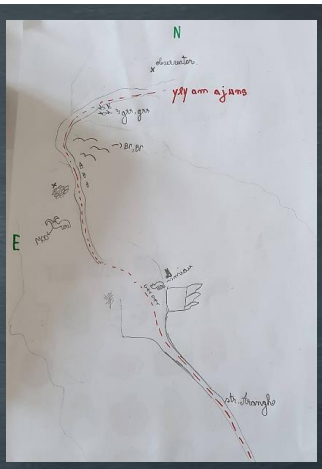


Look back!

In the classroom, project the video on the whiteboard and let the students enjoy it! Talk about the experience: "What are the sounds that they associate with spring? How would the sounds change with the seasons or with the hours of the day? What did they enjoy the most during the experience?"

Follow up!

- Ask the children to draw a sound map of the trail:

The duration of musical sounds

CURRICULAR LINKS:

AGE GROUP: 8+

TIME: 60 min.

AIM:
Understanding the duration of musical notes; formation of 2/4 musical measure with different beats of musical notes.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Wooden plank with drawn musical score, marker, sticks, stones, wooden discs

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Get ready

Prepare the materials as follows: on the wooden discs draw the symbols/the type on one side and write on the other side the value/the duration/the beats for them, on the flat stones draw durations and breaks of the musical sounds (as many and different) to form the measure of two beats in different variants, and on the wooden plank/board draw the musical score (𝄞). The stones and disks will be placed directly on the musical score, and the beats will be delimited with the help of sticks (instead of the measuring bar).

Go!

Start from simple notions about fractions (whole, half, fourth, eighth) and associate each fraction with the symbol on the wooden discs that represents the duration of a musical sound. Raise the half symbol and move your arm up and down to understand its duration by beating the rhythm. Do this for each symbol in the same way (whole note, quarter, eighth).

To understand the duration of two beats, place on the musical score symbols of different durations (e.g.: fourth plus two eighths; four

eighths; one half; one fourth plus one eighth plus eighth pause, etc.). When a two-beat measure has been competed, a stick is placed on the musical score in a vertical position for delimitation. Continue with other options until the musical score is finished. On this musical score, students can now perform the collective or individual rhythmic solfege, by beating the durations with their arms, up and down.

Look back!

Students become extremely involved through this hands-on activity, by directly manipulating the symbols. They can easily find the symbols of each duration and manage to form the beat of two quarters in different ways, by trial and error. Understanding the duration of each symbol, they can easily perform a rhythmic solfeggio.

Follow up!

- You can transfer knowledge to mathematics, the chapter on fractions.
- After learning the height of sounds, symbols are placed on the appropriate line of the stave/musical score and then you can do melodic solfeggios.
- Using a metal disc (pot lid), children can beat the rhythm.

Fall symphony

Get ready

Find 3-4 vinyl records that are already scratched and cannot be used. Print out a circle with the name of the lesson. You can even add the name of the class and other information you find necessary. Place/ Glue this circle in the middle of the record and poke a whole in the middle.

Go!

Gather the learners in a circle and show them the vinyl records. Ask them to observe them closely (even eye level) and ask them what they are. "Do you know what these discs are used for? How do they work?" Tell them about how you listened to such records in your childhood/ youth. Inform them about the first inventions (the phonautograph and gramophone) and later the record player. Explain the function of the small grooves to produce music when the needle or the stylus runs along and how the information is passed to the electromagnetic head and finally amplified. Talk about those records that influenced your childhood and how the fashion of collecting them has lately revived.

You can find relevant information about the history of vinyl records here:

CURRICULAR LINKS:

AGE GROUP: 9+

TIME: 45 - 50 min.

AIM:
To acquire knowledge about the history of vinyl records; to understand how a record player functions; to make connections between art and music.

CLASS ORGANIZATION:
Small groups

SUPPLIES:
Vinyl records, paper, printer

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

https://independentplastic.com/the-history-of-vinyl-records/

Now, the objective of this lesson is to recreate a record with fall motifs. Therefore, ask the students to take a 10 minute walk in the forest and gather fall natural elements, then display them on the record as nicely as possible. Form three groups: the phonautograph , gramophone and the record player group. This way, they might remember these names. It is a good idea to agree on a search area with clear limits. This can include forest, meadow, vegetable garden and other types of environment. Once the students start decorating the records, monitor their group communication.

Look back!

Ask each group to present its record and describe the music that it would play (soft, sunny, fast/slow, high/low pitch, imitating nature like rain or birds, piano to forte).

Follow up!

- We used the same idea in another activity where we looked for things that we could eat in the forest. The display on the record was called *Autumn Flagrance Symphony.*

The music behind the science

Get ready

This activity is about creating your own rainbow water xylophone using a few simple materials. Making a water glass xylophone incorporates the principles of science, mathematics, design, music and engineering, making it a suitable activity for every age group and class.

Go!

Arrange the glasses in a straight line. In the first glass measure with the children 10 spoons of water, then 15 in the second glass, 20 in the third glass and so on. Raise the amount of water with 5 spoonful for each glass. Next, food coloring is added to paint the water in the colors of the rainbow: red, orange, yellow, green, blue and purple. Thus we make a glass xylophone with rainbow water!

Use a stick to touch the glasses and watch the children's reactions!

Give the children different objects to touch the glasses - wooden, metal and plastic spoons can be used as hammers, then ask them questions about the sounds they produce "Do the glasses have the same sounds? Why do

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 30 min.

AIM:
Experiment with sounds using natural materials; find a scientific relationship between the volume of liquid and the sound produced by the glass.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Identical glasses, water, measuring cup, food colouring, plastic / wooden spoon

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

you think they are different? What influences the way the sounds are made?" They will quickly notice that the glass containing the highest amount of water produces the lowest sound, while the glass with the lowest water produces the highest sound. Ask them to think about what it would be like and come up with a hypothesis as the experiment continues.

When an object hits the glass, the water in the glass vibrates. The height of the sound depends on the vibration speed. Because the glass with the highest amount of water (and the smallest amount of air) slows down the vibrations the most, it produces a lower sound height. The glass with the least amount of water in it (and the largest amount of air) produces the highest sound, as sound waves can move rapidly through the air up to our ears.

To raise more questions, children can hit the glasses with the same object in different places and in different positions - in, on, above, below, near, in front, behind, up, down, left, right, horizontal, vertical, oblique, etc.

Look back!

Let the children draw the conclusions and make the connection to the formation of sounds, to the vibrations around us. and ask the children how they felt, which was the most difficult thing for them during the activity, what they liked, what they did not like.

Follow up!

- With older learners use this as a Maths practical activity for measuring volumes: students can determine the total volume of a glass and exercise the notions of whole, half, quarter.
- Combine the water from different glasses to see what new colors are being formed.
- Place celery or white flowers in the coloured water to observe the water circulation in plants.

Water molecules game

Get ready

A simple and funny way to explore the states of water: liquid, vapors, ice. Through this music and movement game students better understand the connection between the properties of water and temperature.

Reinforce knowledge about the properties of water:

- Water is a transparent liquid, flavorless, odorless, almost colorless with a slight hint of blue.
- Water covers around 75% of the Earth surface and next to the air is the most precious substance for the living things. Water is the only substance found naturally in all three states of matter: liquid, gas (vapors), solid (ice).
- All the substances are made of molecules and molecules are made of atoms bond together in different combinations. Water molecule has three atoms: one atom of oxygen and two atoms of hydrogen.
- The molecules' behavior depends on the temperature of the water/substance.

As water is essential for all the living forms, it is important to know as much as possible about water properties.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 20 min.

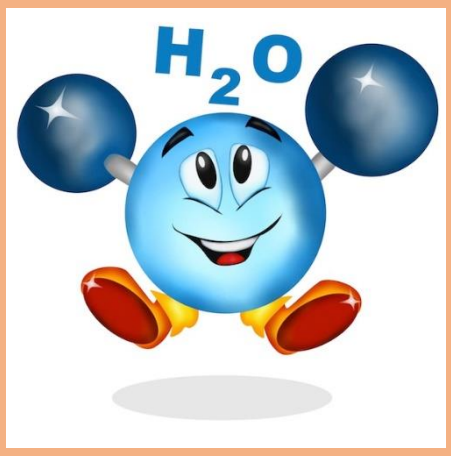
AIM:
Respect rules of the game; recognize and be able to describe the properties of water; understand how water behaves in its states of matter: solid, liquid and gas.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Colored string or a piece of chalk

OUTDOOR/INDOOR:

TEACHER/CHILD LED:



Go!

Establish the limits of a space outdoor or in the classroom where children, transformed into "water molecules", can move freely. You may use chalk, sticky tape, a colored string or even a carpet. In this space, children, like liquid water molecules, perform an easy run, spin, collide. Water is in the "pot" and it will not leave the space that represents the pot. Also, "the collisions" must be light; hard clashes are not allowed. Through collisions water molecules change only their state of movement, the direction, they don't suffer any damages/ deformations. If a "molecule" forgets this rule "it" will be invited to leave the pot that turn of the game…

As the temperature of the water rises, the molecules begin to move faster and faster. The liquid water turns into vapors and vapors start to leave the pot. Children can go out from the delimited space one by one in random directions.

When the water temperature drops, the freedom of movement of molecules decreases. At 0ºC liquid water starts to freeze; water molecules can no longer move. The water is now solid/ice.

The children who are not water molecules stay around the delimited area, sing, clap their hands, setting the pace of the molecules' movement.

We are water molecules. Water has no color, smell or taste When it's clean and fresh. Water molecules run, rotate And collide all the time.	Noi suntem moleculele de apă, de apă Apa nu are gust, miros și nici culoare, Apa n-are gust, miros, dar e bună tare. Noi suntem moleculele de apă, de apă, Toată ziua ne-nvârtim, alergăm şi ne ciocnim. Toată ziua ne-nvârtim, alergăm şi ne ciocnim.
When water boils in the pot Water molecules run faster Faster they collide and rotate Soon they'll evaporate.	Apa fierbe in ibric Noi alergăm mai tare. Ne-nvârtim, ne ciocnim, și-n vapori ne risipim. Ne rotim, ne ciocnim și-n vapori ne risipim.
When water is in the fridge. It is so cold inside. Water molecules can't run nor rotate Trapped in ice they can't escape.	Apa e in frigider Vai, ce răcoare! Nu putem să alergăm și-n curând o să-ngheţăm. Nu putem să ne mişcăm și acum îngheţăm.

Look back!

Make sure that all students were water molecules in turn. One of the goals of the activity is to follow the rules of the game. Establish together the rules that you consider necessary for the safe development as well as the consequences of their non-observance. The song can be invented by children. Any kids' song or nursery rhyme is good as long as it fits the lyrics. For more fun you can encourage children to use different objects as musical instruments.

More challenge? Split the class in groups of three. Each group is a water molecule.

Remember? One atom of oxygen and two atoms of hydrogen. They have to move together. Regardless of the state of aggregation in which the water is found, the molecules do not break down!

Follow up!

- Connect this activity with experiments with water or related to water cycle processes: evaporation, condensation, precipitation and collection.
- There are many interesting water cycle songs and video files appropriate for young students on YouTube. Here are some ideas:
  - https://www.youtube.com/watch?v=TWb4KlM2vts
  - https://www.usgs.gov/special-topic/water-science-school/science/water-cycle-schools?qt-science_center_objects=0#qt-science_center_objects
  - https://www.twinkl.ro/resources/romania-teaching-resources

Tree of life

Get ready

Each student is instructed in advance to bring at school reusable and recycled paper materials. Students watch a video file and find out how to make recycled paper. The first steps are the selection of the materials suitable for this process and the preparation of the other materials and tools: water, glue, dried herbs and petals, silk threads, other textile threads, sieve. Following the instructions, students make a large rectangular sieve using a photo frame and a net, also recycled from a flower bouquet.

Go!

The next step is the actual production of recycled paper. In our case, the first sheet of paper had white, pink and light green silk threads inserted into it and the second sheet of paper had dried rose petals and lavender. The recycled paper had a delicate fragrance.

During the next two lessons, the students, under the guidance of the teacher, make a panel in the form of a circle, representing the circle of materials used - from simple wooden sticks to handmade paper. The panel is lined with bark of logs. Small plants are planted in hidden pots at its base.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 3x40 min.

AIM:
Investigate different types of materials and recycled materials; use of reusable and recycled materials in crafting useful objects; development of "green" habits.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Various recycled and reusable materials: paper - recycled and handmade, tubes from paper towels, toilet paper tubes, wallpaper, cork, small pieces of wood, egg cartons, newspapers/ magazines, old worksheets.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

At the bottom of the board, the children can add a sign: "Think green! Reuse, Recycle!"
In the last part of the activities, remember to reinforce some "green rules or green habits".

Encourage students to talk about their experiences, to discuss the activities carried out and share their ideas. Discover together directions of development of this type of activities.

Look back!

Once the panel is ready, the students can present it to the other classes and talk about what they learned during these activities. The *Tree of Life* project can still be admired in our school lobby and reminds us to "think green".

Follow up!

- Think how you can use wood and wood products sustainably. Make a plan and follow it with your class.

Cord trees

Get ready

Children love to read and listen to stories about trees. As a proper introduction to this activity, choose a nice story which has a tree as protagonist. Here are some reading suggestions: Shel Silverstein's book*, The giving tree*; Joanna Cooke, *The Sequoia lives on;* Bernardette Porquie and Cecile Gambini, *Strange trees: and the Stories behind them;* Jeanette Winte, *Wangari's Trees of Peace: A True Story from Africa.* After reading the book, you might consider showing different art reproductions of trees to your class. Then, proceed by asking children to list a series of material that could be suitable to reproduce a tree. While you can sit outside for the introductory part of this activity, it is better to carry on the actual production of the cord tree in the classroom or in a lab. To create a rope tree carefully organize the timing of the different phases. Initially your pupils work individually, then they help each other's in the realization of the artefact.

Go!

1° STEP: each child paints the wooden tablet or thick cardboard which is the base of the cord tree;

2° STEP: in pairs, children help each other by sticking the central part of the rope that represents the trunk of the tree. This part has to be placed in the centre of the tablet. Children need to press the rope for some time in order for the glue to dry up.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 1° step: 30 minutes; 2° step: 45 minutes; 3° step: 45 minutes

AIM:
Fine motor skills; observation, reflection, problem solving.

CLASS ORGANIZATION:
Single and in pair.

SUPPLIES:
Wooden tablet or thick cardboard, paint, rope, vinyl glue, cotton swab/Q-tips, fine brushes, pebbles, dried leaves and flowers, scissors, spray glue.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Unravel and stick the inferior part of the rope, to create the roots. Make sure to spread each cord thread. Finally, unravel and stick the upper part of the cord, this single thread will constitute the tree branches. While working in pairs, children should take turns helping each other throughout the different steps.

3° STEP: Once the cord tree is firmly glued on its base, children can proceed by sticking on its branches small leaves, and colourful flowers. Stick little pebbles among the cord tree roots. We suggest spraying some spray glue adhesive, to make the artefact resistant.

Look back!

When the work is over, each pupil can proudly show the result to his or her friends. A small exhibition can be organize including the names of the books that have been read and a list of interesting children's observations about the importance of the trees.

Follow up!

- Invite children to invent stories about trees or share other books about trees that they have read. Maybe some pupils have other ideas about how to create trees using recycled materials.
- Mauro Evangelista: Saremo Alberi. Artebambini
  https://www.youtube.com/watch?v=1TZCP6OqRlE
  https://www.youtube.com/watch?v=jK1NndEf6f0

Nature into the classroom

Get ready

Autumn is the season of colourful leaves, falling fruits, birds flying south. Students describe what bounties of nature they can use for classroom activities. They collect leaves, cones, chestnuts, sticks, wood slices, acorns and more.

Go!

Clarify the concept of "ecology" - ecology is the study of organisms, the environment and how the organisms interact with each other and their environment.

The students are divided into three groups. The first group is given the task to make a decoration with appliqués of birds and animals on wood slices. The second group is given the task to make a mandala from nature's bounties. The third group is given the task to make a deer from twigs.

Look back!

Through this class, students create: positive attitude towards nature, ability to work in a team and express their feelings, accuracy and precision in performing the task, Interest in

CURRICULAR LINKS:

AGE GROUP: 9+

TIME: 40 min.

AIM:
Learn about Nature and living things**,** Create interest in nature and its preservation for future generations, use natural materials in creating art.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Leaves, cones, chestnuts, sticks, stumps and acorns.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

nature and its preservation for future generations.

They can also recall tales and stories in which these birds and animals are the main characters.

Follow up!

- Students hold up a workshop and help the little ones to make different birds and animals from natural materials.
- Students may find out a number and kinds of geometric figures and connect the activities to Maths or create and solve problems.

Our mandalas

Get ready

Yesterday, we went on a school trip to the forest. It was so nice!!! Kids picked up natural things (chestnuts, nuts, almonds, oranges, flowers, leaves, sticks) to do this activity in class.

Go!

First, let's see a video about important works of art of different artists around the world. Let's make the kids think about the importance of creativity.

Encourage your students to create his / her own artwork, in this case "mandalas" using the elements they collected in their excursion. They can't imagine what they are able to make!

Look back!

Kids observe their classmates' artworks and every child explains his or her own artwork and the elements, shapes and colours used. It will be funny!

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 45 min.

AIM:
Know the shapes and symmetry, know different famous artworks of important artists

CLASS ORGANIZATION:
Individual

SUPPLIES:
Almonds, chestnuts, nuts, oranges, leaves, rocks, stones, flowers.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Follow up!

- We can see a video about "The top 10 painters of all times": https://www.youtube.com/watch?v=t4ftkrHtDd4
- We can give the kids a printed artwork of a famous artist and they can fill in with natural elements, or they can create similar artwork with natural elements.

Decorative stones

Get ready

On one of your hiking days, ask the students to collect stones as flat as possible and then decorate them to be used as decorations or paperweights.

Go!

It's time for decorating the stones! Encourage the children to touch and observe their stones attentively and think what these could become. Then provide them with quick dry paint of different colours and give them enough time to paint their rocks. Let the stones dry. Distribute wool of different colours and show the students how to wrap the stones with the wool or glue it to get different critters. They could design people, monsters, pets, other animals, plants or just make abstract designs.

Look back!

With this activity, we will enjoy nature and make decorative pieces with natural elements. Then we can sit in a circle, and encourage each student to show their stones and make a story, a role-play or even a song that would introduce the new friend to the class. The

CURRICULAR LI NKS:

AGE GROUP: 9+

TIME: 90 min.

AIM:
Know the nature around us.

CLASS ORGANIZATION:
Small groups or individual

SUPPLIES:
Stones, wool and glue, googly eyes

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

children should also say how they are going to use the stones, if they are going to be a decoration or have a useful function.

Students will take the stones home and place them in a special part of the house. They will take a picture of his/her favourite corner of the house with the stone and send the picture to us. We will collect all the pictures and make a digital book in "book creator" that will be shown in the class and shared with the families.

Follow up!

- Ask each child to paint his/ her stone in his/her own style! Then use these uniquely decorated stones to talk about how different and special each one of us is. Put all the stones together to show that diversity is beautiful.

A tasty Italian flag

Get ready

Children love flags and they will certainly love to participate in this activity. Start asking your children to share a list of flags that they are familiar with. As an introduction, you might consider also to run a quick game, during which you show picture of different national flags and check who is able to recognize them, associating them to the correct nation. Offer a brief explanation about the importance of flags and the meaning of flag as a symbol. Introduce the Italian flag with its three colours stressing the historical meaning of each colour: green like the Italian garden and rich and varied vegetation, white like the perennial white snowy Alps, red like the blood shed by the soldiers who fought to unite the Italian nation.

Invite the children to make a connection between the colours of the Italian flag and the natural colour in it. Ask the children to suggest other flags which have colours that reminds us other natural colours.

Go!

Distribute a green, a white and a red vegetable or fruit to each single child and invite them to create the Italian flag with what you gave them. When each child will have created their own Italian flag, reordering the three vegetable pieces according to

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 90 min.

AIM:
Communication skills, social skill, arts and crafts skills.

CLASS ORGANIZATION:
Groups, whole class and individual work.

SUPPLIES:
Plenty of green white and red vegetables and fruits. Choose for green: lettuce, broccoli, cucumber peel, celery, spinach etc.; white as in fennels, mushrooms, onions etc., red as in pepper, tomatoes, cherries, apple peel, strawberries etc. Cardboard sheet A4 for each child. Some paper plates, some plastic knives.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

the colours of the Italian flag, insist that the flag has to have a rectangular shape and needs to be bigger. Let children be free to organize themselves in groups and create a bigger flag.

Only when the children start to share their vegetable pieces, you can encourage them to use the rest of the vegetable pieces and fruit peels and pieces that you have prepared.

At the end of the activity, make sure you inform the children that the fruit and vegetables will not be thrown away, but all the children will be able to taste it, and the left over will be anyway distributed and eat it.

Look back!

This is a very interesting activity to introduce the topic of flags and how to create shapes cutting and putting things together. Introduce the European flag explain its meaning and ask children to propose how the European flag could be recreated with natural material.

Follow up!

- Observe with the children the herald of your town, the logo or your school and recreate it with natural materials.
- Create a logo for your Erasmus+ program using only natural material.

Making trinkets

Get ready!

On an outing to nature, students will investigate the surroundings in search of flowers, leaves, branches or even fruits of all possible colors. Any small sized and light natural element will be worth it for later use.

Go!

We will use a comfortable area at medium height to place all the elements that have been found. The next step will be to classify them by type and by colors. It is a good opportunity to learn what are the primary and secondary colors and the resulting mixtures between them.

Next, we let them know that we will make trinkets (bracelets, necklaces and belts). For the bracelets and necklaces, we should follow a pattern. "What is a pattern? What patterns can you make with the gathered materials?"

With the help of a thread/ wool and needle, or just gluing them on the sticky tape, we will create the trinkets. They can be down-sized and used for dolls if there are not enough materials for a life-sized one. The children choose the shapes and number of elements and they could also consider colour gradient and combination of colours.

CURRICULAR LI NKS:

AGE GROUP: 6+

TIME: 90 min.

AIM:
Development of manual skills, knowledge of the classification of colors and their combinations.

CLASS ORGANIZATION:
Whole group

SUPPLIES:
Thread, needle, leaves, flowers, fruits and branches.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

The last step will be the sharing of the work. Even a fashion parade where each student can show all his/her creations would be a lot of fun! You could put the things together in an exhibition or an online presentation for the families.

Follow up!

- Another option is to make clothes with natural elements.

Magical wool fairies

Get ready

The most important thing when making Magic Wool Fairies, is using materials that are natural, sustainable and most of all safe so, by making these dolls, we also build a better world! *Some of the benefits of making* Magical Wool Fairies *are: they develop children's hand-eye coordination and gross and fine motor skills; team work can highly contribute to emotional development and sense of achievement. This lesson can be done both inside and outside. It can be also done individually, in pairs or in groups.*

Go!

The tool in the picture is a felting needle. Take a small amount of wool and roll it into a ball. Work on a foam surface to avoid any injuries! Increase the diameter of the ball slowly by wrapping additional strips of wool tightly around the ball. The ball should be made as firm as possible. Continue until the ball is about 1,20 cm in diameter. Take a 15,20 cm long piece of roving and wrap a small piece of roving around the ball . Secure in place with another piece of wool (poking it with your needle) to form the neck. You can also use

CURRICULAR LINKS:

AGE GROUP: 9+

TIME: 30 – 45 min.

AIM:
Develop creativity, problem solving skills and collaboration by playing with loose parts

CLASS ORGANIZATION:
Whole class/ groups/ individual

SUPPLIES:
Merino wool in different colours (white, skin colour, hair colour, dress colour), a sponge, felting needle, pipe cleaners.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

the needle to smooth the head. By repeatedly poking the wool with the needle it makes it stronger and smoother. Try to keep the front (the angel face) smooth. Take another small piece of wool for the body. Continue wrapping any roving left over around the body. Add the pipe cleaners to make the arms, covering the pipe cleaner in flesh tone roving and making a hand. Use a long thin piece of wool in white to make the shirt securing it with another piece of roving and make sure to poke it with your needle to hold it fast. Fold a piece of brown roving in half that is twice as long as you wish the angel's hair to be and place on the angel's head. Needle felt the back to hold in place and cover the back of the head. Do not needle felt the front. It is better to leave it fluffy. You should only needle felt a small portion to secure the hair colored roving in the front of the head.Take a 12,5 cm piece of white wool and lay it flat. Place a small amount of wool, a bit shorter than the white, on the front and back of the white roving. Use a thin piece of white roving to gather the large piece in the middle. Needle felt to secure. These are the angel's wings. Attach the wings in place by needle felting to the back under the hair.

Look back!

At the end, let each child present a short role-play with his or her fairy!

Follow up!

- You can paint wool and have fun experimenting with new designs!

Symmetry in art

Get ready

Ask the children to form pairs. Then give them the task of collecting at least two natural elements of as many different colours as possible from the surrounding area in 10 min. The natural elements can be: flowers of different sizes and colours, rocks, snail shells, leaves, sticks and they should not be bigger than a palm size. Every pair will be given a bag to collect their findings.

In a different recipient have different types of shapes that can be replicated symmetrically, for example half of symmetrical letters, stars, hearts, rectangles, squares, circles, ovals, and diamonds.

Go!

Once the 10 minute mark has been reached, ask the children to come back and pick two cards with shapes. Children can play with mirrors and the chosen shapes to understand the concept of symmetry.

Then they can form the symmetrical image of a natural design. Let them check with the mirror to see if they have got real symmetry. Every shape and pattern will be different since the objects used are different. The task raises a series of problems: "Are the things the same

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 40 min.

AIM:
Creative thinking; problem solving skills; artistic sense; teamwork; communication; observation skills.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Bag for each team, cards with shapes, mirrors.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

size? What is the position: does it face left or right, is it straight or upside-down? If I have a pattern of yellow, yellow, blue flowers what does this look like in symmetry?" Pay special attention to details! Finally, explain that the initial shapes are halves of the whole and ask the students to define symmetry.

Look back!

Talk about colour combinations and contrasts, texture and size and if they think they make a difference. Ask them to give examples of symmetries in real life: human body, nature, buildings and clothes. Invite students to think how a symmetrical world gives us a sense of order and balance.

Follow up!

- Talk about lines of symmetry. Investigate how many lines of symmetry can one shape or object have.
- Talk about symmetry in words (palindrome) and invite students to give few examples.
- Watch *Symmetry Song* on YouTube: https://www.youtube.com/watch?v=PBW1dyOwUbA

The power of observation

Get ready

Careful observation can change the way we see the world. In order to help students understand that, do this activity! You will need an A4 paper for each learner. Place the paper in Landscape layout and fold it in 3 equal parts (like a leaflet). Write small numbers (1,2,3) in the lower area of each of the 3 parts. Attach the paper to a clipboard with number 1 in front.

Prepare in a basket parts of an oak tree that you can find on the ground (a leaf, an acorn, part of a branch).

Go!

Sit in the circle and introduce the contents of the basket. Let the children name these things and ask them what they think the lesson is about. Yes, they are going to draw the oak tree!

Ask them to take a clipboard, close their eyes, remember what an oak tree looks like and draw it on part number 1. Give them around five minutes to draw.

Once they finished the first drawing, ask them to look for an oak tree nearby. Once they found it, make a circle around it, so that every child can have a good look at it. Guide the

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 45 min.

AIM:
To train the eye to observe significant details, to describe details of what they see.

CLASS ORGANIZATION:
Whole class or groups.

SUPPLIES:
Clipboard, drawing paper, pencils and coloring pencils.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

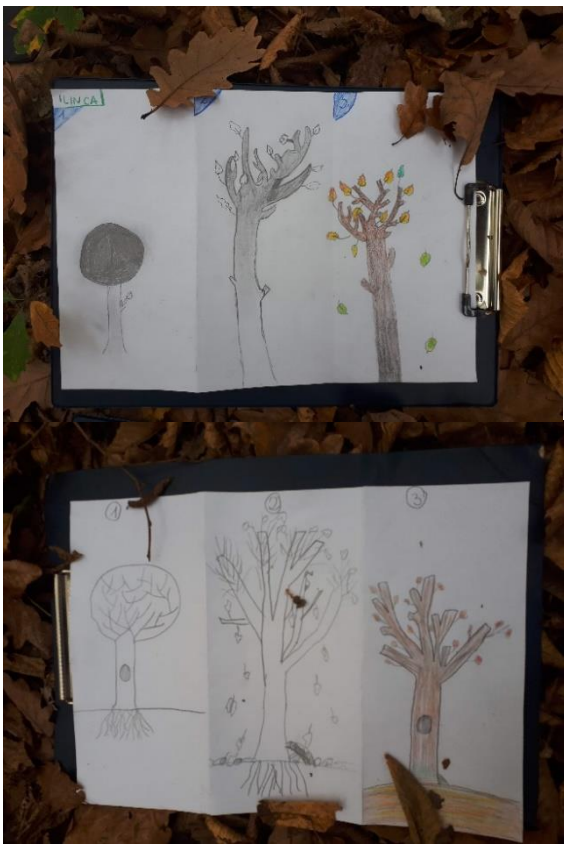
observation from root to canopy. Use a series of open questions and offer possible answers only if necessary: "Observe the roots. What can tell about them? (most of it is under the ground, the parts that are visible are thick and twisted etc.) Go back a few steps and look at the trunk! What do you see? (the trunk is never perfectly straight and it can have cuts and stubs). Get closer to the trunk and touch its bark! What do you feel? What can you say about the branches? (the branches go up/ sideways/ down; there are a few thicker branches and all the smaller ones start form these). Take a leaf from the ground and look at it? What does it look like? (it is simple or compound; it is lobated, with a long/ short petiole, visible veins, the lobes have round/ sharp ends.) Are there any seeds you can observe? What do the acorns look like?" Now, ask the students to take the clipboards, turn to page number 2 and draw an oak tree. Give them more time, like 7-8 minutes so that they can draw according to their observations.

It is time for the third round of observations: "What can you see around the roots of the tree? How old do you think the tree is? Look at the trunk: what is the story of this tree? (Maybe it looks like a happy tree that had enough light in its life, or it looks like a wise tree that witnessed battles, draught or floods, or it might be a survivor in spite of its signs of cuts and disease). Could you draw the tree so that we can understand its history? What small creatures or other significant details can you see? What do you think this is….? What colour are the leaves? (Usually, each leaf is a combination of colours). Compare the leaves at the bottom with the one at the top of the tree! What do leaves smell like? Do you think you can draw this smell? What can you see around and above the tree? How is the sky today?" Ask the students to make a last drawing on part 3. As you discussed about colours, offer them coloring pencils when they are about to finish the drawing. They will also need more time to draw all the details.

Ask the children to sit in a circle and unfold the paper so that they can compare the 3 drawings. The differences will be remarkable: "Do you remember how you did the first drawing? (from memory) Why do you think the second drawing is better than the first? Why the third is better than the second? What helped you make better and better drawings? Can you draw a conclusion of this lesson?" The conclusion can be repeated by all students together, to reinforce it.

Look back!

Make the connection with everyday life: "How does thorough observation help you in everyday life?" (for example at school or when you practice a sport, or in your family). Ask them to give examples and talk about a personal experience which they are comfortable to share. Finally, ask them how they felt during the lesson. (I particularly liked this lesson as the children totally immersed in drawing and observation; in perfect quietness, they became one with nature).



Follow up!

- With younger students, use only two drawings, one before and the other after observation.
- You can do this exercise indoors with a photo of an animal, a fruit, a pot plant etc.

Discovering Magritte

Get ready

In spring and autumn when the weather is sunny and clear if we look up we can easily spot a flock of birds flying across the blue sky dotted with white clouds. It is never too early to introduce your class to Magritte's surrealism! Take your class outside for a walk in the garden, invite your children to turn their noses up, and observe the beauty of the sky.

Go!

While strolling in the school garden, ask your children to observe the sky, and capture all elements they can spot: clouds, plane wakes, flying birds, insects, treetops etc. Leave plenty of time for this activity to your class.

Activity 2: back in the classroom, distribute the blue cardboard sheet, a brush and some white paint. Invite pupils to paint the clouds in the sky.

Activity 3: let your pupils choose and pick the bird template/silhouette they prefer, then they will trace it on a black cardboard using a white or yellow pencil.

Activity 4: help your children to cut out the bird silhouette, with younger children you might choose to have your children punch the

CURRICULAR LI NKS:

AGE GROUP: 4+

TIME: 90 min.

AIM:
Develop observation skills, artistic perception, fine motor skills, visual-manual coordination, sensory development, reflection skills and language competences.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Blue and white cardboard, white paint, brushes, scissors, pre-writing awl, pre-writing table, glue stick, flying birds templates, and silhouettes.

OUTDOOR/INDOOR:

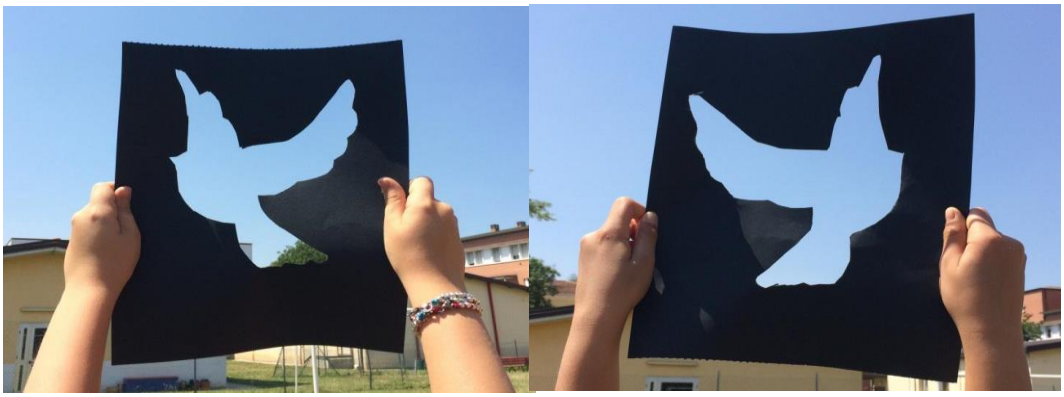
TEACHER/CHILD LED:

picture with a prewriting awl. Make sure you explain to your pupils, they should handle the external part of the cardboard with special care, so not to tear or cut the external rim.

Activity 5: Now, it's time to go out again. Invite children to lie on their back, hold their own bird stencil in front of their eyes, and look at the sky through it. What do they see?

Activity 6: Back in the classroom, distribute glue sticks, and show the children how to stick the sky with the clouds they painted behind their bird stencil.

Activity 7: while the pictures dry out, sit in a circle and start a conversation. Ask children what they think of the picture they created. "Is the bird made out of sky or is the sky that has the shape of a bird? Is it night or is it daylight? Have they ever heard of an artist named Magritte? Have they ever sees similar pictures, maybe in a book, or in a museum?" This conversation will be a nice introduction to the surrealism movement, and to the work of Magritte.



Everything we see hides another thing, we always want to see what is hidden by what we see. (René Magritte)

Look back!

When you finished the activity, show the work "L'oiseau de ciel" by Magritte. Your children will immediately recognize by looking at the artwork by Magritte, the very picture they have just created, and they will feel true artists.

You might consider showing a couple of animation film that you can find on Magritte's work on YouTube.

Through these activities you will help your class to recognize and appreciate Magritte's creations, and with your help, they might decide to explore this artistic technique even further using different silhouettes, and stencils and creating other pictures. Good luck on your work. little Magrittes!

Follow up!

- Pick one of these brief animation on Magritte's work:
  https://www.youtube.com/watch?v=VgmBNgmue7M
  https://www.youtube.com/watch?v=DB7yszOLj5U

Mud painting

Get ready

Try to find a good spot with soil on the ground as your work surface.

Put your colored mineral dust in the bowls.

Go!

We separate the kids into teams of four and every team will be given a big recycled piece of cardboard in order to draw on it. They have to decide what the drawing will be. In the beginning, each team has to draw their ideas on cardboard, using carbon. After that, each team will make a hole in the ground and will put the water from the bottles that they have been given, so they can make mud as their main material. Each team, depending on what they will decide to draw, takes a bowl with one basic color. When the teams finish their drawing, they can exchange the rest of the colors with the rest of the teams.

Look back!

After we finish with the activity, we make a circle and reflect on our experiences. Each team can now exhibit their art pieces to the whole group.

CURRICULAR LI NKS:

AGE GROUP: 7+

TIME: 30 min.

AIM:
Alternative painting; discover new materials.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
4 bowls, 1.5L of water each team, colored mineral dust, recycled cardboard carbon

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Follow up!

- Some alternative ways to do this activity, probably for older students, will be as following:
  - "we collaborate to make a drawing". In the beginning, after we have been separated in teams of four per group, we make a circle and every team has to put their cardboards on the ground, one next to the other and agree on the drawing that will be drawn as a group. In the end, every piece of cardboard from each team will be put again on the ground, one next to the other, in order to link it to the other pieces and make the whole painting.
  - Alternatively, bowls aren't necessary and children can use the hole on the ground as their "bowl" or a big stone that they may find.

Flower pigments

Get ready

Now, in the fall, students will collect leaves of trees and plants of different colours that they find in parks, gardens and forests. After a day in class, with the help of these materials, you will discover why plants change colour at this time of year.

Show them the materials they are going to use:

- Sheets of different colours.
- Wooden table.
- Drawing paper.
- Kitchen paper.
- Hammer.

Go!

Look at the colours of the leaves. Take several from the same tree or plant and sort them according to their colour. Do you want to keep those colours on a piece of paper? Place the wooden board on a table to protect it from hammer blows. If you don't want the colours to be marked on it, protect it with a few layers of absorbent paper. Place a sheet of drawing paper and one of the sheets of plants on the wood on the drawing paper. Hit with the hammer on the surface of the blade. "Can you see what colours appear on the paper? They

CURRICULAR LINKS:

AGE GROUP: 9+

TIME: 90 min.

AIM:
Know the composition of the leaves of trees and plants.

CLASS ORGANIZATION:
Smalls groups

SUPPLIES:
Sheets, wooden table, drawing paper, kitchen paper and hammer.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

are the pigments of the leaves that you extract with the help of the hammer."

Look back!

With this activity, students will discover the different colours hidden in the leaves of the trees. When they are done, we will make a circle and each group will show their work to the others, explaining what they thought of the activity.

Follow up!

- This video can help you get the activity done better. https://www.youtube.com/watch?v=Li1Smw65YD4

A different nest

Get ready

Before starting, we should learn about the types of local birds. We must print an image of the bird we will be using later for the nest. We can start now. Once we found ourselves outdoors, we can sit the students in a circle, explaining them the types of birds living in the area, what they look like, where do they nest, how they feed and other interesting info. Once we start talking about a bird, the students can provide the information and the teacher will add new and relevant data.

Then we explain them we are building a nest, different from the one we know. "Now let us focus on one of the local birds. What do we know about the nesting habits? Where does this bird build a nest? What is the nest built with? Is it round? Is it open or almost closed on the top?" The students will collect sticks, straws and any other suitable elements to build the base of our nest.

Go!

The materials we probably need for our nest are:

- One paper plate per pair;
- Paintbrush and watercolors;
- Scissors;

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 90 min.

AIM:
To learn about types of birds living in the area.

CLASS ORGANIZATION:
Pairs.

SUPPLIES:
Paper plate, drawing of a bird, watercolours, paintbrush, scissors, glue, small branches and sticks.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

- Glue;
- Straws, small branches and sticks.

Step 1: Collect straws, small branches and sticks.

Step 2: Paint with watercolors one half of the plate, cut out the bird and stick it to the plate.

Step 3: Glue the straw and sticks forming a nest.

Step 4: Optionally, we can glue some cotton over the bird as feathers or even real feathers for an authentic look.

Look back!

At the end, each pair of students will show their nest explaining to the other children which difficulties they faced to create the nest, commenting on whether they knew or not the birds in the area and if they know any other types.

Follow up!

- They can look for information on why birds migrate to other areas, how climate change affects them, and why some species are endangered.

Easter eggs

Get ready!

The activity begins with an exploration of Easter traditions and customs specific both locally and nationally. This important holiday for the entire Christian world contains a treasure of legends. The teacher, after discussing with his/her students about the customs in their own families related to the preparation of Easter eggs will introduce the legend of the first Easter egg. It is very likely that at least one of the students will mention the use of natural dyes in his family; the teacher will use this information as an input element.

Go!

The natural dyes are made from fruits and vegetables. Here are some examples:

- Red - beets and cranberry juice
- Blue - blueberries
- Green – red cabbage leaves
- Yellow - carrot leaves (cooked), turmeric

Natural dyes are obtained by boiling vegetables and fruits. The concentrated juice contains a sufficient amount of color pigment. Students are divided in four groups. Each of the groups receives six boiled eggs (one egg

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 90 min.

AIM:
Investigate natural dyes traditionally use to dye Easter Eggs; explore eco-friendly methods used to decorate these special eggs; knowledge of local and national traditions and customs specific to this holiday.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Boiled eggs, natural dyes, white vinegar, leaves for decoration, wooden spoons, egg cartons, vegetal oil, paper towels.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

per child) and bowls with natural dyes. The students from each team decide for themselves how to decorate their egg to make it beautiful and original. The vinegar fixes the color on the egg's shell. For decoration they use parsley leaves, edible flowers, grass or seeds. The shell of the colored eggs will shine if you gently wipe the colored egg with a tissue moistened in vegetable oil.

Look back!

Natural dyes do not have such strong and shiny colors and the time required for coloring is also longer than in the case of food dyes. Yet, it is a beautiful tradition and gives everybody the chance to dye and decorate Easter eggs in a special way. The students show interest in producing their own colors, thus developing the project in new directions: the concentration of juice, the boiling time of vegetables / fruits, methods to better fixe the decorative elements on the egg etc.

Follow up!

- Students can make an exhibition presenting the custom of painting eggs.
- Students can design an electronic book https://read.bookcreator.com/M9YvgEu9X3XYP4h8rsPEWHMO3SF3/rFmqArK3SuKKxRbwOPQzcQ?fbclid=IwAR1DGFCt5EG2AJ6BbOz4Fr5y0IC1RnqtDB3IzBzQXiySmXNJauiVrpou4vg

How do you play?

Get ready

Let's play a simple children's game: noughts and crosses. It is quite simple and fun. Best part consists in using sticks and stones as main game elements. We can either prepare it outside or bring the materials inside the classroom to prepare the game. As we have them ready, children must be able to explain the game to the others, as well as which elements they have used.

The materials we need are:

- 1 piece of cardboard per each pair;
- 7 stones and 7 sticks same size more or less;
- Watercolours;
- Paint brushes;
- A pair of scissors;
- A ruler;
- A pencil.

Go!

We have several options, we can either go outside to get the elements or the children can get them from home:

Step 1: Draw a square on the cardboard and then divide it into nine equal parts using the ruler.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 90 min.

AIM:
Learning the abilities required to create a game. Learning how to explain how it works properly.

CLASS ORGANIZATION:
In pairs

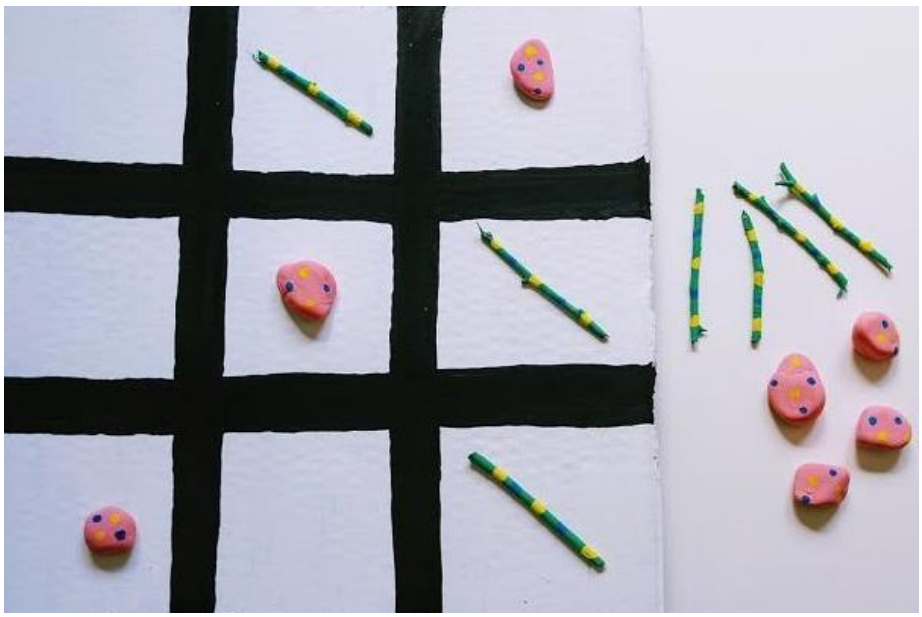
SUPPLIES:
A piece of cardboard, stones, sticks, watercolours, paintbrush, scissors, ruler and pencil.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Step 2: Paint the cardboard: the background in white and the lines in black. Let it dry. This is our game board.

Step 3: Choose a colour and paint the stones. Do the same with the sticks. These are our game pieces.



Look back!

Once the game pieces are painted we let them dry for a few minutes. Meanwhile, we make groups of four children and they explain to each other the process of creating the game and how the game works. When they are done, let's play!

Follow up!

- In order to make the most of it, we can go the pre-school classes and teach them how to play our game!
- You can play using a quiz (on math, literacy, foreign language, science, general culture etc.). If the child answers correctly, he can choose a place to put his/ her stone or stick. If the child answer is not correct, he/ she misses a turn.

Corn husk dolls

Get ready

Simple corn husk dolls have timeless appeal and are just the thing to keep little hands busy!

They are all natural, easy to make, and truly ingenious, requiring not much more than some husks, twine, glue, and felt. Square-cut corn husks (the ones used for tamales and sold at international grocers) are the main supply for making these dolls. Basic twine is used to create body parts.

Go!

Get the children's attention by introducing the boxes with the dried corn husk. Name the materials, talk about where they come from, their colour and shape.

Start by soaking the husks in water for 10 minutes, and then blot excess water with a paper towel.

Lay four or six husks (always an even number) in a stack. Using thin twine, tie husks together, about 1 inch / or 2.5 cm from the top. Separate husks into equal portions (2 and 2, or 3 and 3), and fold halves down, covering the twine. Using thin twine, tie husks about 1 inch down, creating the head. Make the arms by rolling a single husk and tie the ends.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 90 min.

AIM:
Develop creativity, problem solving skills and collaboration by playing with loose parts

CLASS ORGANIZATION:
Whole class/ groups/ individual

SUPPLIES:
Dried corn husk, twine, glue and felt.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Position arms below the neck, and make sure the arms are equal. Tie waist. For a female doll, trim husks to an even length to form the dress or the skirt. For a male doll, separate legs into equal portions. Tie at knees and ankles. Trim evenly. To make the hair, glue yarn or raffia on top of the head.

Look back!

At the end, let each child/team present his/her work and talk about the joy of creation. Appreciate involvement, creativity, perspective and each presentation! Next, it is time for some doll play!

Follow up!

- Fashion clothes from pieces of felt: Cut rectangles, and snip slits or X's in the center; then slide over the doll's head, and secure around the waist with a strip of felt or yarn. (Glue on buttons, and use scissors to make fringe as desired.) Create hats and bonnets from felt and then glue them in place.

Natural art detective

Get ready

To defy boredom while visiting a museum, art gallery, or town monuments, we can invite children to become detectives, identifying themselves with Sherlock Holmes. Everyone is invited to look for animals hidden in the different works of art. This is an entertaining activity that helps pupils to appreciate artworks relating art to nature and leads them to develop observational skills.

We suggest organizing the pupils in teams of maximum three children. Each team will have a template sheet, and a pencil. You can decide to have your pupils search for any kind of animal creatures, or you can give a list of specific animals you would like them to search for, such as: dogs, mice, cats, fish, lions, birds, goats, monkeys, parrots etc. You can also decide to run this activity to strengthen pupils' competence in English.

Go!

This activity can be proposed during a school trip to a museum, church, art gallery etc. Invite the class to search for representation of animals either as statues, bas-reliefs, or painted pictures.

CURRICULAR LIN KS:

AGE GROUP: 7+

TIME: 90 min.

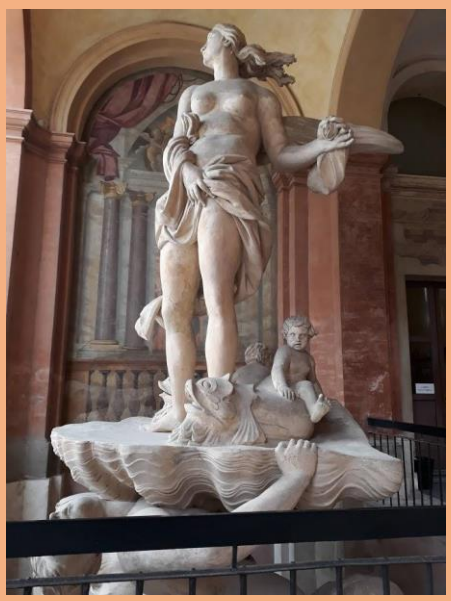
AIM:
Observation of work of art, teamwork, orientation

CLASS ORGANIZATION:
In teams

SUPPLIES:
Paper and pencil

OUTDOOR/INDOOR:

TEACHER/CHILD LED:



In case you wish to carry out the activity in class, distribute to each team plenty of pictures representing work of arts, and paintings (5 to 10) and invite the teams to search for as many animals as they can find. According to the situation, allow at least 30 minutes for the search, then, move on by asking to observe the artistic representations of the animals. In circle start the discussion by asking some of these questions: are the animals represented in a realistic way? If no, why not? Encourage children to focus on one animal that they noticed that they particularly liked, and to explain, why the artist decided to represent that animal in his artwork? Is the animal the main representation of the work of art, or just a decorative element?

Encourage pupils to be accurate in their description.

TEMPLATE

Complete the following, be precise:

ANIMALS	kind of artwork (painting, statue, bas-relief and fresco	Colour and dimension of the animal
Fish		
Dog		
Cat		
Bird		
Elephant		
Crocodile		
Cow		
Monkey		
Tiger		
Lion		
Tortoise		
Snake		
Mouse		

Look back!

In class invite pupils to draw one of the animals in the work of art they observed, and to write a short story about this animal. To help the pupils write their story, you can

invite them to follow this guideline: describe the animal; give him/her a proper name; make the animal explain how come the artist chose to represent him/her in the artwork; write whether the animal is happy about the way the artist painted or sculpted him/her and whether s/he likes to be admired by the visitors.

Follow up!

- For a nice summary of animals in renaissance art visit this Italian site: http://amicimartinengo.it/?page_id=3010
- Look at these sites too:
  https://www.tate.org.uk/art/teaching-resource/animals-art
  https://www.theguardian.com/artanddesign/jonathanjonesblog/2014/jun/27/top-10-animal-portraits-in-art

Faces of nature

Get ready

During the weekend, students will pick up pinecones, stones, leaves and sticks and bring them to school.

Go!

Once we have enough natural elements, we can begin to form faces. Form pairs and ask each child to observe his/her pair. "Symmetry is the quality of having two sides that are the same or very close in shape, size, position and colour. How are our faces symmetrical?" "How can the natural elements represent parts of our faces?" On the table we will make several types of faces putting the sticks as if they were hair, the pineapples as if they were eyes and this way students will learn that we can create all kinds of funny creations by using natural elements.

Look back!

Each student will show their creations and in assembly and point out the symmetrical parts. We will choose the funniest faces.

Follow up!

Students can see some ideas in:
https://www.youtube.com/watch?v=ViELsduhntU

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 45 min.

AIM:
Promote creativity and imagination with natural elements; develop symmetry.

CLASS ORGANIZATION:
Small groups or individual.

SUPPLIES:
Natural materials.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Lyrical autumn

Get ready

Autumn is often a time of outstanding beauty. We're treated to a final burst of colour before the onset of winter. Many poets write about the colours of autumn. Prepare a poem about autumn and introduce it to the students.

Go!

The students are divided into four small groups. After reading the poem "How nice!" By Valeri Petrov, students from each group are given a task. The first group will create a curtain for the theatre using autumn leaves from the school yard for decoration.

The second group will discover which autumn leaves have the same colours as those described in the poem and arrange them in beautiful decorative crafts.

The third group is looking for species of trees that the poet has introduced through the lyrics.

The fourth group presents autumn as a fairy who fulfils wishes. They prepare a nice decorated box in which each child will introduce a special leaf. On this leaf, the students write a word representative for their most important desire.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 40 min.

AIM:
Develop creativity by making a curtain of autumn leaves for theatre decor

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Leaves, loose parts, cotton or twine thread, sticks/small branches

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

In the last part of the activity, in front of the nice curtain of leaves, students recite the poem and share with their colleagues their wishes so beautifully represented by the leaves with words in the box.

Look back!

Make a circle and encourage everyone to talk about what they learned and experienced. Discuss: "How different types of trees change color in autumn? Why does this happen? What is photosynthesis? Why does this process no longer take place in some plants in the cold season?"

Follow up!

- An interesting idea is developing your own leaf maze or labyrinth with fallen leaves. Children will learn problem-solving skills and develop their spatial awareness.

Perform your own story tale

Get ready

Today it's the perfect day to create our own story. First of all, make little groups of 4-5 students and show them 3 different boxes with several natural elements with some writing on it (one box of stones with nouns written on them, another box of leaves with verbs and the last one of wood sticks with names of places).

Explain them the different roles they need to do:

- One student chooses two objects from every box.
- Another student, the narrator, tells the story.
- The whole group performs it.

Leave every group time to organize themselves and distribute their roles.

Go!

In every group, one of the students chooses two names, two verbs and two places from the boxes. All the group is going to talk and think about a creative story where everyone is going to participate as a character or element (dog, turtle, beach, jungle etc.) in the performance they are going to do to for the rest of the

CURRICULAR LI NKS:

AGE GROUP: 7+

TIME: 60 min.

AIM:
Skill of creativity, work in group, oral communication, ability to perform a story, analyze the words.

CLASS ORGANIZATION:
Group of 4-5 students

SUPPLIES:
Leaves, rocks or stones and wood sticks

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

classmates. One of them will be the narrator of the story.

Once they are ready, have the students seated in a circle to watch the performance of each group. It will be a funny way to invent a story and be able to perform it outside or inside.

Look back!

After the performance of each group, the class analyzes the story. Ask kids questions such as: "What characters appeared in the story? What was the story about? Who were the characters in the story? Where did it take place? How did it end? Did you like it? Which part did you like the most? What would you change in the story?"

Follow up!

- Kids can conjugate the verbs on the leaves and make sentences in present, past and future. It is a good way of learning the tenses.
- They can use the nouns on the stones and classify them into countable and uncountable nouns, plural or singular.
- They can make descriptions using the places on the wood sticks.

Nature in action

Get ready

Three groups of students, three different tasks. The teacher presents the tasks through a message hidden inside an envelope.

Go!

Tasks:

The 1st group will create musical instruments using only natural materials: stones, acorns, pinecones, sticks, leaves, hemp twine, cotton string, etc.

The 2nd group task is to paint using natural materials as tools such as leaves, mushrooms and sticks.

The 3rd group task is to imitate or reproduce/represent an object from nature - for example a tree, a flower, a bush or a mushroom- using body language and different body positions- individual or together.

During the activities students can listen to classical music or songs about nature performed by children. Depending on the time allocated to the activity, the groups of students can approach the tasks of the other teams. In the end all the students present their musical instruments, their paintings made with natural tools and mini-shows. Even if they are approaching the same tasks the

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 20 min/task.

AIM:
Development of creativity by expressing in an artistic form (music and movement, fine arts, drama) elements of nature; development of team work skills: collaboration, planning, communication, problem solving.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
3 envelopes including messages with tasks, drawing papers for paintings, colour paintings, natural materials such as stones, leaves, acorns, a device for listening classical music or nature songs for children.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

results will be different.

Look back!

The tasks allow students approach nature from different perspectives. They challenge their creativity and practice the skills so important in team work. The teacher will take photos during the activity but also will take care to photograph the final results.

Follow up!

- During next lesson let the children find out the names of popular instruments made of wood and present information about the tree they are made of.
- Record a video file with students reproducing natural elements. Ask them to select a suitable soundtrack according to the season.

Mathematics

Mathematics preschool activities:

- On, in, under, by
- Opposites
- Insects Sudoku
- Leaf Tangram
- Coloured stoneboard
- Colour wheel
- Colored stoneline!
- Let's play Dominoes!
- Circles and lines!
- Shapes on the ground
- The shape of nature
- Natural shapes
- Symmetry
- A world in a shape
- Four in a row
- Counting stones
- Cooling off
- Seedling sorting
- Pinecone aircraft
- Feed the squirrels
- The hungry croc
- Log resort
- Math with nature
- Patterns
- Sticks and stones
- How big is your family?

Mathematics primary school activities:

- Right-left-in between
- Geometric figures
- Create shapes
- Doing math with fall
- Overlapping shapes
- Geometry in the woods
- Math applied in parachute testing
- Representing natural numbers
- Play with numbers
- Inequality under a tree!
- Estimate seed number
- Acacia pods' Maths
- Math nature school
- Fraction walls
- The frog route game
- Open your wings!
- Nature in centimetres
- Measuring shadows
- m, dm, cm
- Measure and build
- Unit measurement
- Weighing in nature
- How old am I?
- Measuring time with water
- Happy clock
- Problem solving
- Problem solving
- Nature "Capture the flag"
- The Fibonacci sequence
- The third order magic square
- Eco-math mosaic
- Math Express

On, in, under, by

Get ready

The title of this activity is the same with a famous song on positions that you can find on youtube.com. This or any other song would be a wonderful way to start this lesson. However, in order to prepare it, you need some sticks (about the size of your hand). Remove the bark with a knife for about 2.5 cm at one of the tops so that the stick looks like a doll with head and long body. Next, ask the children to coil colourful wool around the ”body ” and add two more arm-shaped twigs to create a stick-man. Make sure that you have one stick-man per child.

Then gather the children in a circle and introduce the stick-people. Let the children create a story around them and add special names.

Go!

Tell the children that our stick people love playing hide-and-seek and prove it with one of them. Ask the children to close their eyes and in the meantime you ”hide” the stick man (still keeping it in the hand and not covering it totally, so that the children can easily identify its whereabouts). Change your voice and say: ”Can you find me? Open your eyes!”. Once the

CURRICULAR LINKS:

AGE GROUP: 3+

TIME: 40 min.

AIM:
Develop spatial awareness by identifying positions such as: on, under, on top of, in front of, behind, by, between.

CLASS ORGANIZATION:
Groups of about 8-9 children.

SUPPLIES:
Rocks and leaves.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

children have found the stick-man ask them to name the location of its hiding place (behind the tree, under the leaves etc.)

Now give each child a stick man and practice some hiding places (thus checking if the children understand names of positions). ”Please, hide the stick man: in the tree/ between two rocks/ under a big leaf/ on top of your head or in front of a log.” Use the natural landscape and their body to practice various positions.

Now, it is time for them to make pairs and take turns in hiding their own stick-person. Once they find it, they will have to name the hiding spot and switch.

Look back!

Play a number of times, and then ask the kids to sit back in a circle and name their best hiding spot. Ask them why is it important to know positions in everyday life and give some funny examples. Finally, allow for free play and exploration with the stick-people and don’t forget to have fun yourself!

Follow up!

- With older children, you can make two groups, one hiding their stick-people and the other identifying the hiding spots. Then switch!
- You can further use the stick-people for role play on the book *Stick Man* by Julia Donaldson and Axel Scheffler.

Opposites

Get ready

While playing, children collect data about what they see around them: the dimensions of natural objects shape their own ideas about size.

Some children are fascinated about this aspect, we realize this when we overhear comments like: "Oh that bird is really big!, Look at that fat, fat worm, this ant is very, very small, my flower is bigger than yours etc..." When you notice that your class tends to focus on the size aspect of the natural elements they are observing fairly often, then your children will certainly be ready for this activity.

Go!

Outside, in the school garden sitting or standing in a circle on a nice green field, invite your class to look around them. You might choose to read a short story about the topic of dimensions (Denise Fleming, *In the Tall, Tall Grass* Picture Book), you might consider to introduce the topic teaching a song, you will find a wide selection of songs in English about dimensions and opposites check for example: the *Alto and Corto* song by Jack Hartmann or *the Opposite song* by KidsTV123. After this introduction, tell your children to close their

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 1st phase 60 min;
2nd phase 60 min.

AIM:
Observation skills, concept of size, acquisition of similarities and differences, spatial awareness, size awareness.

CLASS ORGANIZATION:
Groups, whole class, individual work.

SUPPLIES:
Drawing pad, pencil, colours.

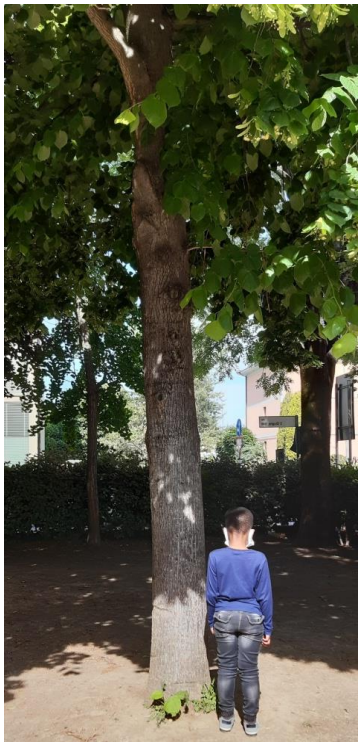
OUTDOOR/INDOOR:

TEACHER/CHILD LED:

eyes, and pretend they are a blade of grass. Children like to pretend they are something else. The blade of grass is very puzzled about a series of questions: Am I tall or short?

Am I fat or thin?, Long or short? Children freely answer to these questions pretending they are the grass. Invite them to stand up and kneel down, ask them: "Can you make yourself as tall or as short as the blade of grass? Are you taller or shorter than grass? Is grass taller than trees? Are you shorter than grass? What is shorter than grass?" etc.

Later on, invite children to observe the trees that they can see in the school garden, then invite them to imagine they are trees. Then, ask them a set of questions as the ones you asked about the grass. "Are you taller or shorter than your tree? Who is taller than his/her tree? What is taller than a tree?" Give your children plenty of time to move around and have the chance to compare their body size with the size of grass and of the surrounding trees. Do not rush your children through this phase of the activity.



Invite your children to stand next to a tree trunk, and check if they make any comments about their heights in comparison to the tree.

If you have been doing some gardening with your class, then your children will have the opportunity to experience size and dimensions while the flowers or vegetables you planted are growing.

Back in class distribute drawing paper and colours and invite your children to draw themselves next to grass and trees.

Consider creating a collage with a leaf, cut out the pictures that each child drew of themselves, and see where they will glue it.

Look back!

Exploring natural sizes, shapes and dimensions in nature is an endless task, which leads to interesting discoveries. Children need to experiment as much as possible in order to acquire a sense how their growing body compares to the size of the natural elements that surrounds them. These activity can then be expanded by proposing children to compare their body size with the size of insects, cats, dogs and birds. Eventually, you can move on to see what they think of how tall the sky is, and how big or small is the sun, the stars and the moon. By raising their point of observation you will allow them to adventure to more challenging tasks.

Follow up!

- You can have a ruler next to your vegetable garden bed and measure plants regularly (for example every Monday). Write down the height on a fact file that you should keep in a plastic protection. Next to the measurement, write the date, too. Once the plant is big, you can check the fact file to see which months has the plant grown the most. You could also measure how much water a plant needs to grow. The children will be amazed!

Insects Sudoku

Get ready

In spite of its name, Sudoku did not originate in Asia but in the 18th century Switzerland. It was a game invented by a mathematician and known under the name of "Latin Squares". A modernized version was invented by Howard Garns, who was an American freelance puzzle inventor. This time it was called "Number Place," since it involved placing individual numbers into empty spots on a 9 x 9 grid. In 1984 this game became popular in Japan and it was given the name "Sudoku," which is short for a longer expression in Japanese – "Sūji wa dokushin ni kagiru" – which means, "the digits are limited to one occurrence." Sudoku is highly popular in Japan, where people buy over 600,000 Sudoku magazines per month. (Source: https://sudoku.com/how-to-play/the-history-of-sudoku/)

The game can be adapted for all ages, is easy to play under all conditions (even when travelling and commuting), can have various levels of difficulty, exercises the brain and gives a sense of order and balance to players. Before you start the activity, make sure you have a printed set of Sudoku. Here is an example of template but you can make your own, adjusting the difficulty of it depending on the your children group.

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 30 min.

AIM:
Practice Spatial perception and familiarize with geometry; be able to perceive and define a place according to what exists around it with use of simple spatial senses; practice even allocation/distribution as well as the concepts of horizontal and vertical.

CLASS ORGANIZATION:
Individually, in pairs or mini groups.

SUPPLIES:
Sudoku board, photos of insects.

OUTDOOR/INDOOR:

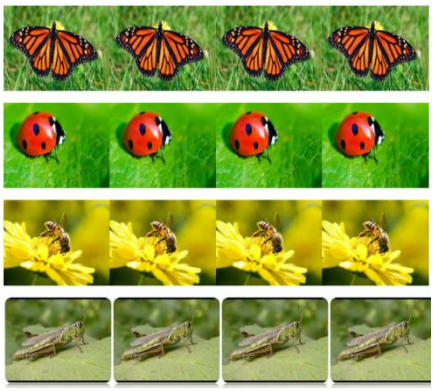
TEACHER/CHILD LED:

Go!

Sit in a circle and introduce the children to the concept and idea of Sudoku. Explain that it is needed to fill each line and each row of the board with only one kind of insect at the time. Play it once all together so they can have a trial attempt.
Insect Sudoku can be played individually, in pairs, mini groups or in the whole group, too. You may use the template below to start with. Each player places an insect photo on the Sudoku board until the board is successfully completed.

Look back!

Gather back in a circle. Ask them how it was for them. If it was too easy or too difficult. Try to provide adequate challenges. Adjust the difficulty of the Sudoku game, depending on the skill level of your group.



Follow up!

- You can use photos of insects that exist in your local area, taken by the children.
- Play Sudoku with local medicinal trees or smaller plants or with local birds.
- With older children you can try a Wordoku – where letters are used instead of numbers.

Leaf Tangram

Get ready

Before you start the game prepare enough Tangram Kits for all the children to play with. We used leaves fallen on the ground that we gathered together with the children. Cut these leaves using Tangram patterns and laminate them just like you do with paper.

Go!

Begin by telling the children the story of how Tangram came into being. Then divide the children into groups and give each group a Leaf Tangram Kit. Let the children imagine the shapes that they could create with the shapes. Now show them the Tangram pictures with the given shapes. Start with the easiest ones. Their task is to combine the leaves in the kit in such a way as to recreate the pictures.

Introduce the rules of the game: all the seven pieces have to be used without overlapping them, turn the leaves if necessary. Encourage the children to name the shapes while they work and count the shapes used. This is also a good opportunity to remember concepts such as *smaller, bigger, the same size* or positions like *above, under, to the left, to the right.*

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 30 min.

AIM:
Develop logical thinking and spatial awareness; recognize the shapes used in the Tangram game.

CLASS ORGANIZATION:
Whole class, small groups.

SUPPLIES:
Leaf Tangram Kits – at least 1 per group.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

As Tangram is a game invented in 18th century China, we suggest using some appropriate music in the background.

Look back!

Finally, you can ask the children to make sentences with the words that name the recreated pictures. Connect emotionally with questions such as: "How did you feel during the game? Was it difficut to recreate the pictures while following the rules? How else can we play with the Tangram Kit?"

Follow up!

- Let the children create images without a given picture;
- Combine two or more shapes to create new geometric forms;
- Associate the shapes in the game with the cubism of painters such as Braque or Picasso.

Coloured stoneboard

Get ready

Prior to the activity, the teacher should collect with the students various sizes of stones (small, medium ideally) so that each kid can have at least 5. These can be collected from the school garden or the forest. If that is not an option, the teacher should provide the students with the stones. Using the activity «Color stones» give your students stones of different sizes so that they can paint with 6-8 different colours maximum. Alternatively, the teacher paints and prepares the stones for the students. Using the cartons and the markers, prepare some boards with the following procedure:

Using a black marker, draw some lateral and vertical lines so that they create small squares. Choose coloured pens which have the same colours as the stones that have been painted and draw a big dot in the middle of each square. Follow this process until all squares have a coloured dot in their middle. Make sure that each square has a dot of 1 out of the 6/8 colours that you have picked for the stones to be painted with. The aim of the game is that the students should place the coloured stone on the square with the same (right) colour.

CURRICULAR LINKS:

AGE GROUP: 3+

TIME: 15 min.

AIM:
To practice sorting and matching, colour recognition, fine motor skills, spatial awareness in a 2nd environment; to work in small groups; to have fun!

CLASS ORGANIZATION:
Solitary play or groups 2-4 children

SUPPLIES:
White cartons, ruler, colored pens, colored pebbles.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Go!

The game is played with 1-4 people. Scatter on the table or the floor the boards that you have created and next to each board, place a small bucket with the coloured stones. Explain to the group what the aim of the game is and allow them as much time as they need to complete the task. Each child individually or in small groups (up to 4 people) choose a board and sit next to it.

Look back!

Once everyone has finished, sit in a circle and discuss the activity. Observe if all stones have been placed on the correct square. Ask the students if they enjoyed it and if they found it easy or challenging.

Follow up!

- An alternative to the game is to create on the boards, a motif with colourful lines, triangles, squares or other hidden pictures. For example, a house, a kite or a ship.
- Ask from the students to fill in the squares with coloured dots by using the coloured pens so that they prepare the boards on their own.
- The stones and the boards could be kept in the room/class so that the students can play with them whenever they want.

Colour wheel

Get ready

There are so many different colours in nature! We have already made a paper wheel (preferably laminated) with colours that we can find in nature. Make sure you have more shades of green and brown as these are the most common. Ask the children about the colours they can see around them this time of the year.

Go!

Sit in a circle and place the colour wheel in the middle so that every child can see it really well. Start by naming the colours on the wheel. For shades of colours use vocabulary like „light or dark green". Ask the children to go and find a natural element that they can bring back and match with the colours of the wheel. They can either go in groups or individually. Make sure to set the boundaries for the area that they can search and to remind them that they can bring back only things that have fallen and are already on the ground. Every flower that we pick means less flowers next year. However, they can take just one petal of the flower if they cannot find another object of the required shade.

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 20 min.

AIM:
To recognize and group natural materials with a single criterion.

CLASS ORGANIZATION:
Small groups/individually

SUPPLIES:
A wheel with natural colours

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

After about 10-15 minutes, come back to the circle and talk about their findings. Could they find all the colours? Do colours change depending on where we are? Are there colours that we can see only when it is sunny? (flowers like daffodils or chicory bloom only on sunny days)

Follow up!

- You can use the wheel every time the season changes so you get different colors and they observe the differences on the environment.
- You could also flip the steps, meaning you find coloured objects first and then colour the wheel accordingly. If you make such wheels for every season you could compare the 4 colour wheels.
- You can make a wheel that includes less natural colours and discuss why we cannot find objects to match these colours.

Colored stoneline!

Get ready

Prior to the activity, the teacher should collect with the students various sizes of stones (small, medium and large) so that each kid can have at least 5. These can be collected from the school garden or the forest. If that is not an option, the teacher should provide the students with the stones. Using the activity *Colour stones* give your students stones of different sizes so that they can paint. At least 6-8 different colours should be available for the students. Alternatively, the teacher could paint the stones and prepare them for the students to play with. The game could be played in small teams of 6-8 people.

Go!

Make a circle with the students and place in the middle a bucket with all the coloured stones. Each child should come closer in turns to pick 5 stones from the bucket. We advise the children to count loudly as they pick the stones. Help them if they get stuck! Afterwards, once they have picked their 5 stones, they sit back in the circle and place them in front of them. When all players get 5 stones each from the bucket, we explain the aim and the rules of the game.

CURRICULAR LINKS:

AGE GROUP: 3+

TIME: 30 - 40 min.

AIM:
To practice observation and decision making; to understand complicated rules; to focus on task and practice colour recognition. To have fun!

CLASS ORGANIZATION:
Groups of 6-8 children

SUPPLIES:
Coloured stones, a basin or a bucket

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Rules of the game:

1. Everyone plays in their turn (clockwise).
2. Every time it's someone's turn, they can only place one stone in the line.
3. The stones can be placed on either edge of the line.
4. The stone that is placed should always have a different colour from the one placed on the tip of the line. For instance, if the tip of the line has a stone coloured red, the next player should place a stone coloured yellow/blue/green. Hence, anything but red!

The winner of the game is the one who will place all of his stones in line first! However, the game is continued until all players have placed their stones in line or until no stones can be placed. Now, start creating your colourful line of stones!

Look back!

Gather your group in a circle and ask the students how they find the activity. Was it easy/hard? Did they enjoy it? We can look at the line that was created and ask the students what they think it looks like. For instance, it could be looking like a path, a colourful ribbon or a caterpillar. Discuss with the students and allow them to express their thoughts and feelings in the activity.

Follow up!

- When the game has been played for a few rounds and the children have understood the rules, we could place the coloured stones in a box in the room so that the students play anytime they want.

Let's play Dominoes

Get ready

Primarily, start by creating with the children or on your own at least 20 sticks which will be painted on their two edges with the same or different colours. After that, gather your class in a circle and place the sticks on the ground or on a table where the activity will take place. Ask your students to choose 5 sticks each. The game is better played with 4-6 people.

Go!

Each student should have 5 sticks in front of them. The first player places one stick in the middle of the circle. The next player who sits next to them should see if they have in hand a stick which has the same colour with the stick placed in the middle, in one of its edges. If they have one that could be paired with the ones in the middle of the circle, they could place it down and match them. However, if they do not have sticks in hand with colored edges that could be paired with the ones on the floor, the player loses their turn. The game should be played clockwise and therefore, the next player places a stick. The winner is the one who puts down all of their sticks first. Although there might be a winner, we can

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 15 - 30 min.

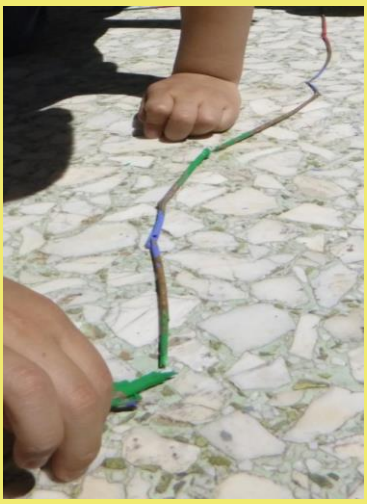
AIM:
To recognise colours; to practice turn taking; to practice observation; to have fun!

CLASS ORGANIZATION:
Whole group

SUPPLIES:
Painted sticks

OUTDOOR/INDOOR:

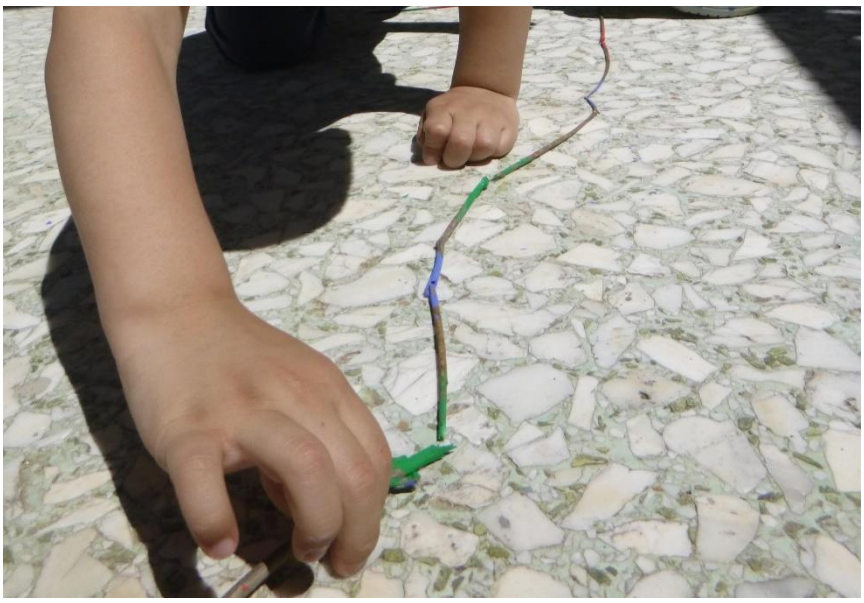
TEACHER/CHILD LED:



continue playing the game until there is no other stick that could be matched with the ones on the floor.

Look back!

Once the game ends, discuss with your students about the activity. Did they enjoy the game? Was it challenging or easy for them? We can also observe what sort of line/design has been created with the sticks and ask them to think what it may represent. ”What does this shape look like? ” (a snake, a train or a road?) Allow the students to discuss and express their feelings and thoughts on the activity.



Follow up!

- Use the ”stick dominoes” activity to make the children make their own dominoes!
- Check the art lesson *Stick domino* which is also part of this guide.
- Play variations of dominoes such as: *Spinner* or *Mexican Train Domino.*

Circles and lines!

Get ready

Along with the children of the class we collect a large amount of natural elements (stones, oaks, leaves, sticks etc.) from the school garden or the forest. If this is not an option, the teacher should provide the students with natural elements.

Gather your students in a circle and ask your group to show you the elements that look like a circle and items that look like lines (e.g. straw-line, sun-circle, stick-line etc.)

According to the number of elements that have been collected, the game can be played with the whole group or with smaller teams so that the children have plenty of materials at their disposal.

Go!

Scatter the materials on the floor and ask your students to use them in order to create circles and lines on the ground. For example, to create lines they can combine all elements that look like lines (leaves, sticks, stems, pine needles etc.) Make sure you work on a flat background that ensures good visibility (sand, earth, tarp etc.) The students are free to play individually or in small teams so that they can cooperate and create the shapes together.

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 45 min.

AIM:
To practise the concept of circle and line, to expand pre writing in nature, to work with peers.

CLASS ORGANIZATION:
Whole group

SUPPLIES:
Stones, leaves, sticks, acorns, pine cones and other natural materials.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

Once the game is completed, gather your group in a circle. Ask each student to show you what they created. Is it a circle, a line? How big or small is the shape and what materials did they use to create it? Ask if they found the activity easy or challenging, if they enjoyed it. Finally, if they want they could tell us what this shape looks like (e.g. "I made a snake" or "I made a ball").

Follow up!

- Take a walk in the forest and look for other elements that look like lines and circles and which you cannot move (trees or marks on the tree barks look like lines, logs, boulders or clourds can look like circles).
- Look for the lesson „The Dot" where you can see that on one object can have more than one shape, depending on how you look at it.
- Observe how lines and circles combine into fractals in nature.

Shapes on the ground

Get ready

This is a follow up activity about shapes. We already recognise them in the objects around us, we have drawn them on paper and have felt their sides. It is time to make them with natural materials. We need either stones, pine cones or sticks. Depending on the quantities that we have, we can make smaller or bigger shapes. We scatter the materials around the area we are going to play or we let the children find them themselves.

Go!

Begin by remembering the shapes! We split the children in smaller groups. 3-4 in each group. We give each group a long string (3-4m) tied at the ends. Ask the children in each group to stand in a circle and hold together the piece of string. Ask them to name a shape. If they hear *circle* for example, all the children in the group hold the string in such a way as to form a circle. You can continue with other basic shapes like *triangle, rectangle, square, oval.*

Now that you have had a recap of the shapes, ask each group to gather sticks, stones or pinecones. We give instructions about how far

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 20 min.

AIM:
Practicing shape recognition with non-directive natural material.

CLASS ORGANIZATION:
Small groups of 3-4.

SUPPLIES:
Sticks, stones, string.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

they can go to get them: ”until the tree with the white flowers, until the fence etc.”. When they get back we ask each group to make a shape with the materials they have gathered. They can decide on the size. When they finish each group goes around to see what the others have made.

Look back!

Back in our whole group circle we ask the children how they decided which shape to make, if they all cooperated with each other, if they remember what shapes the other groups made.

Follow up!

- Let us try to make the same shapes with our bodies lying on the ground.
- Another game: a child says a shape and everyone else runs towards it.
- See other shape based lessons in the Guide of Good Practices like: *The Shape of Nature, Circles and lines!, The Dot, The World inside shapes.*

The shape of nature

Get ready

Could we perhaps match every natural element with its contour? Let's try! Collect with your students various natural elements in different shapes and sizes (stones, oaks, leaves, sticks and more) from the school garden or the forest. If that is not an option, the teacher is responsible to bring the materials for the students. Choose 8 of them and draw with a colouring pen their contour on a carton board. The game is played with teams of 4 or 8 people.

Go!

Gather your group in a circle and place in the middle 8 materials and the board /carton board with the contours. Ask each student to stand up in turns and to choose one material. In continuation, they should try to match this material with the right contour on the board. The game ends when all 8 materials have been matched to their contour.

Look back!

Gather your group in a circle and ask if they enjoyed the game! Ask if they found it easy or

CURRICULAR LINKS:

AGE GROUP: 3+

TIME: 15 min.

AIM:
To practice shape recognition while discovering new shapes in nature. To practice matching and sorting. To cooperate. To have fun.

CLASS ORGANIZATION:
groups of 4-8 children

SUPPLIES:
8 types of natural material, a large piece of carton, a coloured pen.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

challenging. Discuss about the characteristics of each material (shape-size and weight) and ask if they could see differences or similarities between the materials. Allow the students to express thoughts and feelings about the activity. If your students are younger, you can use the coloring pencils to draw inside the shapes, and make contours easier to understand. If your students are older they could try to create the contours on their own.

Follow up!

- If you want the game to be more challenging, you could bring more natural elements than the contours so that the children spend more time observing and looking for the right one.
- They could create a board with contours only from one material as well. For instance, 8 different leaves or sticks.

Natural shapes

Get ready

This activity can be done in class but will definitely have a stronger impact on children if done outdoors.

Make sure you have enough materials ready for all your students. At the beginning of the activity remind the children the rules on playing with sticks.

Go!

An introduction with music and movement will capture children's attention and help them get into Action-ready mode! They watch a video file about shapes, dance and reproduce simple shapes (triangle, rectangular, square, circle, oval) with their body parts. The shapes are identified and named one at a time. Guided by the teacher's questions students specify each shape' characteristics (sides/corners): "How many sides has the square got? How many corners has the triangle got? How about the circle?" Also, they compare the length of the sides for different shapes. Example: the square has four sides, all equal. The rectangle has four sides too, but its sides are equal two by two. The triangle is very "playful". Some triangles have all three sides equal, others not. A set of cards with different shapes is helpful.

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 25 min.

AIM:
Consolidate knowledge about geometrical shapes; identify geometrical shapes in the environment; reproduce geometrical shapes using materials from nature.

CLASS ORGANIZATION:
Small groups, individual

SUPPLIES:
Twigs, sticks, pine cones, green and dried leaves, little stones, set of cards with shapes

OUTDOOR/INDOOR:

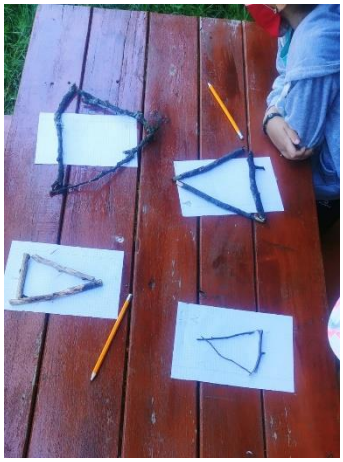
TEACHER/CHILD LED:

Invite your students to look around and identify shapes in nearby objects. Help them to "discover" new shapes such as pentagon, hexagon or diamond.

In the next part of the activity students are challenged to create their own shapes using materials from nature. Students work in teams (groups of 4-6); each team will work with the materials prepared in the indicated area. The teacher will give them time to explore the materials and encourage them to collaborate and share their observations. Requesting as much data from the students as possible, the teacher ensures both the development of mathematical vocabulary and the development of observation and analysis skills. Students are asked to arrange their shapes in ascending/ descending order, or reproduce simple patterns (AB, ABC, AAB, ABB).

Look back!

Guided by the teacher, students connect shapes by other objects often observed in everyday life like traffic signs. Take a short walk in the streets around the school, pay attention to the shape of the traffic signs and reinforce their meaning. Organise a *Shape Hunt*! How many shapes can they discover on this side of the street?



Follow up!

- Worksheets for reinforcing geometric shapes https://www.suntparinte.ro/activitate-in-familie/figuri-geometrice
- Using famous paintings as a trigger for students' creativity carry out an Art activity which celebrate shapes (Kandinsky, Mondrian, Rothko) http://www.playideas.com/25-picasso-inspired-art-projects-for-kids/
- Traffic signs explained for 5-6 years old https://www.youtube.com/watch?v=lBv0mnWpZ5k

Symmetry

Get ready

To start this activity we will show the students an image of a shape made of natural elements (slim sticks, stones, leaves, pine cones or any other things you can find around). We will name the materials and discuss the details of the elements. Here, there is room for mathematical concepts like size, colour, shape, comparisons ("bigger/ smaller than your little finger") etc. It is a good idea to discuss order (the first/ the second/ the last) and position (to the right/left, above/ under/ next to) etc. Next, the students will collect elements in the forest for a few minutes that have to be similar to those of the picture. It is not a good idea to use sticks with a special shape or leaves of a particular colour, since we want the children to succeed and find similar elements.

Go!

Time to start! Once they have collected all the elements necessary, they sit in a small group and start to reproduce the image trying to make it as similar as possible. Depending on the experience the group has with symmetry, it is possible that we will

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 60 min.

AIM:
Develop the space skills and the capacity of reproduction; understand the concept of symmetry; develop communication and group management skills.

CLASS ORGANIZATION:
Small groups

SUPPLIES:
Sticks, stones, leaves

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

need to bring in mirrors, explain what symmetry is and practice it with mirrors. If the students are younger use very easy images, made of few elements, since symmetry can be quite tricky. While they work, ask them to talk about colours, shapes, size, and positions.

Look back!

To finish the activity, each group will explain why they have used these natural elements and the similarity with those of the picture. They should use math vocabulary adequately. Give feedback on group work and discuss with children where we find similarity in everyday life (our bodies, trousers, buildings, images reflected in the water, the way we decorate a room).

Follow up!

- We can ask the children to create their own objects and other groups will try to create the symmetry.
- Use simple images at first and then make more complex ones, one step at a time.
- You can find more ideas using the following address: https://aprendiendomatematicas.com/series-elementos-naturales/

A world in a shape

Get ready

For this activity choose a natural setting that has at least one tree or any other natural element. Use the sound of the whistle or another call you agreed on to gather all the children in a circle. Use "Mirror, mirror" to introduce some of the rules of the lesson (during this game, the teacher or a child calls out a rule and the group repeats). Here are some examples of rules/ agreements for this particular lesson: "We respect nature by using a quiet voice" or "We respect each other, by taking turns

Go!

Using your hands and fingers, create different shapes, like circles, squares, rectangles and triangles. Invite the students to name the shapes and mirror the teacher by creating a set of similar shapes and then create new ones using other parts of their bodies.

Introduce the surprise bag to everyone present. This bag contains a set of wooden planks cut in the middle in different geometrical shapes. Ask the students to name the shapes and think of different activities to

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 45 min.

AIM:
Develop space awareness, shape recognition, communication skills, aesthetic sense, creativeness.

CLASS ORGANIZATION:
Small groups, individual, whole class

SUPPLIES:
Whistle, wooden shapes cut in the middle, paper sheets, stick.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

do with them. Encourage them to be creative and listen to all ideas. At the end, tell them that the shapes could be used to watch the world through them and name some objectives for this activity: to name geometrical shapes, observe the surrounding environment through them, create new geometrical shapes. Announce the focal point of observation in the area: a tree, a bush or any other natural element. Split the group of students into 4 smaller groups and place them in a semicircle at various distances from the focal point but of an approximately equal distance from each other. Each group gets a set of shapes and is invited to look through them, observe the focal point of interest from different angles and positions and describe what they see. Give at least 5 minutes for this stage of the activity. Make sure that inside the group the students take turns and switch the shapes. Go from group to group, guide their observation by asking different questions and listening to their answers. "What happens if I bend a little bit?, What changes if I looked downwards or upwards over my shoulder?, Which shapes should I use in order to see more of my focal point?, Do

I use both my eyes when looking through all shapes?, Do I see the whole point of interest or just a part of it? Which part?, How should I sit in order to see the whole point of interest?". Blow the whistle and invite the groups to change positions clockwise. Once they are in their new position, ask the students to redo the observation process. Ask the same questions as before, but pay attention to their answers as most of them will be changed. Make the students aware of this. After two

rotations, introduce some plain sheets of paper or cardboard and invite the students to put them on top of the wooden shapes and create new ones. In a similar manner, finish the last two rotations.

Look back!

When all groups are done experimenting, introduce the "talking stick" and ask each group to choose a representative. Give 3 minutes so that the groups decide what the representative will present to all other groups about what they have observed during the activity. Together with the students take conclusions and make suggestions for future observations. If needed, guide the presentations by asking more questions. Some of the conclusions might be: the focal point of interest looks different when looking through the same shapes, but from different locations and angles; the image of the focal point can be bigger or smaller depending on the distance from it; the image can be changed when looking from the same position, but through different shapes. At the end, make real life connections by giving different examples of situations where distance, angle and shapes are important: taking photos, looking through binoculars etc. Invite students to come up with other examples. Ask the students how they felt and what was the most surprising discovery they made.

Follow up!

- Study painters that are famous for using shapes in their art: Mondrian, Kandinsky, Klimt, Delaunay.
- Go in nature and find natural settings or elements that can create different shapes.
- Introduce the terms *distance* and *measurement*. Present and practice conventional and non-conventional ways of measurement.
- Introduce new geometrical shapes.

Four in a row

Get ready

Board games are important for children's mental and social development. Children are enriched with various skills while playing, important skills like decision making, critical thinking and social interaction. Board games improve concentration and support the development of creativity.

All over the world children play some form of a three - in a row game. In our country, Romania, it is well known a game called *Moara* or *Tintar*. In this activity, I introduce a Four- in a row *rustic* version.

The game board has a triangular shape simply drawn with a black marker on a wooden board or wood slice. Outdoor, children can draw the game board with chalk or with a sharp stick on the ground.

Trace an isosceles triangle on the board. Divide the triangle in half. Divide the two sides in four. Go over your lines with a marker and mark the thirteen points where the lines intersect. See the picture.

As counters, children can use any small natural objects like acorns, nut shells, pistachio peels, pebbles, leaves, coins, buttons. Make sure one player's counters are different from each other's counters.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 50 min.

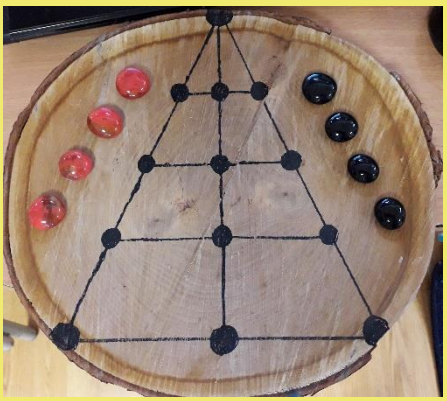
AIM:
Consider the concept of rules, practice following rules, detect patterns, plan ahead, predict the outcome of alternative moves, learn from experience, spend quality time with friends and family

CLASS ORGANIZATION:
Pairs

SUPPLIES:
Game boards, black markers, rulers, counters of different kind: pebbles, small cones, leaves, coins, bottle caps, buttons, etc.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

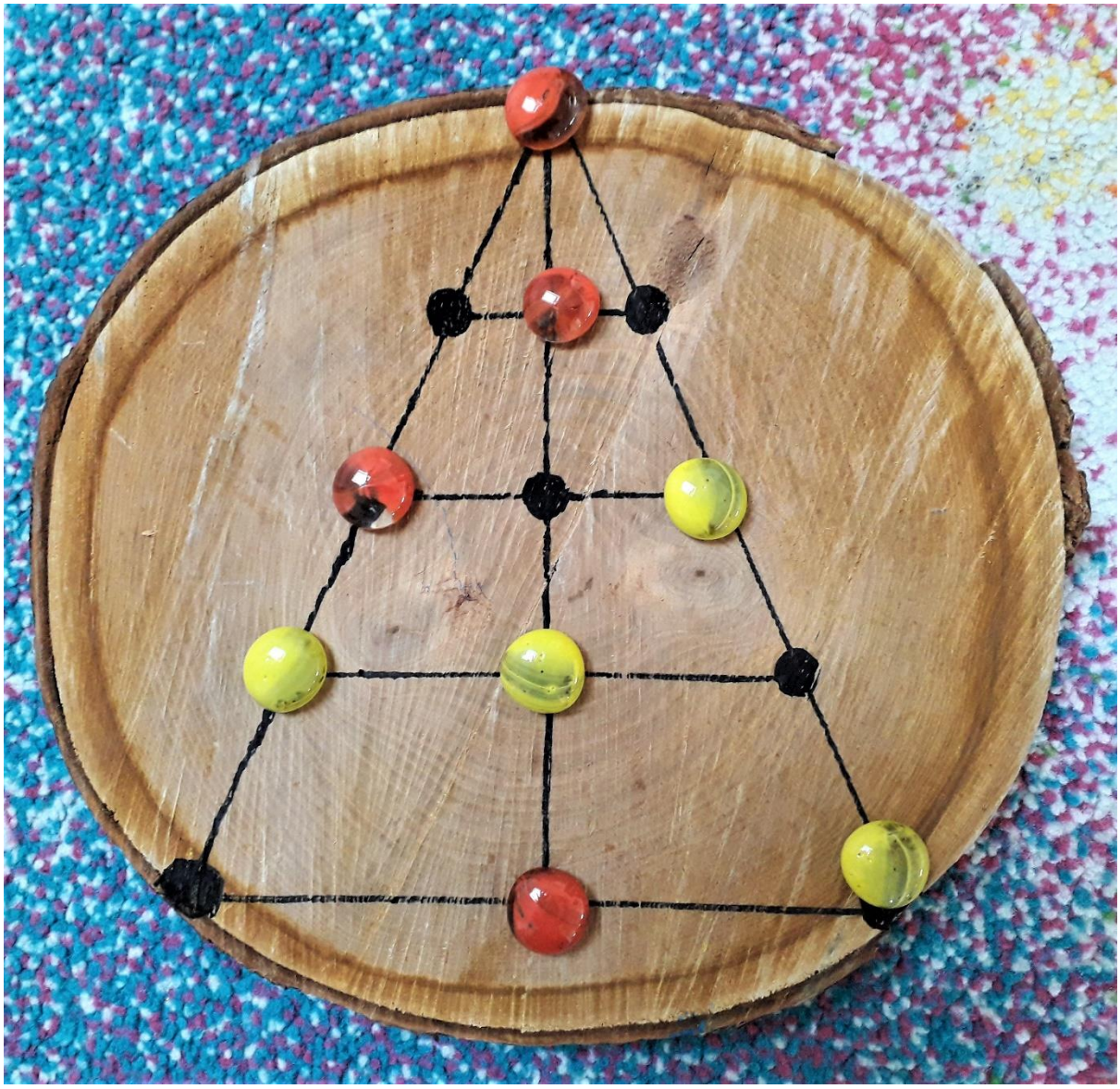


Go!

Players take turns placing their four counters on the empty points of the board. Then each player in turn moves one of the counters to a nearby empty point. Jumping over a counter is not allowed. Each player tries to make a row of four. The winner is the first to make a line of four.

Look back!

For hundreds of years people all over the world have played three-in-a-row games like Three Men's Morris. The number told you how many counters each player used in the game. Although Morris games have been popular in England for centuries, the game itself goes back thousands of years. A thousand-year-old burial ship of a Viking prince was dug up in Gokstad, Norway, and among its possessions was a wooden game board of three connected squares. The ship's sailors had cut the same diagram in the wooden planks of the deck for their own games. It is likely that the Vikings from Scandinavia learned the game and spread it around the world when they sailed to other parts of Europe, northern Africa, Asia, and even America. Norwegians still use this same board today for the game they call Mølle. Germans call the same game Mühle, Russians call it Melnitsa, in Hungary it is Malom, and in Italy it is called Mulinello. All these names mean "mill." In Nigeria a similar game is known as Akidada, and in Arabic speaking countries the game is called Dris.



Follow up!

- During the Renaissance English pageants used girls and boys as counters in Nine Men's Morris. Imagine the scene as men in red velvet and women in lace-trimmed gowns gathered around the large Morris diagram marked on the ground. They watched as game masters ordered their living game pawns to move along the lines of the squares and would call out "Good Move!" or "Watch Out!". Inspired by the medieval version create a funny version in which children are the pawns of the game. Thus they practice orientation and location in space in an out-of-the-ordinary way.

Counting stones

Get ready

Prepare counting cards with numbers 1-100 like in the picture below and laminate them. This way you can use them over and over again, protecting the environment.

Before we start the activity we are going to show the children all the materials that we are going to need. The stones, the water, the glasses, the cards... We will count until the highest number they know and the teacher will continue guiding them through the rest of the numbers until 100.

Go!

Sitting down in a circle we will ask them how many stones can be in the glass without spilling the water out. If we use smaller stones, the game will last longer. Each of them will say and write a number and later we will see who was closer to the real number. Two students will start the game, adding one by one the stones into the glass and crossing out the corresponding number on the card with the markers. They will continue counting in a loud voice and the rest of the class will help them count until the water starts to spill out of the glass. Ask them to go down and look

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 20 min.

AIM:
Developing fine motor skills, counting, listening and speaking skills, deductive thought

CLASS ORGANIZATION:
In pairs

SUPPLIES:
Little stones, two glasses full of water, two cards with numbers from 1 to 100, two markers.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

closely at the water and also try to find a technique that would allow them to introduce in the glass as many stones as possible.

Look back!

Each student will show the rest of the class the number they wrote at the beginning of the game in order to see who guessed the exact number of stones.

To finish the activity, discuss what they observed when they looked closely at the surface of the water, talk about the surface tension of the water and the most successful technique used during this game. Talk about how some animals like basilisk lizards (Basiliscus basiliscus) use this property of the water to walk on its surface.

Follow up!

- Try the same activity with shells.
- With younger children you can use grids up to ten, small cups and bigger stones.

Cooling off

Get ready

This is an activity meant to be made in spring or after summer holidays, as families will be heading to the beach on weekends. Why? Because children will be picking up as many different sized seashells as they can and then bring them to school. Once they have collected enough seashells, we can start the activity.

What do we need to prepare for the activity?

- A big container (not too deep and blue if possible)
- Water
- Seashells (different sizes and colours).
- Sand (optional).

Before starting, ask the students where they picked the shells from, which other natural elements they found.

Go!

Step 1. Fill up the container with water and sand (optional) and place the seashells.

Step 2: We ask the students to pick up a shell, for example the one they like the most. Once they have chosen, we ask them to look for other shells looking similar. We can use different classification criteria (size, shape, colour) which will allow us to work on inspecting and classifying.

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 45 min.

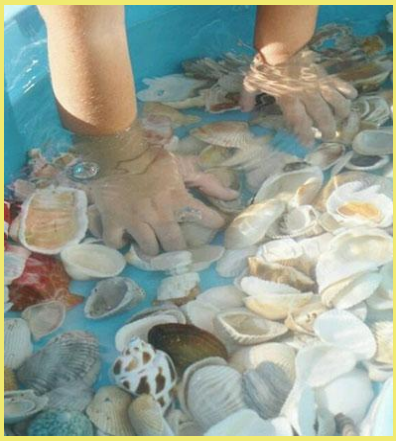
AIM:
Using nature elements to count and discover new geometrical shapes, learning about seashells and the animals they come from.

CLASS ORGANIZATION:
Individual or small groups

SUPPLIES:
A container of water, sea shells.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:



Step 3: As they finish, we will ask them to do the same with another seashell picking up the ones looking similar. We can repeat the process until every seashell is classified.
Step 4: As we have them ready, we will tell the students to make "underwater" paths using the seashells. Then we will start "drawing" paths inside the container alternating different types of seashells. This way, the base of the container will be filled up with paths under the water.

Look back!

We sit in a circle debating which difficulties we have found looking for similar seashells, which trait they have sought (colour, shape, size) and which other objects could we used to do this activity. We also learn where seashells come from and which animals use them to live inside.

Follow up!

- Use number cards and count as many shells as the number on the cards.
- Look at a smaller glass filled with water. Predict how many times would you have to fill in a cockle shell or an oyster to have the same amount of water. Now test your prediction!
- What do shells or our hands look like in water? Bigger, smaller, the same?
- Use the shells to create beautiful mosaics.

Seedling sorting

Get ready

For this activity you will need a vegetable garden or some raised garden beds. Make sure that seedlings you choose to be planted are suitable for the soil in the garden/beds and that you can water them regularly.

Prepare seedlings of at least 3 types. From our experience, it isbetter to use fast growing vegetables like lettuce, carrots, cellary, beans or cucumbers. We used tomatoes and by the time the fruit are red, the children are already on holiday and they cannot see the results of their work.

Go!

Mix the seedlings before you begin the lesson. Show the children the garden and explain what the seedlings are. Let them touch and smell them. Observe the shape of the leaves, stem and roots. Talk about the vegetable that is going to grow from them and the colour it will have. Introduce the coloured strings. The colour of the string should match the colour of the finite vegetable (for example use an orange string for carrots). Tie each piece of string at the ends to form a circle and put the circles on the ground.

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 20 min.

AIM:
Develop the space awareness and classification skills; recognize types of plants.

CLASS ORGANIZATION:
Small groups.

SUPPLIES:
Seedlings and string in 3-4 colours.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

The children take turns to sort the vegetables and place them in the circle that has the same colour with the vegetable.

We used tomato, celery and bell pepper seedlings so we had a red string circle for the tomatoes, a yellowish one for the celery and one with many colours for peppers because they can come in more than one colour.

After sorting, show the children how to plant them forming groups of seedlings.

Look back!

After planting, let the children present the groups of seeding, then water them. Encourage healthy eating and ask the children why they think vegetables are good for us. Make the emotional connection and ask the children how they felt to know that new life is growing from their work.

Follow up!

- Take care of the plants, water them regularly to see how they grow. You can regularly measure with non-standard units of measurement (hand, arm, sticks) for the children to compare the height of the plant.
- Continue to observe the differences among the seedlings.
- You can introduce other sorting criteria such as the shape of the leaves, their smell, the length of the plant.

Pinecone aircraft

Get ready

Like all plant parts, pine cones have a specific function in the plant world. The main function of a pine cone is to keep a pine tree's seeds safe.

Aside from their important role in nature, we can play Pine Cone Aircraft.

You guessed it right! All you need to find is some pine trees. Pick up three pine cones from the ground and find the best place to fly your pine cone aircrafts.

Choose a starting point to be your take off area and spot a landing area, too. We can fly our pine cone aircraft in three rounds from the same starting point.

Go!

You can choose three different sized pine cones.

In the first round, everyone throws their aircrafts simultaneously from the same starting point.

As soon as the pine cones have landed, players have to take into consideration the distance between the take-off area and the landing area by counting their footsteps.

Keep scores, in every round.

You can complete the game in three rounds.

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 20 min.

AIM:
To promote spatial awareness

CLASS ORGANIZATION:
Groups of 3-4 children

SUPPLIES:
Pine cones

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

Sitting in a circle, discuss with the children. Did they like the game? How far did they have the chance to fly their Pine Cone Aircraft? How important is the shape and the size of a Pine Cone? A big or a small Pine Cone can fly further? How is the shape of the pine-cone similar to a real aircraft? What else could we use as an aircraft?

Follow up!

- Find other activities with pine-cones under the names of: *Pine-cone sports, Cone Paints, The Autumn Owl.*

Feed the squirrels

Get ready!

See the image in the side table and prepare a worksheet that looks like this. Also make cut-outs of nuts, acorns and fir cones.

Split the class into 5 groups of 4 children.

Go!

The following riddle is read to the children:

"It runs in the forest,
with a basket in hand,
It goes home late - collects hazelnuts.
To have food,
because the cold winter is coming.
In the warm hollow, to eat sweetly."
Who is this? (The squirrel)

After guessing the riddle, children are told that several hungry squirrels should be fed. Their attention is focused on what food is suitable for squirrels and the task is set: "Each wants to eat a total of 10 pieces of a combined meniu of fir cones, acorns and walnuts. Can you find five different ways to combine the three types of food, so that the number is different for each squirrel? For example:

I squirrel - 3 fir cones + 2 acorns + 5 walnuts

II squirrel - 2 fir cones + 4 acorns + 4 walnuts

III squirrel – 1 fir cone + 7 acorns+ 2 walnuts

etc.

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 15 - 20 min.

AIM:
Understanding the composition of the number 10; Directing children's attention to the lifestyle and eating of the squirrel.

CLASS ORGANIZATION:
Whole class and groups of 4-5.

SUPPLIES:
Worksheet, nuts, acorns, fir cones.

OUTDOOR/INDOOR:

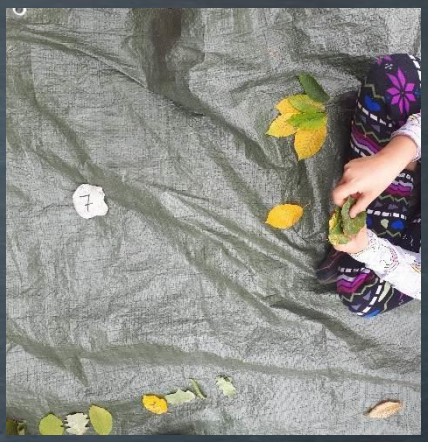
TEACHER/CHILD LED:

Look back!

Let the children work in groups and ask each team to present once they are done. Remember to count from left to right the contents of every basket. This way, children learn that the number 10 can be obtained in different ways, such as the sum of different numbers.

Follow up!

- Try a real-life version with real cones, walnuts and acorns and some recycled yoghurt or ice-cream baskets.
- Write numbers on rocks and ask the children to gather fallen leaves. Children pick a rock and practice decomposition by breaking down the number in 2 or 3 groups of leaves. Then change the rock and continue playing.



The hungry croc

Get ready

Each child should gather a type of material of his/ her choice: fallen leaves or rocks and two smaller sticks (as big and thick as their fingers). Make sure you also find 2 straight sticks as long as your arms.

Go!

Gather the children in a circle and tell them the story of the very hungry crocodile that tried to catch a fish, a bird and a lion cub in vain. By this time, it was very, very hungry. Take the two sticks in your hand and ask two children to stand by your left and right side. Choose one child that is taller and one that is shorter. "Now, I am the crocodile and I am very, very, VERY hungry. These is my big mouth (open arms with the sticks in your hands to make the mouth look bigger). Which one do you think I want to eat? The bigger or the smaller child?" Let children engage in the story, answer and then turn your mouth towards the bigger child. Make it funny but not too scary. Repeat the role-play, then ask one-two children to play the hungry croc. You can be food, too. Point out that the crocodile will always open the mouth where there is more (food). This is how we shape the mathematical

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 30 min.

AIM:
Practice comparing numbers and objects by size; practice the use of smaller/larger/equal mathematical symbols.

CLASS ORGANIZATION:
Small groups.

SUPPLIES:
Natural materials, number cards (optional).

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

sign for "bigger" which will always have the mouth open towards the bigger number/ bigger number of elements.

Ask the children to play "The hungry croc" game with numbers or with their own materials like in the pictures below. They will say: "The month is over this way because two is bigger than one." Monitor their work and make sure they understand what the sign means and how it is used.

Look back!

At the end of the lesson make a circle and have a feed-back on the story and the meaning of the sign. Appreciate the children's enthusiasm and involvement.

Follow up!

- The next lesson, remind them of the story of the hungry croc then compare two groups of things using the same sign or the sign equal. This time also say: "One is smaller than two".

Log resort

Get ready

There is so much to see and discover in wooded areas. Millions of different species, like insects, arachnids, molluscs, worms or myriapods come in all shapes and sizes.

You might be lucky enough to see some of these insects when you visit a park, a forest or your own garden.

Go!

Find a log pile. The logs that are older offer more shelters to bugs than younger ones. Try not to rip big parts of the bark because you will destroy many eggs this way. Take a closer look and count how many different mini-beasts you can find. If you find a spider or an insect count the legs, if you mind a myriapod like a centipede or millipede you can count the seconds it reaches from one point to the other. Write the most important numbers with sticks on the ground. Are they even or odd numbers? Compare the number of ants with the number of spiders that you can find on the log.

You can take pictures of all the log's pile residents and learn more things about them once you go back to school.

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: Up to the children's interest.

AIM:
Observe mini-beasts following nature's rhythm; invent stories and imagine how life flows in a log.

CLASS ORGANIZATION:
Groups of 3-4 children

SUPPLIES:
none

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

Finally, get the children around and ask them what they observed. A tree can be home to more than 600 other living beings. How many could you spot?, How many different mini-beasts could you find? How is the number of legs a spider has as compared to those of an insect? Trees, even when they fall down, are extremely important to the ecosystem of the forest. Discover more about your favourite insect and share everything with your friends. Are there more insect resorts in the forest?

Follow up!

- Discover more about insects with the help of *Bug Detective* by Maggie Li and *The big Book of Bugs* by Yuval Zommer.
- Take water samples from ponds and find insect larvae.
- Learn about the life-cycle of mini-beasts.

Maths with nature

Get ready

Children create groups of 4 and we equip them with the necessary materials (bag).

Each team should run around to look for as many pine cones or any other natural material they can find in abundance in the area (e.g. stones or wood) and place them in the bag we have given them. Their time is limited to 3 minutes, so they should hurry.

Go!

Once the time is up, each team fills in a table with questions about the pine cones they collected:

1. How many pine cones did you collect?
2. How many small pine cones did you collect?
3. How many big pine cones did you collect?
4. Find the pine cone with the largest diameter. How much is it?

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 45 min.

AIM:
Make measurements and work in groups.

CLASS ORGANIZATION:
Mixed ability groups

SUPPLIES:
Pencil, hard writing surface, paper, scales, measuring tapes, cloth bags.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

5. How much do all the pine cones weigh together?
6. How long a line can you make with them?
7. Group the pine cones into groups of (5). How many groups did you make?

Questions can be customized and adjusted according to the age of the group. For each question, children record two answers: 1. Estimates, that are based on guesses and the use of the senses, and 2. Findings, that is, to make a real measurement with appropriate instruments.

After the team has recorded the estimate, it moves on, to the actual measurement using mathematics, measuring tapes or scales depending on the question.

For counting we can encourage children to use different methods of grouping the materials (e.g. in scores of ten), while for measuring weight and length, we can also encourage measurement in smaller units.

Look back!

In a circle we discuss things like: Was the team's assessment close to the actual finding? Did the teams work together to make the measurements? Is it important to be able to estimate quantities and weights? Where and why?

Follow up!

- You can use customized worksheets to write the estimates and the findings, like real scientists.
- Find the pine cone with the largest diameter. How much is it?
- How much do all the pine cones weigh together?
- Group the pine cones into groups of (5). How many groups did you make?
- How long a line can you make with them?

Patterns

Get ready

We did this activity indoors but you can chose to do this activity outside, in nature, using a clearly delimited space.

For any activity you do, it is recommended to have a set of generally valid rules (for example: "When one speaks, the others listens!") and rules applied to each type of activity. In the case of this activity, we can tell the children that our expectations from them are: to use the materials for the game and not to put them in their mouth, nose or eyes etc.; to keep their shape intact because they will be used by other children as well, to share them friendly, respecting the needs of everyone to use them.

Previously, I prepared the necessary materials (walnuts, chestnuts, leaves, strings), making sure that they are clean and that I have the necessary quantity to carry out the activity.

Go!

I got the children's attention with a little man made of textile materials that had eyes, nose, hand etc. made of chestnuts and nuts. With the help of the little man, I show the children a new game – the logical strings, using objects from our classroom (wood pieces, lego etc.)

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 20 min.

AIM:
Concept of logical sequence, understanding of the given pattern and the reproduction of this with the same materials or others.

CLASS ORGANIZATION:
Small groups, individual

SUPPLIES:
Walnuts, chestnuts, different kinds of leaves, string

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

and I challenge them to play this game together using materials from the exploration centre, from our classroom. There, they will find the materials mentioned above.

I tell the children the main objectives of the activity: to be able to reproduce the teacher's pattern and to create at least 5 different logical sequences without any help. The best way to work this activity is in groups of 4-5 children.

Step 1: I propose a certain logical string model that we discuss: "What types of materials are used? What is the sequence?" Next, I ask the children to reproduce it.

Step 2: Each child is encouraged to create his/her own pattern, to name the used materials, to describe them and to make associations with other similar objects. I offer help at request or when I notice that further explanations are needed.

Look back!

Once each child was successful in creating his/her own logical string, we are back with our feed-back moment. I give the children the possibility to make connections between the logical patterns and examples found around (for example: the pattern of a fabric or the pattern used for planting seedlings). Patterns are not only beautiful but also very important: each textile pattern is suitable for certain types of clothing or the way the seedlings are planted will affect their chance of growing.

Finally, I let the children and their parents know of a challenge to send photos of patterns found outside the preschool.

Follow up!

- Associations with different shapes, letters and numbers https://www.teacherspayteachers.com/Product/Shapes-Patterns-Tracing-Fine-Motor-Skill-Development-2943866
- The presentation of artists who used patterns in their works https://orangeeaselart.com/orange-easel-blog/top-10-famous-artists-to-teach-preschoolers
- Listen to songs and imitate movements https://www.youtube.com/watch?v=MBjjxSx45-Q

Sticks and stones

Get ready

Make the worksheet two sided: on one side place a grid with the corresponding letters and numbers just like in the picture bellow, while in on the other side print the picture of a bare tree.

Also, in preparing the activity, take a walk with the children and gather seasonal natural elements.

Go!

First the teacher begins by explaining what a grid is and how positions in the grid can be read as a combination of letters and numbers. Demonstrate once or twice then invite the children to place different objects in certain cells in the grid (place the green leaf in the position A4, place the tree bark in the position E7).

Once the children understood, divide them into pairs. One of them draws an object in the grid than he tells his/her pair the position (place a rock at B2). If the position is correct, they take turns. Let them play several times and make sure you double check most of the positions. Also, provide explanations where necessary.

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 20 min.

AIM:
Develop visual intelligence through grids, understanding of a given position in the grid. Understand characteristics of seasons.

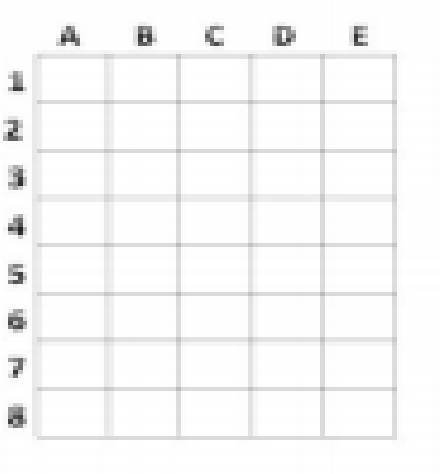
CLASS ORGANIZATION:
Small groups.

SUPPLIES:
Sheets with tables, basket with stones, leaves, leaves, sticks, shells and natural materials for the seasonal tree.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Next, tell them that with the natural elements gathered they will make a seasonal tree on the back of the page. What season is the tree in? Which are the seasons of the year? How will this tree change in the next seasons? When will this happen?



Look back!

Gather the children and remind them about the grid. Ask some of them to explain again how the grid works and how to place things in certain positions. Finally, celebrate the tree and a song and dance about the seasons.

Follow up!

- Play Sudoku using a 4x4 grid and natural elements.
- Start from the tree made with natural elements. Think what else could you draw on the picture to complete the landscape (a mushroom, a bird, flowers, grass, a hedgehog, a butterfly, clouds, raindrops, ant hill, ladybug, people etc.) Give a name and invent a story for the picture.

How big is your family?

Get ready

Reading and interpreting tables and grids is not easy for young children. However, here is an activity that can naturally introduce grids to younger learners. Begin by having a picture/ drawing or every child and having a pile of longer sticks as thick as your pointer. You will also need a tarp or a net if you work on the grass to ensure good visibility of the grid. Gather the children in a circle and tell them that we are going to have an activity on the family and we will need smaller sticks (as big as their hands) and 6 acorns for this activity. Have a short trip in the forest to gather the necessary materials.

Go!

As soon as you have the sticks and the acorns, let the children sit in a semi-circle and place the net/ tarp in front of them. Start talking about home and family members. Tell the children that today we are going to build a home for every child's family and the home will have as many "rooms" as the number of members in the family. Ask one child to come forward. Place a longer stick horizontally on the net and ask the child to place his/her photo at the bottom. Now, ask him to tell you the

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 40 min.

AIM:
Introducing the concepts of column and grid; counting; develop communication skills.

CLASS ORGANIZATION:
Groups of about 8-9 children

SUPPLIES:
Photos of every child, sticks, acorns or nuts, tarp/ net.

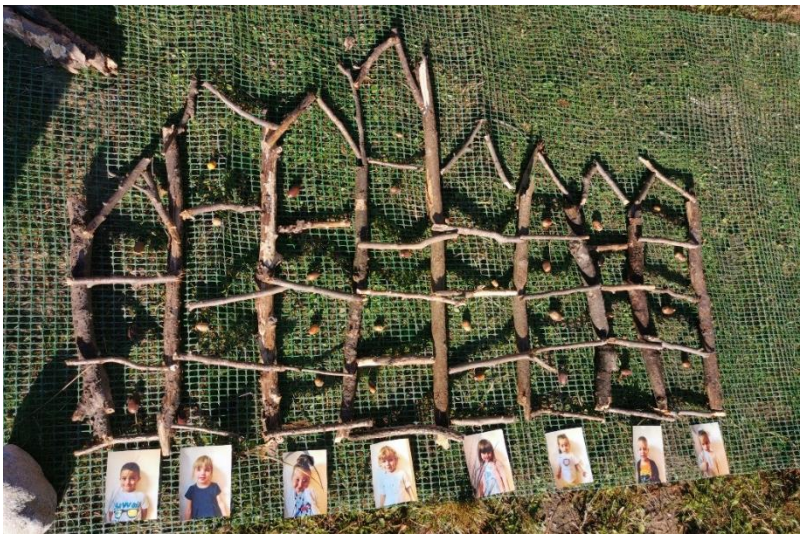
OUTDOOR/INDOOR:

TEACHER/CHILD LED:

members of his/ her family, in the meantime the child counts them using fingers. Once established the number of family members, the teacher helps the child build as many ”rooms” as family members and place an acorn for every member of the family (for 4 years old it is a good idea to count only the parents and the siblings, counting the grandparents would make this activity very long). At the end, the child can place a small roof on top of the his/her column to represent his home. Invite the other children to count and complete the grid one by one.

Look back!

As soon as the grid is completed, point out that the more people are there in the family, the higher the house. Who has the largest family? The section above each photo is called a column. Repeat *column*. How many column can you count? How many children can you count? Why are the numbers equal?



Follow up!

- You can continue with another lesson to explain the concept of rows.
- You can build a small grid of 3 rows per 3 columns, number the rows with 1,2,3 and name the columns with a, b, c. Gather rocks, acorns, nuts and other natural materials and ask the children to place them in the grid and read their place like this: the rock is at 1a, the acorn at 1b etc.

Right-left-in between

Get ready

Think and write down all the words that state orientation concerning a fixed point. In continuation, create a board of instructions and steps, which will be followed by children during game time.

The children should be working individually and independently. However, both the teacher and the students alike should be in a position to listen to each other.

Explain to the group that the teacher will point towards a fixed point in the woods and a fixed position where kids should stand in relation to the point. Keep in mind that you should always motivate them to stay focused on the activity.

Additionally, remember that this is a movement game. Hence, it should follow a particular rhythm to ensure that the children will enjoy it and have fun. Lastly, any other teachers should assist the students in functional issues and queries concerning the activity.

Go!

The coordinator of the game explains to the children how the game is played whilst emphasizing they need to move around

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 50 min.

AIM:
Understanding the meaning of right, left, between, front and back

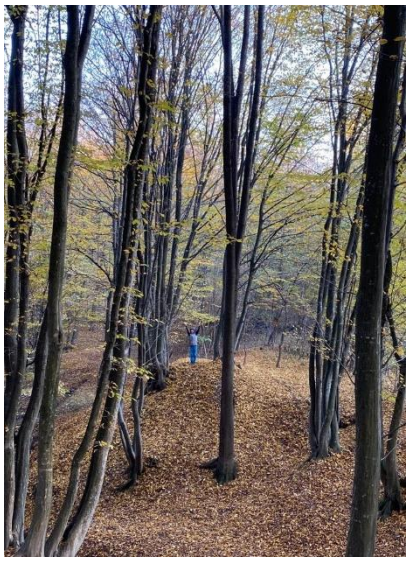
CLASS ORGANIZATION:
Individually or teams of 3-4 people

SUPPLIES:
None

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

individually. Everyone should be gathered in one place until the instructions are given by the coordinator, so as to ensure everyone has understood the game. For example, stand behind a bush or stand between two tall trees. Another idea is to lay down on the left side of a tree or find an interesting flower and stand in front of it. It is advisable to provide 10-12 instructions to ensure that students have acquired the knowledge you want to pass down to them.



Look back!

Gather your group to sit down in a circle. Were the instructions clear? Were they able to distinguish between left, right and in between? Was there something difficult for them? Make sure to motivate the kids to reflect and express their feelings and thoughts.

Follow up!

- Next, ask the children to lead the game.
- You can add two-three positions that they should follow simultaneously: lay down on the left side of an oak tree with your right leg bended and your arms under your head.

Geometric figures

Get ready

In class, coinciding with the unit of geometric figures in the subject of mathematics, the teacher explains the different shapes, properties and measures of the figures.

Go!

In one of the excursions into nature and after having spoken about geometric figures, students start to collect different natural materials such as stones, leaves, sticks, etc.

Once they have the materials needed, we divide the class into groups of four or five people and start making different types of figures on the floor.

Later, when the different figures are being formed, each group explains what type of geometrical shape has made, what material has used for or how many sides the figure has.

Different questions will be asked depending on the age or level of the students.

To finish, they join all the figures to form a giant mandala.

CURRICULAR LINKS:

AGE GROUP: 6-7

TIME: 20 min.

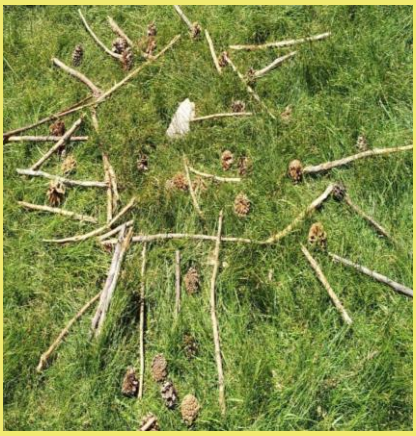
IM:
Space skills, geometric skills

CLASS ORGANIZATION:
Groups of four or five

SUPPLIES:
Stones, leaves, sticks

OUTDOOR/INDOOR:

TEACHER/CHILD LED:



Look back!

Sitting in a circle, we discuss how we have done the figures and the difficulties founded while making the mandalas.

Follow up!

- We can propose to students to create their own flower mandala which would be a wonderful creative way to play with math concepts for example: the symmetry. https://nurturestore.co.uk/flower-mandala-designs-for-children

Create shapes

Get ready

Children are divided into groups. One child from each group will be the leader. The rest form a circle and cover their eyes with a scarf.

We give each group a rope with the ends tied together and the group holds them, thus forming a circle.

The leader's role is to give commands to their team so that they can form different shapes, like: a circle, a square, a triangle and a rectangle, with their eyes closed.

Before we begin, we discuss with the children:

- What skills they believe the leader needs to possess to be able to direct them correctly and what words should they use. For example, the leader should be descriptive, calm, knowing the shapes and the names of the children, know how to use words such as right-left / front-back, indicate the number of steps needed, etc.
- What skills should the rest of the team that keeps their eyes closed have.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 30 min.

AIM:
Understand how shapes are created; use language to communicate positions and directions; develop leadership skills.

CLASS ORGANIZATION:
Mixed ability groups

SUPPLIES:
Ropes, scarves.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

E.g. to be focused, to listen, to ask when they don't understand etc.

Go!

The group chooses a leader and starts with the first shape! The leader can only give instructions orally without touching the rope or any of the children.
Once the first shape is completed, the game pauses for the participants to discuss what went well and what the group should improve based on the skills we discussed in the beginning. The game continues with the following shapes, changing the leader each time.

Look back!

In the end ask questions like: "Did the team work well? What should the leaders have done differently? When their eyes were blindfolded, what made it harder and easier for them?"

Follow up!

- This activity can be extended in the following way. Once the team has created the shape, they can lay the rope down on the ground and then, still with eyes closed, they can walk on the rope to determine what shape they have created. Similarly, they can walk on the ropes of other teams!

Doing math with fall

Get ready

Students are working into two teams. Each team receives a worksheet with a math exercise. The result of the exercise is a clue which indicates the number of the classroom where the students must search for the next task. Here, in these classrooms both teams will find an envelope with a message. The message introduces their next mission: to collect natural materials from outdoor and to construct with these materials a square and a rectangle.

Go!

Each team has 15 minutes to collect as many natural materials as possible and create the geometrical shape by using these materials in a creative way. When the shapes are ready, students are asked to measure the sides of the shapes and calculate perimeters and areas. The results of the measurements and calculations are recorded on a worksheet. After 30 minutes, the teams switch places and do the same thing with the other team's shapes. In the end, each team will have on the worksheet measurement data and calculation results for two squares and two rectangles. The final task is to compare these

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 60 min.

AIM:
Practice shapes and measurements; solve math exercises; develop creativity by apply mathematical skills in art.

CLASS ORGANIZATION:
Groups

SUPPLIES:
Envelopes and messages with tasks, worksheets, length measurement tools, natural materials such as sticks, dry leaves, stones, cones, nuts, acorns, dry flowers.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

records. What square has a bigger perimeter/ area? What rectangle? Are there any different results for the same shape? Ask them to explain why it is possible to obtain different results when they measure the same item. What are the sources of the errors? Highlight the length measure tools, the measurement procedure, the length measurement unit with submultiples (meter, decimeter centimeter, millimiter).

With the rest of the natural materials they gathered before, students are invited to create an autumn image using the squares and the rectangles as frames.

Look back!

The most challenging part were the math exercises and the messages with tasks. Because the messages were coded! The students were already familiar with this code where letters are replaced with shapes (square, rectangle, circle, oval, triangle) and numbers (0 to 9).

Follow up!

- Build a big maze using sticks and stones. Students will walk along the maze solving different tasks on the way. Can they go through the labyrinth blindfolded, following a classmate who cannot talk but is clapping all the way?
- Using geometrical shapes students can also practice fractions.
- Learn songs about shapes.

Overlapping shapes

Get ready

Ask every child to find a stick (not smaller than their hand and not bigger than their arm) and, together with other students, form the shape with the lowest number of sides (triangle).

Go!

Children will name the shapes (triangles) and compare and analyse them: "Are the shapes the same size? Are they in the same position? Are the sides of the triangles equal?" Still they are all triangles.

Now it's time for a little magic! Ask how many triangles they can count, then take the triangles and overlap them in different positions, thus creating one image with all the triangles. In groups of three, count how many triangles you can now see. Each group reports the number of triangles counted.

"Now, in your group of three, think and discuss the strategy you used in order to count the triangles. Each group will tell about their strategy to count the shapes (the most common answers are: 1. start with the big triangles and count to the smallest, 2. count from small to large, or 3. start with the

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 90 min.

AIM:
Develop spatial concepts and ability to use them, learning about shapes, position and direction and understand their position in space (above, under, next to).

CLASS ORGANIZATION:
Groups

SUPPLIES:
Sticks

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

original shapes and count the shapes formed by these, then count the other shapes formed around.)

It's time to understand more about the overlapping shapes. Each group of three children think of a number from 1-15 and pick two sticks to make their own combinations to get to the number they set as a group. During our class, some of the pupils wanted to make squares. Go for it! Monitoring their conversations, one could see they understand that by adding one stick, they can at least double the number of triangles or squares.

Groups take turns to present their shapes. Let the members of the other groups count the triangles / squares in each of the formed shapes. One member of these teams will come and whisper in your ear the number. If it is not correct, shake your head and they will count again. When all groups have the correct counting, discuss the strategy they used when the counting was successful. In practice, different strategies work for different situations.

Look back!

In the end, have a final reflection on learnt lessons and discuss the relevance of such an exercise in everyday life (for example, arranging furniture in a room, so that you can have a lot of space to move around, or the way an architect can think the structure of a building with multiple storeys).

Follow up!

- In the classroom, continue practicing with rulers and pencils. You can use coloring pencils to colour each square/ triangle a different colour.

Geometry in the woods

Get ready

Prior to the activity, make sure to create a paper with written instructions for your students on the activity. The aim of the activity is for them to understand geometrical theorems on parallel lines and transverse sections by using natural elements from the forest. Find a large outdoor area with sticks and other useful materials so that the students can create geometrical shapes.

The instruction sheet you will create needs to have 4-5 sentences with geometrical facts which students should verify or reject (find if they are right or wrongly stated). For example, "in order to shape one square and three triangles we need at least 7 straight sections" or "in order to form 4 angles, we need at least 3 straight lines".

The statements placed on the instruction sheet should be written in a clearly structured way for the students to understand and act individually without the teacher's assistance. Make sure to explain to the students that their answers should be written in full sentences so that

CURRICULAR LINKS:

AGE GROUP: 9+

TIME: 30 min.

AIM:
Understand geometrical theorems on parallel lines and transverse sections, teamwork skill development.

CLASS ORGANIZATION:
Small groups

SUPPLIES:
Scissors, twine, rulers, pen and paper, photographic camera.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

they make sense and with readable handwriting for review and correction.
Finally, the rest of your colleagues should participate in the activity and assist the students with anything needed.

Go!

The coordinator of the activity gathers the students in a circle. Depending on the size of your whole group, divide your students in teams of 3-4 people. Each team should have twine, pen and paper and a paper with instructions on the activity.
The students scatter around the area and collect natural elements, which will be used in the process of verification. As teachers, advise the students to collect wooden sticks and instruct them along the activity on how they should use these to check the statements. Your students should work in teams in order to find if this statement is right or wrong and prove it by using natural materials. Once they verify why the statement is right or wrong, they need to write down on a piece of paper their interpretation and explanation of why it is true or false. Once this has been done, they should take pictures of the process followed as evidence. The ultimate aim of this photographic collection is to create a presentation for the whole class.

Look back!

Gather your group in a circle: Discuss about the activity and reflect on how everything went. Did everyone work together well? Was there good communication within the groups? Was there anything challenging for them? What difficulties did they face? Allow the students to express their feelings and thoughts on the activity.

Follow up!

- For older students, find inspiration in the lesson: *Build and measure.*

Maths applied in parachute testing

Get ready

We've made our first parachutes, played a lot and had fun. Now it is time to approach the problem from a different perspective. What shape has our first parachute got? Yes, it's a square. Are there parachutes with other shapes? Yes, they are. So?

Go!

Can we make parachutes with a different shape? A bigger one? A smaller one? Does it fly?

Using the instruction from the activity *Let's make a parachute* make some different parachutes. This time the parachute veils will be round/circle or rectangular. It is the right time to practice shapes and length measurements, to calculate perimeters and areas. Students will solve a number of such problems. The units of measurement will be also practiced (m, cm, mm, m2, cm2, mm2)

Step 1. Each student makes a parachute using a tissue paper. The tissue paper is a square. Ask them to measure the side of the square and to record the result in the worksheet. The students will calculate the perimeter of the veil and the area (cm, cm_2).

CURRICULAR LINKS:

AGE GROUP: 9+

TIME: 50 min.

AIM:
Trace geometric shapes (square, rectangle, circle) using rulers, math lined paper, compass; measure the sides of the square/ rectangle and the radius of the circle; calculate the perimeter and area of geometric figures indicating the units of measurement.

CLASS ORGANIZATION:
Groups, whole class, individual

SUPPLIES:
Materials for parachute veils, compass, rulers, scissors, worksheets to record data, pencils, small objects/toys

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Step 2. Each student makes a second parachute from the same kind of tissue paper. The veil will have now a different shape with the length equal with the square side but the width shorter with 2-3cm. Ask them to calculate the perimeter and area of this veil. What shape is the new one?

Step 3. Test the parachutes. Which one flies best?

Step 4. Solve some challenging tasks like:

A veil has a rectangular shape with length=90cm. The area of the veil is 3600cm. What is the width of the veil?

Look back!

Younger students can test different types of parachutes without making measurements or calculating perimeters and surfaces.

With this class, we practiced tracing shapes, measuring the sides of squares and rectangles, the radius of the circles as well as calculating the perimeter and area for squares, rectangles and circles. Yet, the most interesting part of the activity was the testing of the parachutes! Remind your students that when we test a prototype, in this case a parachute, we change only one variable at a time. Example. To be tested: which of the parachutes is heading slower towards the ground?

1. The two parachutes have the same size, same shape (round) but they are built from different materials (paper and eco-bag).
2. The two parachutes are built from the same material but they have different shapes, one is round and the other is square.

Follow up!

- Challenge your students to make a safe parachute for Humpty-Dumpty. What characteristics should a parachute have in order to help the most famous egg to land safely on the ground? What other extra safety measures could be taken on the ground?
- See the activities *Let's make a parachute* and *Nature's helicopters.*

Representing natural numbers

Get ready

For this activity every child will need 9 acorns, 9 sticks (not bigger than their pinkies), 9 leaves and 9 smaller stones. You will also need a smaller whiteboard and a marker or a clipboard, paper and pencil.

Begin with the rules for this activity: "I learn from my mistakes" and "I raise my hand to talk". Then let the pupils know the aim and the success criteria: write and read numbers correctly with natural loose parts.

Go!

Ask the students to draw a rectangle on the upper part of the whiteboard (size 10/4 cm). Here, they will write the numbers. The rest of the whiteboard will be devided into four with three vertical lines and each column will bear a value of the digits: units, tens and thousands.

Then, the teacher asks the students to find a comformatable place within the hearing distance where they can work individually.

The teacher:

CURRICULAR LINKS:

AGE GROUP: 9+

TIME: 50 min.

AIM:
Representing numbers up to 10000; writing numbers that comply with specified criteria.

CLASS ORGANIZATION:
Whole class and individual.

SUPPLIES:
Small whiteboard and a marker or a clipboard, paper and pencil. Loose parts: acorns, sticks, leaves and stones. Wipes for cleaning the boards.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

1. Says numbers up to 10 000 that students write with natural loose parts. They will complete each column with one type of natural material matching the number of items with the required digits.
2. The teacher will ask the students to represent with natural materials:

- The next term after 7659;
- The term before 2970;
- Numbers of four different digits made of the numbers 2,4,6 and 9;
- The even number bigger than 2145 and smaller than 2147;
- The largest four digit even number;
- A four digit number with consecutive digits; (ascending and descending order)
- The largest four digit number that is smaller than the biggest number made of four different digits.

Once some or all these exercises were done individually and checked with the whole class, it is the right time for the students to try similar challenges.

Look back!

At the end of the lesson, the students will form pairs and will talk about difficulties met and successes. If necessary, friends can help each other in the future to better understand number formation. "How do we use the reading and writing of numbers in everyday life?" The lesson ends with the teacher's conclusion and recommandations.

Follow up!

- According to the age of the students you can use more or less types of materials matching the numbers leant.

Play with numbers

Get ready

Make a number formation kit as follows: you will need boards, one for each class of numbers, with the size approx. 30 cm long and 15 cm wide, thick enough so that the class and the orders of each class can be written. On each board, make three holes for each order in a class, and stick in thin sticks (e.g. barbecue sticks). Drill chestnuts to put on the sticks, representing the number of units, tens or hundreds of a class. Depending on the year of study, you can use one (class of units) or more boards (class of thousands, class of millions, class of billion).

Go!

Show the kit to the students and give them time to explore / manipulate it. Ask them what they think it is, what it might be used for, if it resembles something they know. Together with the students, explore different ways of using the kit, and guide the ideas toward the goal of the lesson.

Let students know that they will learn how to make natural numbers with one or more classes using this kit.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 60 min.

AIM:
Formation of natural numbers; understanding the concept of classes, orders, hundreds, tens, units

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Boards for each class of numbers, thin sticks (for barbecues), chestnuts drilled (9 per order).

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

You will demonstrate how the unit works. Different numbers of chestnuts will be placed on the three sticks, specifying to the students the name of each order and the number of chestnuts introduced on each order (stick). You will read the number that was formed.

Ask students to work in pairs with one of them to say a number and the other forming it on the kit.

To correlate the theoretical knowledge with the newly acquired practical knowledge, and to increase the degree of difficulty, ask the students to form numbers for which simultaneous conditions are given (e.g. to be an even number, the number of hundreds to be two times bigger than the number of units, the number of tens to be the largest odd number etc.).

Look back!

Ask students why they think it is important to know the formation of natural numbers and how this helps them in real life. Guide the questions and answers to concrete situations of life (e.g. reading a price, comparing two sizes / quantities, performing fast mathematical calculations, etc.).

Follow up!

- As part of the art lessons, model plasticine / clay balls, leave them to dry in toothpicks and use later them as units.
- Each student can make a small kit of plasticine / clay with toothpicks stuck in a cork board or foam .

Inequality under a tree!

Get ready

You need ten fabric pieces with empty circles! Each piece has two circles, with space between them, either painted or constructed by using other materials. Place each fabric at different places all over the area you are going to play in away from each other. In each circle put natural elements in several quantities in order to create inequality or equality between the circle totals.

Encourage them to search for the fabric pieces, observe the elements, count them and find if there is an inequality or equality between the two circles. "How many acorns are into the circles? Can you count them? Are they equal or not? Do you remember which symbol you have to use?"

Make teams of two with the children and give each team a piece of paper and a pencil in order to write the results of each operation.

Go!

The children are trying to find ten fabric pieces in ten different directions all over the place. Each time they find a piece, they

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 30 min.

AIM:
Understand the concept of inequality in Mathematics.

CLASS ORGANIZATION:
Pairs.

SUPPLIES:
Ten fabric pieces with two circles each, natural elements (little stones, wooden sticks, acorns etc.) to create the inequalities, small pieces of paper and pencils to write.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

have to count how many natural elements are in each circle, then they draw the two circles on their paper and write in each circle the number of the elements they counted. Finally, they have to write the symbol of the inequality between the two circles. They have to do the same process totally ten times as the ten fabric pieces.

Look back!

Discuss the result in each team. Finally, in a circle discuss: "Was it something difficult in the activity? Did they cooperate efficiently? Could they easily remember the symbol?" Help them to organize their ideas, share their thoughts and express their feelings.

Follow up!

- Use the same pieces of fabric like this: leave the circles empty and write the mathematical sign for equality/ inequality with sticks. Let the children gather natural elements to complete the circles so that the equality/ inequality is correct. Each pair gets to do a piece of fabric then all the children discuss the results.

Estimate seed number

Get ready

When teaching Maths, we are always searching for a way to attract students' attention and make numbers concrete.

Children love to celebrate Halloween and are usually eager to join in any of the arts and crafts you might propose that might be connected to this tradition. Pupils get very excited when they see the big orange pumpkin being brought to class. Get organized to prepare a real Jack O' Lantern in class. Depending upon the number of pupils in your class and the size of the pumpkins, you might consider carving more than two pumpkins.

Go!

Organize pupils in groups of three and four. Let pupils figure out what will be the safest way to carve the pumpkin. Is it wise for them to handle a sharp knife and do the carving? What could be the safe operations pupils could carry out without risking cutting themselves (i.e. pupils could decide one of them can draw the eyes, nose and mouth of the pumpkin). Let the children figure out that they can be directly involved in the emptying of the pumpkin, and in the cleaning of the seeds.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 90 min.

AIM:
Logic development, manual skills, creativity, ability to give a realistic estimate, discrimination between an estimated data and a real data.

CLASS ORGANIZATION:
Groups, whole class.

SUPPLIES:
At least two pumpkins, knife, spoon, plate for pumpkin seeds, towel rolls, paper sheets, paper to record data and pens.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

While carving pumpkins, teacher invites students to ask questions that are connected to numbers. Students might wonder how many seeds a pumpkin contains. "Do all pumpkins contain the same number of pumpkin seeds? Will this number be even or odd?" Invite the children to write down all the questions.

Let the children estimate how many seeds the pumpkin contains and let them guess answers to other questions. Then, run a survey collecting all the data for each answer. You might consider drawing histograms. Once data have being registered, proceed to distribute the seeds to each group of children, their task will be to find the easiest way to count all the seeds.

Children might decide to count the seeds by one, two, three, five or ten... When each group has counted all seeds, add up all numbers of seeds of Pumpkin A, and then, proceed to adding up all seeds of pumpkin B. Let the children draw considerations, and conclusions about the differences between the estimated data that have been registered with the histograms, and the real data. "Did any pupil manage to estimate a total number of seeds that is close to the actual number of seeds that the pumpkin contains? Do two pumpkins contain the same number of seeds? Do big pumpkins contain more seeds, than small ones? What is the fastest way to count the pumpkin seeds?" Let each group evaluate the different counting strategies.

Look back!

Through this activity children should be able to grasp the difference between what we might guess, and estimate, and the actual real data. Being able to produce a good number estimate is a very useful skill to have in daily life, so, sooner our children will

develop this skill, the better they will fare. Understanding the difference between a close estimate and an unrealistic guess, is also very important. Children who guessed that a pumpkin contains one million seeds, have the opportunity to adjust their estimate, and improve their counting strategies.

Follow up!

- In spring, you can try estimating the number of seeds in a dandelion clock. You could use number grids and place each seed to the next number.
- With younger students you can estimate the number of petals on a flower (a narcissus for example) or the number of seeds in smaller fruit like apples, pears or oranges.

Acacia pods' Maths

Get ready!

While hiking up and down the hills that surrounds the southern part of our town, or strolling along the river path which crosses our district, our pupils have the opportunity to learn about our environment spontaneous flora. Realizing how generous nature is towards human beings should be a major objective of any school trip in the open air. Besides cleaning the air we breathe, spreading good scents, improving our moods with beauty, and offering us delicious fruits, plants offer fantastic and simple tools that can be very effective to train our minds in math calculations.

Go!

1. Trip in Nature: the best introduction to this activity is a nice walk with the whole class in a park next to your town in autumn, winter or early spring. This is the period when you can find seeds, nuts, and acacia pods!

Inquire whether your pupils can discriminate among the typical trees and their seeds or nuts of your living area. In our case we check whether they can

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 120 min. for the trip; 45 min. in class.

AIM:
Developing the ability to discriminate among tree seeds, knowledge of tree plant component and seed pod component; observation skills, calculating skills, ability to sum and subtract mentally.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Basket, or bag to collect the branches with seed pods

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

discriminate among: oaks, walnuts, poplars, lindens, beech trees, and acacia trees. Ask your students to point at the different trees, or seeds to see if they can actually recognize them, then pick up a branch of acacia and show to them what the object of the search is.

2. In groups of three or four encourage your children to collect acacia pods. Ask them to collect all kinds of pods, closed ones, and open ones, tell them that the pods are our treasure and that will be used to organize a nice game later in class. Children usually love to collect natural items, and they will have a good time filling up their basket or bag with the pods.

3. When the walk is over, in circle have a nice conversation about the trees they were able to spot and identify and the seeds and pods they have been able to collect. Ask children how they think the acacia pods could be used in class. Different proposals on how to use the seeds and pods should be analysed and discussed with care. Some students might propose to plant the seeds, others to taste them or cook them, or maybe ground the seeds to obtain flour and see how it tastes, maybe mix the flour with water to see if a paint can be obtained. Evaluate all the proposal carefully, and encourage your pupils to do a research about the acacia tree and its seeds.

Class Activity: distribute the acacia pods to all the groups of children and invite them to carefully observe them and think about math operations that could be carried out with them.

Invite your children to ask questions such as: "How many seeds are there in this pod? How many empty spaces? Do all pods have the same number of seeds and empty

spaces? Yes, no, why not? What happened to the seeds? This pod has six seeds and ten seed beds, how many seeds are missing?

In this pod there are 16 empty spaces and only two seeds left, how many fell off? Here there are three pods but only two seeds left, count the empty spaces.

Each group of pupils should create their own mental calculation quiz, and test each other's ability. Some children will be faster than others in figuring out the numbers, remind all pupils the rule: we can count with our eyes, our minds and our fingers. Allow a minimum of thirty minutes for the testing of the games. Pupils may then decide to write down the problems and the operation.

Look back!

Acacia seeds and pods are perfect to practice any kind of operations really, adding up, subtracting, but also multiplying and dividing. You might decide to store the precious Acacia pods in a basket in the classroom corner allowing your students to play with them as they wish during free time, and break time. Make sure your pupils understand it is not a good idea to swallow the Acacia seeds. Acacia pods and seeds could of course be used to create nice mandalas and art works too.

Follow up!

- Plant seeds can be a wonderful resources for a variety of different math activity to exercise the ability: to calculate, to classify shapes, estimate numbers etc.
- Seeds can also be used to observe, examine and experiment in Science.

Maths nature school

Get ready!

Divide the children into small groups. Each of them receives from the teacher pre-prepared natural materials.

Before setting a task for the children, briefly describe the natural materials, explaining the purpose for those that the kids do not recognize.

Following the guidance of the teacher, the children are invited to group the materials by type and number by placing the corresponding number.

Go!

Each of the groups is given an oral calculation task. For example: 3 rose hips + 2 are equal to how many. The children use the objects placed in front of them to visually represent the answer. They also give orally the correct answer. Competitiveness between small groups can also be added.

The teacher sets a new challenge. Each of the groups needs to put a comparison sign between specific objects. For example: Compare the mussels to the flowers?

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 40 min.

AIM:
Exercising on improving addition and subtraction actions, as well as comparison of numbers up to 5 using visual materials; developing the ability to use natural materials in a creative and practical way; improving communication skills.

CLASS ORGANIZATION:
In small groups

SUPPLIES:
Flat stones, mussels, cones, dried peppers, dried mushrooms, flowers, chestnuts, rose hips, permanent marker, any other natural materials

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

Math can be fun, easy and interesting with the help of natural materials. Through exercises, the knowledge of addition, subtraction and comparison is strengthened. By observing and analysing the natural elements at the beginning, children learn more about the daily use of selected natural materials: herbs, fruits, etc.

Follow up!

- Songs on comparing numbers and quantities:
  https://www.youtube.com/watch?v=3qisu9NF1_0
  https://www.youtube.com/watch?v=rLZbniMGAVA

Fraction walls

Get ready

In their groups, ask the children to find half of their group and organise themselves. "How many are in each half?" If the children are secure with the concept of half as a quantity, ask the children to try to find a quarter of their group. How many children make up a quarter? What do they notice about the relationship between a half and a quarter?" (A quarter is half of a half or two quarters equals a half).

Go!

Explain to the children that they are going to create fraction walls, which will enable us to observe the whole, the halves and the quarters. (See sample photo). This wall can then be used to both demonstrate their learning and as a teaching aid for other children.

Ask the learners to collect 3 different types of natural resources (brown leaves, green leaves, twigs) of roughly equal amount and some larger sticks.

First, make a frame with the sticks! Ask the children to point to the inside area. Ask them to show what the whole is. Then ask the children to find half and mark this with sticks

CURRICULAR LINKS:

AGE GROUP: 9+

TIME: 30 - 45 min.

AIM:
To recognise, find and name the whole, half and quarter of a shape.

CLASS ORGANIZATION:
Whole class or groups + individual practice

SUPPLIES:
Sticks/twigs, rocks, leaves and Other natural resources that are seasonally available.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

and then use a different natural resource to fill in the half. Repeat this process for finding quarters. How can they further divide the whole? Give them labels with fractions (¼½¾ and others) to mark the different parts.

Look back!

Discuss with the children their observations. The lesson is successful if they can explain at least the following: two halves are equal in amount to a whole. Four quarters are of equal amount to a whole.

Follow up!

- Take photographs of the fraction walls and make a big poster. Display the poster in the classroom to be further used in teaching and understanding fractions.

The frog route game

Get ready

"During this time of the year, frogs like to engage in frog route races. For this reason, they create routes and compete in smaller groups by running from a starting point towards an ending point in their unique and weird frog ways". To prepare, create a problem/riddle, which will ask the children of your group to create a route of 4-5 meters long (depending on the available space). The children need to set a starting and end point as well for this. Additionally, explain to them that they need to complete the task using only the rope given to them as a measurement tool.

The students should be divided into teams of 3-4 people. Every team gets a rope and tries to find the solution of the problem with an ultimate aim to create the frog route.

Make sure to motivate the students to find strategies that will help them find the solutions to the problems. For instance, how is the final route going to be created? How will the 1 meter rope help me? How will the starting and ending point be clear in each route?

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 30 min.

AIM:
Reinforce the use of measurements and calculations, through games.

CLASS ORGANIZATION:
Teams of 3-4 people

SUPPLIES:
1 meter rope per team

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Additionally, the other teachers who are there facilitate the children with strategies and techniques in order to find possible solutions.

Go!

The coordinator of the game divides the teams and hands out the ropes. In continuation, they narrate with theatricality the story of frog route races and inform the children on how they should create the routes in order to start the game. Furthermore, they need to make them aware of the desirable distance of the route and hand out the rope to each team. The game starts when all of the teams resolve the problem and the solutions get verified. All teams need to stand behind the starting point of their route, while the coordinator explains the way the frogs should race to the end. For instance, jumping with high knees, running on one foot, moving forwards on jumping squats etc. Every time one of the teams finishes (meaning that all of the team members reach the ending point one by one) they should shout twice "Ribbit". Once all of the teams race to the end of their route, the children should go back to the starting point, whilst the coordinator asks them to complete the route using different ways to move forwards from the ones they have already used. Hence, the races should be repeated 4 times, using 4 different ways to move forwards and race to the end.

Look back!

Gather your group in a circle: start with a conversation on the strategies that children used in order to create the route. "Were they effective and functional? Did the team communicate well? Could they create it easily? Did they face any difficulties?" Let the children discuss and express their feelings and thoughts on the activity.

Follow up!

- Make a measuring kit consisting of several pieces of string of different colours measuring 10cm, 20cm, 50cm and 100cm. Use the kit for measuring and calculating length, height, width of everyday objects. First, make an educated guess, then measure with the strings and finally, measure with a standardized tool/device. Compare the three results and draw a conclusion.

Open your wings!

Get ready

Judging after their open wings' length, in Romania, the biggest bird is the *pelican* (*Pelecanus onocrotalus*, the wingspan between 270-320 cm) and the smallest bird is the *auşel* (Regulus regulus, the wingspan between 14-17 cm).

How does your "wingspan" compare with that of some of the birds from your country?

Using selected video files reinforce knowledge related to birds, birds' wings and flight.

It is the opportunity to discuss the characteristics of the feathers and about how birds take care of them. Present some known birds and give data about the wingspan of their wings. Compare the wingspan with the length of the bird's body. "Which bird has the longest/shortest wingspan? If you were a bird how long would your wingspan be? Is your wingspan longer than hawk's, or stark's?"

Go!

Use the string to measure your own "wingspan." With one hand, hold onto the end of the string at your fingertips. Grab the string with the fingertips of your other hand.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 50 min.

AIM:
Practice measurements using both standard and nonstandard units; records and analyses the results; draw and colour wings model/ feathers adding details specific to some birds.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Coloured string, measuring tape or ruler, pencils, white craft paper (roll of, or large sheets), crayons, erasers, sharpeners, coloured pencils, fibre pens.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Stretch out your arms, holding the string tightly. Have a classmate mark the length of the string between your fingertips with a crayon. Put the string on the floor or ground, stretch it out, and measure the length of string from its end to the crayon mark. This would be your wingspan, if you were a bird.

Now you can make a drawing of your own "wings."

Spread out the roll of white craft paper and use the yardstick or measuring tape to mark the endpoints of your wingspan based on the measurement you just took. Draw in feathers where your fingertips would be, and draw the rest of the wings toward the center, where a bird body would be. "Do you have the wingspan

of an eagle? A swan? How many centimeters are between the wingspan of your wings and those of the stork/ pelican/ sparrow? Convert the data in m, cm and mm".

Look back!

Watch videos that capture the flight of birds. Some birds make characteristics wing noises while others are silent. Who, why and how?

A bird is the fastest living thing on Earth- the peregrine falcon. How is he doing this? Watch a video file; it is impressive!

Follow up!

- See activities like *Bird Flight* and *What makes a bird, a bird*?

Useful links:

- http://pasaridinromania.sor.ro/specii/
- https://camarasdelumini.wordpress.com/2012/03/01/cele-mai-numeroase-100-specii-de-pasari-din-romania/
- https://www.descopera.ro/natura/8116655-cele-mai-mici-pasarele-din-romania
- https://www.youtube.com/watch?v=d_FEaFgJyfA pigeon, hawk and owl flight
- https://www.youtube.com/watch?v=a68fIQzaDBY What Makes Owls So Quiet and So Deadly?
- https://www.youtube.com/watch?v=Im0CtcEZV4E Deep Look about peregrine falcon
- https://video.nationalgeographic.com/video/worlds-deadliest/00000144-0a2b-d3cb-a96c-7b2fbabd0000
- https://www.youtube.com/watch?v=BfEboMmwAMw about pelicans
- https://www.youtube.com/watch?v=J6q5msSRc6g Bird Bath & Sun Flowers

Nature in centimetres

Get ready

In this activity children have to learn how to use the ruler, how to count, starting from point 0, and how to place objects in an order, from the largest to the smallest or vice versa. Children operate independently and individually, following a series of instructions. They have to find 5 different objects from nature (wood, stones, fallen leaves, etc.) of specific centimetres and after finding them they have to sit down forming a circle and place the objects in an order from the largest to the smallest.

The teacher encourages the children to try and find a solution to the problems that arise. They use prompts like: "Remember where we put the 0, when we count with a ruler. If an object of nature that you found is not appropriate for counting, what can you do?"

Any extra teachers present in the activity may help children to find solutions to the problems and solve functional issues that might arise.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 60 min.

AIM:
Learn to use a ruler and to put thing in an order from the biggest to the smallest.

CLASS ORGANIZATION:
Individual practice.

SUPPLIES:
Soft ruler or bracelet ruler.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Go!

The game coordinator explains to the children how the game is played and that they move individually. He tells them exactly which five items they need to find, and then explains to them that once they find them, they have to sit in a circle and place the items in front of them in a scale, from the largest to the smallest (E.g. they found a 10cm piece of wood, two pieces of stones of 6cm and 8cm, a 4cm long acorn and a 5cm long leaf). Finally, the teacher puts special wrist band rulers on the students' hands or alternatively gives them simple soft rulers so they can do the measurements on the spot.

Look back!

Whole team makes a circle. They discuss the game. Did they enjoy it? Could they easily measure objects? Did they manage to make the order from the largest to the smallest? Did something get in their way? Let the children express their feelings and thoughts.

Follow up!

- This activity can become more complicated if children are asked to use natural items to create shapes of specific sizes. For example: "Make a square with 20 centimeters sides using stones".

Measuring shadows

Get ready

Shadows are perfect to attract children's attention; you can use them to introduce a variety of curricular subjects in Maths and Science. Ask children to form a circle and use these questions to introduce the conversation:

"What are shadows? How can we create them? How can we see shadows? Can we see shadows indoor? Are you familiar with Chinese shadows? What can we learn observing shadows?"

After collecting some information from the class about this topic, let pupils freely observe shadows outside. You can also suggest them to bring pencil and paper and see if they can draw the profile of shadows that they spot in the garden. Create teams of two or three children

Go!

After the introductory phase split up the class in pairs. Each team observes the shadow created by the body of their companion attentively. "What is the ideal way to observe our own shadow?" Invite children to collect the height measurements of their teammate.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 90 min.

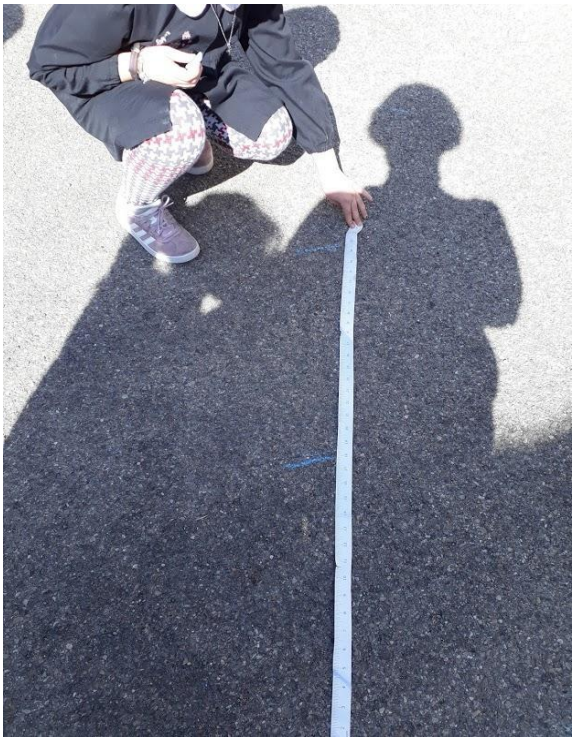
AIM:
Observe light and shadows phenomena, develop manual and measuring skills.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Pencil, white sheet of paper of different dimension, sticks and measuring tap, chalk or stones.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:



Decide whether to give them precise instructions on how to carry out the task, marking the tip of the head with a chalk or with a stone if you are observing shadows on a grass surface; or whether to leave this task open to experimenting. Each team collect height measurements of all participants. Remind pupils to use at least two measuring systems, first a stick that has been distributed to them, and then a measuring tape.
As a follow up activity, children will greatly enjoy observing and measuring the heights of the teacher's shadow.

Look back!

Invite children to analyse the data they collected, compare their measurements and draw conclusions. If children enjoyed the activity you could suggest measuring the heights of a tree which stands on the school courtyard. Measurements of the heights of the tree shadow vary during the day and during the season further considerations can be drawn about these data.

Follow up!

- Check out these sites to discover the world of Chinese shadows:
  https://www.youtube.com/watch?v=1cKL3E3h2bE
  https://www.youtube.com/watch?v=NZ5MJqB9myA
  https://www.youtube.com/watch?v=UVpqZMLRIiQ

m, dm, cm

Get ready!

The teacher prepares worksheets with various tasks and questions. The children bring measuring tools and gather the same number of autumn leaves.

Go!

Students are asked: "With the help of which measuring units we measure the length? Which is the smallest unit? And what about the biggest? How many centimeters equal 1 dm or 1 m? How many rulers with length of 1 dm can we put on the length of 1 m?"

In this class we are going to apply what we know about the measurement of lengths not inside the classroom but outside, in nature. We are also going to measure the length of natural objects.

The students are separated into 4 groups and each group receives a worksheet with various tasks about measurement.

Examples of such tasks:

1. Measure how thick the trunk of the linden tree is. How many leaves do you need to encircle this trunk……. Find another species of tree and measure its thickness in cm and number of

CURRICULAR LINKS:

AGE GROUP: 8+

TIME: 35 min.

AIM:
Apply the knowledge of measuring the length of objects in nature.

CLASS ORGANIZATION:
The class is divided into 4 groups of 6 kids each

SUPPLIES:
Plastic and metal tape measures
Autumn leaves

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

leaves…… Compare the circumference of the two trees……..

2. Measure the height of the tallest and the shortest student among you.

Tallest – ……..- …….cm

Shortest – ……..- …….cm

3. The tallest bush in the school yard is …….cm.

4. The tallest grass is …….cm.

5. The table in the yard is…….cm long and…….cm wide.

6. The bench in the yard is …….cm long and …….cm wide.

7. Measure a length of 3m, 5m and 10m.

8. Make a standing long jump. The longest jump is…….. - …….cm.

Look back!

Students gather in a circle and discuss: What do we use the measuring units meter, decimeter and centimeter for? In addition to using them in the classroom where else can we use them? What was most difficult to be measured? What was the measurement that astonished you?

Follow up!

- After the lesson students may be asked to write about the day outside and compare the Math lesson outside with an ordinary one.
- Students can make a map of the school yard with natural materials using the data obtained during the lesson.

Measure and build

Get ready!

As a follow up activity to *Building Geometric shapes with nature*, ask children how they could form geometric shapes in the school garden. Collect all possible answers before suggesting the game. Outdoor pupils should be divided in pairs, and pick a name for their team. Distribute: a long enough rope/yarn (we suggest using a bright colored yarn), a measuring tape, a pencil and a grid to record measurements (Attached 1).

Go!

Step 1: The teacher instructs each pair to build the same polygon (triangle, square, or rectangle), using the yarn. Trees, tree stumps, logs big rocks and bushes can be used as supporting posts. Once the shape has been created with the yarn, children measure its sides, and calculate the perimeter. The shape can be measured in two ways: by children's feet and using the measuring tape. Children record their different measurements on the grid.

Step 2: The teacher invites all the couples to measure with their feet, and measuring tape all the geometric shapes built by the other children. After measuring, they record them on their grid.

CURRICULAR LINKS:

AGE GROUP: 8+

TIME: Step 1: 20/30 min.
Step 2: 30 min.

AIM:
Measuring the sides with conventional and unconventional means; calculating the perimeter; designing shapes using a rope and natural posts.

CLASS ORGANIZATION:
In pairs

SUPPLIES:
Pencils, paper grids, ropes, measuring tapes, sticks, stones, and other natural elements.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

During circle time children share their results with the other teams, and compare their measurements. Then, they discuss about differences and similarities between conventional and unconventional measuring ways.

Attached 1

Geometric shape	Couple n° 1 Name	Couple n° 2 Name	Couple n° 3 Name	Couple n° ….. Name .....
Measurement with feet				
Measurement with measuring tape				

Follow up!

- Consider whether to ask children to create a specific geometric shape such as: a triangle, a rectangle, a diamond, a trapeze; and whether to ask children how to calculate the perimeter of the shape they created.

Unit measurement

Get ready

Prior to the activity make sure to create a paper with written instructions for your students about the activity. The aim of the activity is for them to understand different units of measurement and more specifically mass and volume. Hence, find a large outdoor area where you will primarily gather your students to discuss how volume can be measured.

The instruction sheet you will create, needs to have the following three statements.

1) Find two objects (A and B) for which it is true that:
   Volume (A) = Volume (B)
   Mass (A)= 2 x Mass (B)
2) Find two objects (A and B) for which it is true that:
   Volume (A) < Volume (B)
   3x Mass (A) < Mass (B)
3) Choose a standardised unit of volume measurement and use it to estimate the volume of the two containers you are given. In continuation, define the relation between the two objects (e.g. the volume of a bucket is 2.5 times bigger than the volume of a flower pot).

CURRICULAR LINKS:

AGE GROUP: 9+

TIME: 30 min.

AIM:
Understand how different units can be measured, focus on volume and mass measurements.

CLASS ORGANIZATION:
Groups of 3-4 people

SUPPLIES:
Pencils, paper, folders, containers of different volumes, digital scale.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

The statements placed on the instruction sheet should be written in a clearly structured way for the students to understand and act individually without the teacher's assistance. Make sure to explain to the students that their answers should be written in full sentences so that they make sense and with readable handwriting for review and correction.

Finally, the rest of your colleagues should participate in the activity and assist the students with anything needed.

The coordinator of the activity gathers the students in a circle. Depending on the size of your whole group, divide your students in teams of 3-4 people. Each team should have pen and paper and two containers of different sizes to measure volume.

Go!

The students scatter around the area and collect natural elements which will be used to measure and compare volumes. Once the students find the object needed for the activity, the next step is to follow the instruction sheet in order to find the relations asked in the statements. Finally, each team needs to present the unit of measurement they have chosen and convince the rest of the class why this is the best unit. The teachers should act as chairpersons who coordinate the discussion between the students and ask questions. These questions should aim at enhancing the critical thinking processes of the students. Ideally, the whole group will agree on that all the units used are correct and if combined, they could be considered sub-units of volume measurement.

The activity ends as the teachers explain to the students what is the international unit of measuring volume (cubic centimetre, cubic meter etc.) and how volume measurement can be done in a more precise way.

Look back!

Gather your group in a circle: Discuss about the activity and reflect on how everything went. Did they understand the concepts of volume and mass and how these can be measured? Allow the students to express their feelings and thoughts on the activity.

Weighing in nature

Get ready

Split the group into small teams and have them all sit in a circle. Explain that their task is to collect two stones that weigh 20 grams each, one stone that weighs 40 grams, and one that weighs between 80 and 120 grams.

Each team has at its disposal three pieces of string and two cups. They can come to you and use the digital scale to accurately find a stone with a specific weight (example a stone that weighs 20 grams). Depending on their age, on the available time and what aspect of the activity you want to focus on, you may show the group how to make a scale or leave it to them.

Go!

Allow the teams to move around, to explore and to experiment with their scales. They might get it wrong, they might get into a debate with another team and they may get ideas from other teams. A team may focus too long on something that is not important for the task, like for example the length of the strings, if the stick they choose is perfectly straight etc.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 60 min.

AIM:
Making approximations and measuring weight, practice addition and develop cooperation skills.

CLASS ORGANIZATION:
Groups

SUPPLIES:
String, paper cups, digital scale, sticks and stones.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

This is ok, as it offers opportunities for discussions at the end of the activity.

Teams eventually create their scales, come to you to weigh several stones in order to find a 20-gram stone and then use their scales to weigh the other stones of their task, first another 20-gram stone, then a 40-gram stone and then a stone weighing between 80 and 120 grams.

When a team completes the task, they come to you to accurately weigh the stones they have selected.

Look back!

Once you are all back in the circle, you reflect on the activity with questions such as: "What steps/ strategy did you take in order to measure the weight of the stones? What is the most important part of creating a scale that works properly? Are you satisfied with the way the team worked? Why is it important to be able to calculate the weight of things? Where is it needed in everyday life?" A favorite here is airlines that weigh baggage, that estimate the weight of passengers, to calculate how much gas the airplane will need and also build in the weight of this gas into their calculations! You can also demonstrate how the scale operates differently if the middle-handle string is not in the middle of the stick and you can explain that this is the principle behind mobiles.

Follow up!

- A more advanced version of this activity would have each team creating a similar challenge for another team.
- This activity can be followed up by the activity "Unit Measurement" where the concept of mass is introduced.

How old am I?

Get ready!

Prepare white sheets for recording the results, sewing centimeter/measuring tape or roulette - one for each group. A calculator can also be used.

Go!

Children form a circle and discuss: "How many groups of plants do we form by the thickness of the stem? Which plants in our outdoor classroom are trees? Say their names.

What life processes do they carry out? /5 minutes/

Every tree has its own age. How do you think you can find out how old a tree is? When a tree has been cut down, you can count its "rings" in order to tell how old it is, but what about when it is alive? We can't ask a tree how old it is. But there is a way! We will learn to determine the age of a tree by the thickness of its stem".

Students are divided into 4 groups and each group receives a white sheet to record the results. Each group chooses a free-growing tree that has enough space and the light it needs. /15 minutes/

CURRICULAR LINKS:

AGE GROUP: 9+

TIME: 40 min.

AIM:
Determining the age of the trees in the schoolyard by the thickness of their stems, developing nature related skills.

CLASS ORGANIZATION:
Groups of 6 pupils

SUPPLIES:
Tape measure, calculator, white sheets of paper

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Then,

1. Measure the circumference of the stem.
2. Record the results in a notebook (for example - 150 cm).
3. Divide the result by 5/150: 5 = 30 cm /. Double the resulting number / 30 * 2 = 60 cm /. This is the age of the tree.

Look back!

Students compare the results by groups and determine which is the youngest and oldest tree in the outdoor classroom. /10 minutes/

Forming a circle, students share what was difficult for them. What was the most interesting moment? Was it possible to work individually or in a team?

Follow up!

- Students can play the game *Hug a tree*, and then share in a circle how and what they felt?
- Students can adopt a tree and make a tree diary.

Measuring time with water

Get ready

Can we use water to measure time?

Grasping the concept of time, is no easy task for either youngsters or adults. How can we help children to understand the flow of time, and the need to measure it? Building from scratch a measuring system that shows the passing of time, is an effective strategy that helps our pupils to understand the concept of time. This unusual activity has to be carried out for an extensive period of time, from a minimum of one month to a maximum of a whole school year. Each day, a couple of children will be in charge of the activity.

Go!

Invite your class to sit in a circle and start the conversation by asking what time really is, what are the natural signs that tells us that time is passing, and what is the best way to measure time. Collect all the answers, and observations. Move on by showing to the class pictures of different instruments that have been used throughout history to keep track of the passing of time. Show pupils pictures of the sundial, and invite children to create one. You can find several easy examples of Sundial in Pinterest. Check this internet site to create one with paper plates:

https://rangerrick.org/crafts_activities/make-a-sun-dial-from-a-plate/

CURRICULAR LINKS:

AGE GROUP: 7+

TIME:
Water measuring system: 10 min. daily, for a minimum of a month; meridian template: 30/40minutes

AIM:
Time flowing awareness, comparison of conventional ways to measure time with unconventional ways to measure time; ability to read the calendar and to extract useful information from the calendar.

CLASS ORGANIZATION:
Individual work and also pair work.

SUPPLIES:
Meridian paper template, two 2ltrs bottles, 30 coffee cups, water

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

and then, ask what the best way is to measure time, and if they think there is a way to create a *time measuring system* using water.

Prepare two plastic bottles of 2 litres and set them on a table at the corner of your classroom. One bottle will represent **Past time**, and the other bottle: **Future time.**

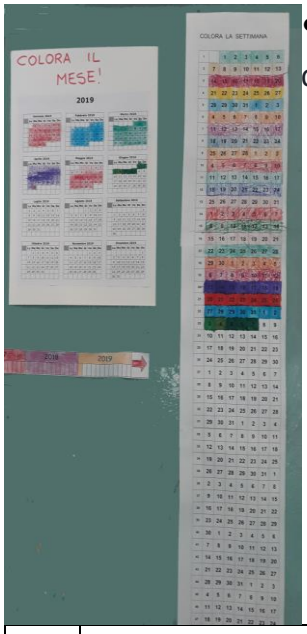
Next to the bottles put a stack of thirty-one plastic coffee cups. Each plastic cup represents one day of the month. Write the date number on the coffee cups. Fill up the **Future bottle** with water. A two liter bottle contains about the same water quantity as 30 coffee cups, so that represents exactly a month time. Each day a pair of children will be in charge of pouring a coffee cup of water from the **Future time bottle** (which represents the days that we are missing to reach the end of the month) to the **Past time bottle.** Thanks to this water time instrument, your pupils will be able to visualize in a concrete way in which moment of the month you are comparing the water levels in the two bottles.

Children will be experimenting through simple measuring systems.

Look back!

This simple water measuring activity leads to a series of mathematic developments. You will be able to introduce especially a series of measuring exercises:

- Introduce a series of diverse calendars that indicate the date in terms of year, month and the day of the week in Italian and in English.
- Manipulating these calendars children will understand how calendars work, and learn how to read them to extract useful information. They can also practice how to find exact dates, and place them in a time frame.
- Encourage counting activities such as: counting days, weeks, and months.



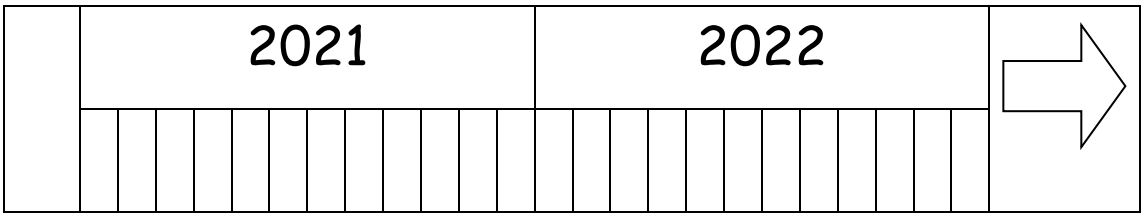
- Practice easy equivalences between quantity of time and quantity of duration.

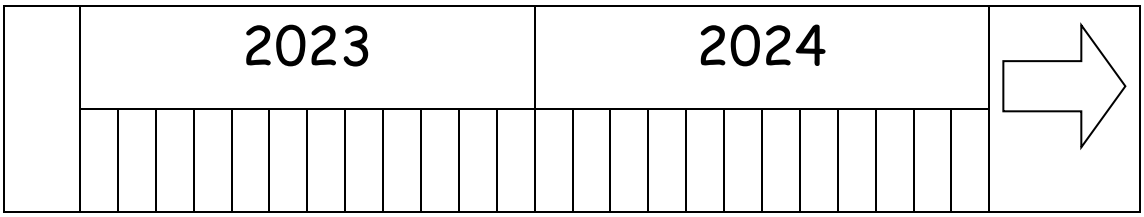
CALENDAR SUPER QUIZ!

Use the present year to answer these questions:

1	**Which is the seventh month of the year?**	
2	**Which is the shortest month?**	
3	**How many days does it have?**	
4	**How many days has October got?**	
5	**Write the number of days of March and April**	
6	**Which day is your birthday this year?**	
7	**Which day of the week will be the fifth of June?**	
8	**How many weeks in a year?**	
9	**Which day will be in a week time from today?**	
10	**Which day will be in a month time from today?**	
11	**Which day of the week will be Christmas?**	
12	**Count how many days total in June, July and August?**	
13	**Which day will be in two weeks' time from today?**	
14	**When does Winter begin?**	
15	**Which day will be the last day of school?**	

16	**Which day of the week will be April 23rd?**	
17	**Which day was a month ago today?**	
18	**What day was five days ago?**	
19	**What day will be in three-weeks' time?**	
20	**Write down all the months with 30 days.**	
21	**Write down all the months with 31 days.**	
22	**What month has only 28 days?**	
23	**Count how many days does Springtime have?**	





Follow up!

- https://rangerrick.org/crafts_activities/make-a-sun-dial-from-a-plate/
- sing the traditional rhyme: Tick-tock. You can find it on the Super simple songs collection on YouTube:
- https://www.youtube.com/watch?v=HGgsklW-mtg

Happy clock

Get ready!

Before the lesson students have collected sticks, leaves, flowers and other natural materials.

Students are divided into 3 teams. Each team receives materials for making a clock. The task of each team is to make a clock.

Go!

Each team has 15 minutes to make a "Happy clock". When the time is up, the teams gather together.

The first team points the exact time on its clock, while the others have to say it. The second and third teams point on their clocks a random hour /examples 10:25, 6:45 /, while the others have to say it.

Look back!

The students say "What time is it?" When a wrong time is reported, the children from the team have to correct it.

The winner is the team, which has made the fewest mistakes.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 40 min.

AIM:
Self-checking the level of learning and the ability of students to practice.

CLASS ORGANIZATION:
Small groups

SUPPLIES:
Pictures, natural materials

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Follow up!

- Songs on how to tell the time:
- https://www.youtube.com/watch?v=TaFQslk37xg
- https://www.youtube.com/watch?v=cd_eyEJKa_A

Problem solving

Get ready

Create and write down a story based on a mathematical problem. Make sure the problem creates an interaction between the students and the environment in which the group is to ensure they stay active and engaged. Make sure you create a problem with a combination of various calculations or three different problems with less calculations.

The students should be divided into groups of three. Every team gets a paper with a mathematical problem written on (one at a time) with an aim to find its solutions while using natural materials related to it.

You should always motivate the students to find strategies and techniques which will assist them in the resolution of the problem. For instance, how will they do the calculations? How will they use the available natural materials? Will they allocate tasks to each member? Will they follow a particular way to validate the result?

The rest of your teacher colleagues should go around and assist the students on how to complete the task.

Go!

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 50 min.

AIM:
Practice counting, addition, subtraction, mentally and practically thinking about problem solutions.

CLASS ORGANIZATION:
Teams of 3.

SUPPLIES:
Natural materials (pinecones, stones, wooden sticks, oaks)

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

The game coordinator creates the teams and gives out the paper with the problem each team should solve. It is advised that the teams sit far away from one another so that they stay focused on the problem they should solve. When they find the solution, they should ask for the coordinator to let her/him know their answer. If the problem is made up of multiple calculations and the answer given is correct, then the game has ended. If the problems are three with smaller calculations, then once a team has found the solution of the first problem, the coordinator hands out the paper with the second one, third one etc. so that the game continues.

Example of a problem:

"One day, Laura, Stavros and Nick went for a walk in the woods. While they were walking, Laura found 6 pinecones, Stavros found 3 pines and Nick found 5 stones. However, Stavros lost his 3 pinecones when walking up the hill but he found another 4 when he reached the top. Nick on the other hand, lost 1 stone when walking down and found 3 when she reached the bottom.

How many pines and how many rocks did Laura, Stavros and Nick have at the end of their walk in the woods?"

Look back!

Gather your group in a circle: Discuss about the strategies followed. Did they work out well? Were the teams effective? Did they all find the correct answers? Was there anything challenging? Let the students express their feelings and thoughts.

Follow up!

- One of the most important conditions to improve problem-solving skills is that the children actually "see" the problems and in this respect, working regularly with natural elements to represent visually math problems can improve class results up to 40%. Keep allowing for individual or group representation of the problem data and results will be amazing!

Problem solving

Get ready!

The students choose numbered pebbles, from 1 to 31, in the first part of activity. We shall use a yellow paper strip as our number line, that will be lined on the ground, between two trees, that will be considered 0, respectively 31.

The second activity consists in solving problems. The class will be divided into two groups. Each group will search for 5 yellow leaves, 3 sticks approximatively of the same size and 2 red leaves. The marks +, -, ? and the results 9, 11, 4, ? will be written in black on pebbles.

Go!

1. Each student will stand on the number line according to his chosen number, firstly in ascending order, then in descending order.

2) Each team search for and bring all the needed materials. The teacher places the materials in the next math problem:

a + a + a = 9 , where a is represented by yellow leaves

a + b = 11 , where b is represented by equal sized sticks

b – c = 4 , where c is represented by red leaves

CURRICULAR LINKS:

AGE GROUP: 8+

TIME: 40 min.

AIM:
Number sense and numeration; stimulate interest in the learning of mathematics; develop basic mathematical concepts and computational skills; develop creativity and the ability to think, communicate and solve problems.

CLASS ORGANIZATION:
Groups of 8-9.

SUPPLIES:
Pebbles, sticks, marker, leaves.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

The question is: a + b – c = ?

The second problem is :

a + a + a = 15

a + b = 25

b + c = 23

The question is : a + b+ c = ?

Look back!

The activity ends with frontal evaluation and assessment of the way each student worked. Don't forget to have fun along the way! Mathematics has a rare charm: it can be both challenging and lovable at the same time!

Follow up!

- Challenge your students to such exercises of their own. Can the class solve them?

Nature "Capture the flag"

Get ready

Let's practice the timetables or grammar rules playing 'CAPTURE THE FLAG' GAME outdoor. This is a well-known game in Italy which can easily be adapted to drill whatever rules, historical dates or timetables our pupils need to memorize. Memorization drills can be rather boring if always carried out in class sitting down holding a pen and writing on paper. To play this game you just need a field with an even grass surface of about 10m in length and 10m in width where children can run. Mark out two territories with string or chalk then place a flag (or a stick) at each end of the pitch.

Go!

Play with two teams of at least 4 children. The teacher stands in the middle of the field perimeter and holds the flag. Each child in both teams has a number. When the teams are formed by 4 children you will have numbers from 1 to 4, in both teams, if you have teams of 10 children each you will have numbers from 1 to 10 in each team.

The teachers raise the flag/tree branch calls a number i.e. 'two' which corresponds to a team member and asks '4 times 7'. The

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 60 min.

AIM:
Memorising timetables, verb tenses, grammar rules.

CLASS ORGANIZATION:
Groups, whole class.

SUPPLIES:
String, chalk or rocks or landmarks such as trees to mark playing fields, one flag (use broken tree branches)

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

children number 'two' of both team run to capture the flag, but can touch the flag only after having given the correct answer to the question. The first child who is able to give the correct answer to the question can grab the 'flag' and run back to his/her team. If the first child who has captured the flag has given a wrong answer, the child of the opposing team can chase the adversary and if s/he manages to touch him/her before s/he has entered team line s/he gets the flag and the point.

Look back!

When you finish the game sit down and talk about what happened. "Did the challenge make the task easier or more difficult? When did you feel part of a team? What did you feel when you won/lost the game? How do we finish a game? What does the winner say? How should the one who lost this game react? Why?"

Follow up!

- You can propose this activity for reviewing other subjects such as verbs, foreign language vocabulary.

The Fibonacci sequence

Get ready

We are going a lot outside, playing and pretending that the things around us are something else. A snail shell is some mysterious house for the gnomes, the pattern on a pinecone turns into some extra-terrestrial galaxy and so on. But what if we look closer? What if the world around us has more meaning than it looks at first sight? It is time to look closer and observe the scales of a pinecone, the seeds of a sunflower, the eye of a thunderstorm. They all look kind of a spiral. But … how come?

Go!

Can we re-create the world around us using spirals? Who discovered that the spiral is the shape of life? Can we draw a spiral using numbers? How does a number turn into squares and squares into spirals? Can we find beauty in spirals?

Step 1: Start by telling the kids the story of Leonardo Fibonacci. You can find several stories on the internet, but be sure to emphasize the fact that he lived more than 1000 years ago and that he had a passion for numbers, being the one that introduced Arabic numbers in Europe. He used to count

CURRICULAR LINKS:

AGE GROUP: 8+

TIME: 90 min.

AIM:
To understand how the pattern of Fibonacci sequence is created. To add numbers and create that sequence. To see the beauty of math in the world surrounding you.

CLASS ORGANIZATION:
Whole class, groups of 3-5

SUPPLIES:
Natural elements found on site (eg. cones, pebbles, leaves, small sticks), paper, crayons.

OUTDOOR/INDOOR:

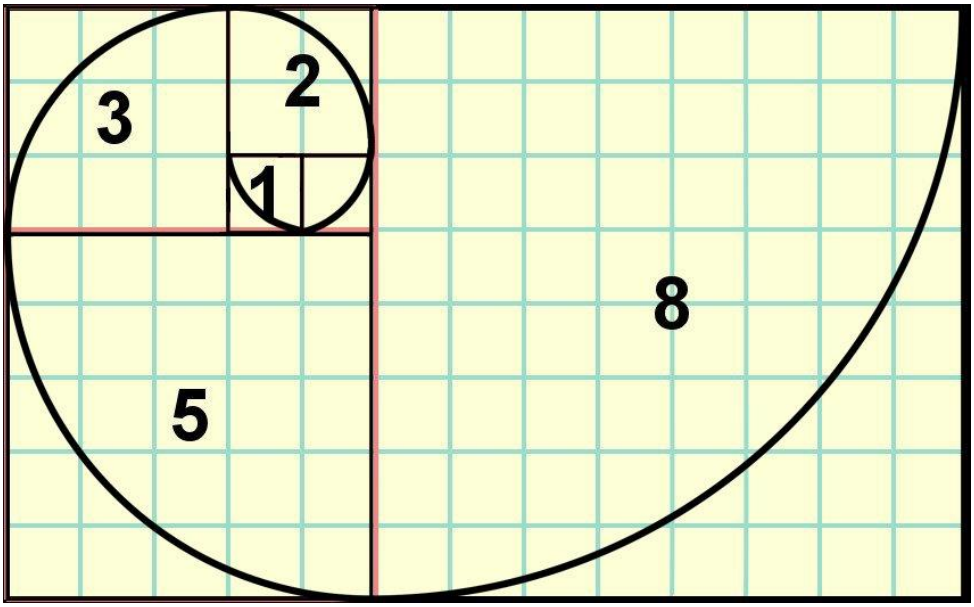
TEACHER/CHILD LED:

a little bit differently – he found the next number by adding up the two numbers before it: 0, 1, 1, 2, 3, 5, 8, 13, 21 etc. Demonstrate the formation of the sequence writing down the numbers and adding them.

Step 2: Get the children to gather some natural elements.

Step 3: In groups, lay down the elements gathered: 1 for the first row, 1 for the second one, 2 for the third one, 3 for the fourth, 5 for the fifth and so on, so the students can see the formation of the sequence.

Step 4: Using a pencil on a math paper, construct the spiral using the sequence, dreating squares. Then, ask the children to form spirals with their elements.



Step 5: Ask the children to look after natural spirals. They could observe the scales of a pinecone, the pattern of the seeds in a sunflower, a snail shell.

Look back!

Ask the children to think about how does a chameleon's tail, a big wave, a flower's petals look like and see if they can find the spirals, or at least, if they think if there are any patterns.

Follow up!

- Challenge your students to make a poem about Fibonacci or about spirals using the sequence itself as a model for verses – first line, 1 word, second line, 1 word, third live, 2 words and so on.

The third order magic square

Get ready

A very old Chinese legend, says that the emperor saw the first magic square on the back of a turtle that was coming out of the flooding Lo River. The emperor discovered that the markings on the turtle's shell represented numbers, and the pattern made a magic square. Amazed, he decided to call the turtle Lo Shu, meaning the book of the Lo River. This wonderful story and other interesting information about the magic square you can read at the following address:

https://study.com/academy/lesson/what-is-a-magic-square-in-math-history-examples.html

Children are divided in 2 groups of 8. The task is to place the written pebbles from 1 to 9 into the square so that each row, column, and diagonal adds up to the same number (use each number exactly once). It is a magic square because each row, column, and diagonal end up with the same sum (15 in our case). The formula to calculate the magic sum is: $n (n^2 + 1)/ 2$, $n= 3$).

CURRICULAR LINKS:

AGE GROUP: 8+

TIME: 30 min.

AIM:
Understandthe third order magic square; amazeand produce the WOW! effect.

CLASS ORGANIZATION:
Two groups.

SUPPLIES:
Paper.

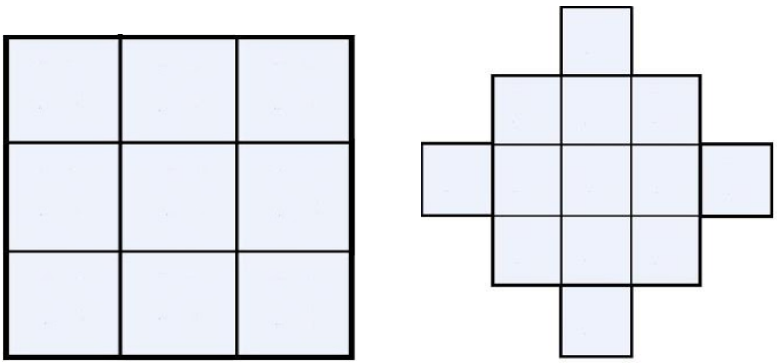
OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Go!

Each team gets a sheet of paper with a square and pebbles written from 1 to 9.

The challenge is to find possible arrangements to solve a 3 by 3 magic square in 10 minutes. Then the teacher shows the students an efficient and easy way to complete a magic square. First of all, we add 4 extra squares to the given square as in the picture bellow:



We add the numbers on each of the 3 diagonals, starting from the top from left to right.

The numbers from the extra squares go straight down to the farthest empty square.

Look back!

1. An arithmetic progression of 9 numbers is constructed (1-9).
2. Add 4 extra squares to the given square.
3. Place the 9 numbers (stones) in order in the figure obtained.
4. Move the pebbles inside the square respecting the rule of the farthest position.
5. Delete the extra squares.

   Your students are flabbergasted!

Follow up!

- Find the connection between German painter's Albrecht Dürer' s *Melancholia* and the magic squares.

Eco-math mosaic

Get ready

During previous activities students gathered information about the ecosystem in the Lake Atanasovsko area and about the bird migration route-via Pontica. Also, they collected samples of bee eco-products from Lake Vaya area and gathered historical data related to Lake Mandrensko.

Students are familiar with the creation of interactive crosswords games in the LearningApps platform.

Go!

The final product of this activity is a special puzzle, *Eco Math Mosaic*. Every piece of the puzzle contains a different task. These tasks are created by students who will work in four teams.

Team I – Their pieces of the puzzle will contain math exercises (multiplication and division of a multi-digit number with a two-digit number). Properly solved, the puzzle will reveal the name of the eco-path in Atanasov Lake area.

Team II – will create tasks using information and interesting facts about the rich diversity of birds in the Poda Protected area and the

CURRICULAR LINKS:

AGE GROUP: 10+

TIME: 40 min.

AIM:
Create a collection of Math problems inspired by eco activities; built bird houses from natural items.

CLASS ORGANIZATION:
Small teams, whole class

SUPPLIES:
Worksheets, flash cards, pencils, phones/tablets/laptops, natural items (branches, sticks, dry leaves, moss, hemp twine), bee products.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

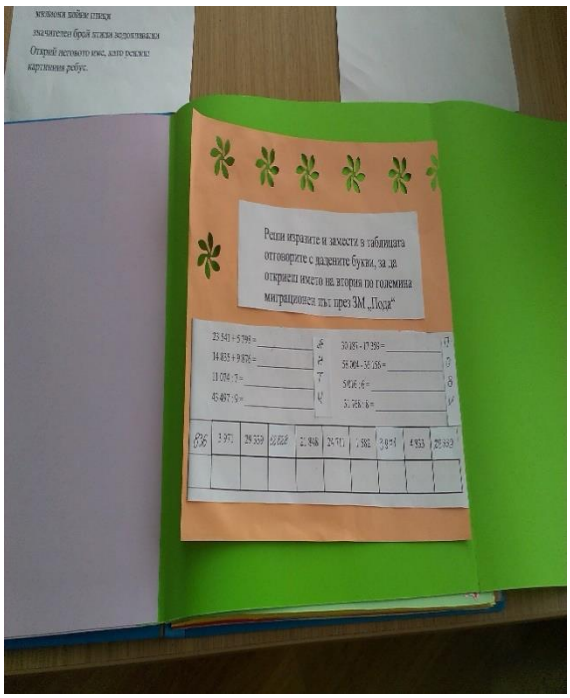
migration route of the birds of Via Pontica.

Team III – will create a flash cards game using original drawings of the birds from the Lake Mandrensko area and exercises with simple math equations. The game reveals the old name of the lake.

Team IV - arrange a stand with bee eco-products and create an "All about bees" guide with interesting information about these useful and fascinating insects. The bee eco-products have been selected from the Bee Lake Museum. Students are challenged to create "sweet" math problems that will be included in the Eco Math Mosaic Collection. In the end of the activity each team, using the natural materials collected, create a birdwatching model.

Look back!

Challenging their creativity, students, working in teams, combine their knowledge about local natural areas with math exercises, language games and art. Moreover, these activities involved the use of a digital application.



Follow up!

- In IT classes students can create QR codes for the math problems and for the plants and animals from the local protected areas. They will use the information and images collected during previous activities.
- QR code generator: https://www.qr-code-generator.com/
- For more variations and a higher level of difficulty the math problems can be written in the form of lyrics or riddles. Students can also invent codes replacing letters with numbers and/or shapes and create secret messages.

Math Express

Get ready

In our country, there is this show on TV called "Asia Express". Groups of participants compete against each other over 4000km getting from place to place until they reach the final destination. On the way they get different "missions" that they have to pass in order to move forward. It is a very interesting show and our source of inspiration for this activity.

The reason behind the activity was that the pedagogues teaching the 1st grade observed that the students did not read and listen to instructions attentively. As we value experiential learning a lot, along with four other teachers, we designed this afternoon activity for the children.

It consists of teams of 1st graders going from place to place, interacting with people, getting a mission and solving it before they get the envelope with the name of the next place. Therefore, we went to several places in town (Mayor's Office, Stadium, History Museum, the railway station etc.) where we talked to the community to play along.

CURRICULAR LINKS:

AGE GROUP: 7-8+

TIME: 120 min.

AIM:
Realize the importance of reading and understanding instructions; interact with unknown people in order to obtain information.

CLASS ORGANIZATION:
Groups.

SUPPLIES:
Clipboards, worksheets with problems, pencils, writing paper, envelopes with tasks.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Go!

That morning was especially chilly, so not a pleasant day to find our way in the town. However, the objective was not a state of well-being but to finish the route as quickly as possible.

Start by forming several groups of 4-5 students, each supervised by an adult who cannot interfere (unless there is case of emergency) and who will not help. The adult is there to observe how children face the challenge and to ensure the general safety of the group (for instance when crossing the street).

Children enter different town organizations, greet, find the people with the envelopes that contain the tasks and solve the math problems through teamwork. Once the solution is correct, they get the next envelop to go on.

In our case, the accompanying teachers noticed that either the students do not read the problems up to the end or they do not really pay attention to data. We also

observed that the students needed to improve their teamwork. It was a harsh lesson for some of the groups, as not paying attention made them finish quite late or get lost (of course the accompanying teacher was still with them).

Look back!

The next day, we discussed with the students how they felt and what we observed. We used frustrations to draw a solid conclusion. We also began a program to help them represent problem data with natural elements, worked on teamwork and shortly, their Math results improved up to 35% per learner.

Follow up!

- You can turn this into a yearly event for 7-8 year old students. They can realize the importance of careful reading/ listening to instructions before solving a task.
- Instead of Math problems, the tasks can include riddles, word searches or coded messages.

Science

Science preschool activities:

- Whose sound is this?
- Touch and learn
- Develop your senses
- Shaping the Sun with rice and wheat
- Sensory board
- Mud paint
- Mud making
- Body outdoor science activities
- Fall detectives
- Leaf colour line
- Leaves and colours
- When leaves turn into... pictures!
- Herbs – nature and health
- Magic potions
- Natural perfume
- Stay away from me!
- Where does it grow?
- Spring and healthy food
- The flower that makes kids smile
- Slide, slimy snail!
- Worm farms
- Be a bee!
- Making animals
- Scientists on the new continent
- I spy with my... Extra-eye!
- The inclined plane
- Pulley with muscles
- Clever lever
- Buoyancy

Science primary school activities:

- Season signs
- Drawing between science and art
- Plant our seeds
- Growing a plant
- I also breathe!
- Coloured cabbage
- Leaf symphony
- Vertical garden
- Vegetables in a box
- Growing a potato
- Found a peanut
- Learning with trees, about trees
- Guess the herbs
- Kitchen herbs and spices
- Mapping plants
- Living things
- The magic box
- Acorn doll
- Sweet garden conversation
- Natural soap
- Making flower pictures
- Botanical book
- Incredible animals
- Bug hotel
- Garden bug hunt
- A surprise guest
- What makes a bird, a bird?
- Eggs in bird nests
- Make a nest
- A special birdfeeder
- Metal investigation
- Yeast nutrition
- Make your own yoghurt
- Exploring ice
- Water cycle
- Fire snake
- Storm
- Solar system
- A new friend
- Sustainability
- Decomposition game

Whose sound is this?

Get ready

What sound does an acorn make when it falls? We gather different natural elements that are hard enough to make a sound. The aim of the game is for the children to recognise the element by the sound it makes when we throw it on a hard surface. Make sure that the elements you have picked make different and distinctive sounds. Try it yourself first. Decide if you are going to play the game by blindfolding the children or they will have their eyes closed by themselves. It is best to have small groups playing the game.

Go!

The group sits in a circle. Explain how important our hearing is for this game. Show them the natural elements; let them feel the surface of each one. Ask them to take turns throwing the orange, chestnut, stone etc. on the hard surface. What kind of sound does each object make? Is it a high /low sound, is it a quiet or a oud sound? Then ask them to close their eyes, or use a blindfold. Explain that you are going to throw each element again and they have to remember by the sound it made, which element it is.

CURRIC ULAR LINKS:

AGE GROUP: 4+

TIME: 20 min.

AIM:
Explore their senses and raise spatial awareness.

CLASS ORGANIZATION:
Small groups

SUPPLIES:
Natural elements that make sounds when they fall (orange, walnut, chestnut, stone, pinecone, acorn, almond, stick, shell, apple, etc.) A hard surface like a wooden tray, a table, the floor.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

When all the groups have played the game, gather in a circle and ask them how they felt with their eyes closed. Was it difficult to recognise the sounds? Which element made the strongest sound? Which one the lightest? Why did they make different sounds? Can they prove their point with other objects they can find around?

Follow up!

- Can you group the objects by twos, first two that sound the same, then two that sound different?
- Can you count with your ear? How many times do you hear the sound when the object drops once or more than once?
- The sounds of the same object falling on different surfaces is different as well (a pine cone falling on a bed of leaves does not sound the same with the same pinecone falling on a metal tray). Explore more!
- The rustling of the leaves, the sound of the creek, the buzzing bees – nature is never quiet. Can you name other sounds in nature?

Touch and learn

Get ready

Pupils start to learn by touching. Touching is the very first sense human beings use to learn about the world that surrounds them. While stimulating curiosity, this activity intends to strengthen children's awareness of the sense of touching and encourages children to experiment. Teacher prepares a variety of natural elements, which are different for their tactile characteristics. Include elements with hard, soft, smooth, rough, pointy surfaces as for example: sticks, pinecones, pebbles of different sizes, seashells, fruits, leaves, sponges etc. Besides these elements teacher prepares a large bowl or basket with seeds.

Go!

Step 1:

Invite children to sit in a circle around a large piece of cloth on which you have spread a variety of natural materials. Ask each child to observe and to touch the natural material s/he feels like touching. Do not press children to carry out this operation in a hurry, make sure they know they have plenty of time to do this.

Step 2:

Children sit back in the circle and with the help of the teacher, gradually nominate the different tactile characteristics of the elements they have checked.

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 1st step: 30 min. 2nd step: 30 min. 3rd step: 30 min.

AIM:
Tactile identification of objects, awareness of different tactile sensations.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Any natural material such as: a bowl of seeds, sticks, pinecones, nuts, acorns, leaves, pebbles, sponges etc. A scarf to blind the children, magic markers, coloured cardboard shaped like little hands, stick.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Together with the teacher, children will complete a large poster with a double entry table. The first column contains the name/picture of the natural element. The top horizontal line contains the name of the different tactile qualities (hard, soft, rough, pointy, smooth and scaly). Taking turns, children will place the little coloured hands in the column that corresponds to the tactile characteristic of each natural elements, which they previously touched and examined.

Step 3:

Once the class has completed the poster with tactile characteristics of natural elements, they have observed in the circle, the teacher hides the different natural elements in the midst of the big bowl filled up with seeds. Blindfolded each child will take turn in dipping his/her hands in the seeds and while touching the natural object hidden in it, s/he will try to identify the object while describing its characteristics. This game helps strengthening children's tactile memory, and it is quite entertaining.

Children will need to identify all objects hidden in the bowl.

Look back!

Once all the natural elements that the teacher had hidden in the seed bowl have re-emerged and have been identified, you can hang the big poster on the corridor of your kindergarten. Then, you can ask the pupils which tactile characteristics they enjoy the most when they touch an object, and what kind of sensation they feel when they experiment this kind of tactile sense.

Follow up!

- If you enjoyed this activity, we suggest you move on and present to your class *Shaping the Sun with rice and wheat*.

Develop your senses

Get ready

The teacher talks about our 5 senses and what we use them for. After that, in couples, we have a couple of minutes to think about situations in our daily life where the senses are involved and to discuss about them with the rest of the children.

Go!

The teacher will have prepared a bag with different elements that we can find in nature (wood, grass, flower, sand, stones etc.)

Next, the teacher will ask the class to form pairs.

One member of the couple will close the eyes or will get blindfolded and by touching, he or she will guess which element it is. Next, also with eyes covered, they will use only the sense of the smell.

Once the 2 members of the couple have used the sense of smell and touch, we will move on and we'll guess the elements with a massage on the back. Rub with the widest part of the natural thing, so that it get easier to guess. At the same time, we use the activity to relax students before continuing with the class.

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 90 min.

AIM:
To develop listening and speaking skills, our senses and expand vocabulary.

CLASS ORGANIZATION:
Couples.

SUPPLIES:
Different elements from the nature.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

Developing our senses and the deep concentration in the activity in order to guess the natural element: we can sit down in a circle and discuss which element how they have felt without using the sense of the sight. In what kind of situations can the sense of touch or smell replace the sense of sight?

Follow up!

- After using these natural elements we can ask the students to build a tower as high as possible (Related to the good practice "cabin building").
- We can distribute one element to each child and play to the story telling once they write a word on his/her element (related to the good practice "perform your own story tale").
- We can make a design adding paints to the natural elements (related to the good practice "cones painted").

Shaping the Sun with rice and wheat

Get ready

The Sun is one of the first natural elements that children love to draw and colour. This major star can become the protagonist of a multisensory lesson. These activities are meant to stimulate children senses of touch and sight, while encouraging children to think of the importance of the Sun in our lives. Bring the children in the school garden and invite them to observe the Sun; avoid the central hours of the day, and if necessary, collect enough sunglasses for children to wear. Inviting your class to wear sunglasses, can be very entertaining, and offers an opportunity to make parents consider the importance to protect their children's eyes, especially during summer.

Go!

Step 1: After observing the Sun, lead the children back in the classroom; invite children to sit in a circle and to observe the pictures of paintings and work of arts that represent the Sun. You can either show these images using a class smartboard or distributing some paper pictures of the artwork. We suggest showing, for example: Van Gogh's *Olive Trees with Yellow Sky*

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: Step 1: 30 min. Step 2: 30 min. Step 3: 30 min.

AIM:
Enhancing the touch and sight senses, lexicon, fine motor skills, reflection about relation between the sun power and earth products.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Light blue cardboard, Vinyl glue, brushes, adhesive cling film/cling wrap, a bowl of brown rice, a bunch of ripe wheat ears, sunglasses for each child, reproduction of works of art which represent the Sun with different techniques.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

and the Sun, The Sower, Wheat Fields, or Claude Monet's *Impression Sunrise*, Picasso's *Don Quixote, Francoise as the Sun*, *Colombes au Soleil*; Kandinsky's *Red Sun and Ship* and Marc Chagall's *Man's Creation*. Ask questions such as: "What is the colour and shape of the Sun in these paintings? Where is the Sun exactly in these pictures? Is the Sun formed by different parts? What is the painting that you like the most? Why?" Then, move on to question such as: "What is the role of the Sun in nature? Can we grow anything without the Sun?" etc.

Step 2: The teacher asks children to represent the Sun using natural elements and shows them what they can use to do this: ears of wheat and brown rice. Each child is encouraged to touch and examine the ears of wheat and brown rice. Allow plenty of time to this experience. Children should be able to touch, see and feel these elements. While they are doing this, encourage them to express what they see and feel. "Why do they think the teacher picked these elements to recreate the Sun?"

Step 3: On a table prepare the light blue cardboard and use the magic marker to draw a big circle in its middle, then invite children to spread the vinyl glue with the brushes. Once the vinyl glue has been spread, children will pour over the brown rice. Then, show how the ears of wheat have to be arranged around the circle with the brown rice. Explain that the wheat ears represent the sunrays. Finally, cover the Sun with cling adhesive film.

Look back!

Hang up the blue cardboard with the sun in the corridor of the school so that everyone can admire the artwork.

Follow up!

- We suggest doing this activity after you have presented the activity 'Touch and feel' which is also included in this guide.
- To move on, we strongly suggest reading the book by Bruno Munari: Drawing the Sun ed. Corraini.

Sensory board

Get ready

When we walk through the park in autumn, we can find a lot of materials that nature provides us. Sensory activities are a tool to promote children's development through play. They love sensory boards because with them, they discover new textures and colours and everything catches their attention.

Go!

It's about collecting different materials. This time, when we walk through the park, the first dry leaves begin to appear on the ground, but we can also find them still green; the same goes for the branches.

To prepare this fall activity, the first thing we will do is classify the materials by type. If we have very long branches, we will break them with our hands to fit the cardboard that will serve as a support for the board.

Then we will stick the materials on the cardboard with the glue gun, forming groups. It is about creating different sectors according to the different textures and colours so that the baby can distinguish them first with his/her eyes: the colour contrasts will attract his attention. Then comes the experimentation through touch.

CURRICULAR LINKS:

AGE GROUP: 3+

TIME: 30 min.

AIM:
Develop your senses and the ability to experiment.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Flowers, fruits, glue, paper.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

In small groups, we can do a sharing. We will ask the children to tell us if they know what leaves they have touched, if they have recognized their smells, if they liked the texture of the leaves.

Follow up!

- Here is an explanatory video on how to make a sensory board.
- You can create new boards to learn geometric shapes or new textures. https://www.youtube.com/watch?v=ZW9Z001Zrd0

Mud paint

Get ready

We talk about what we can find in our local forest and ask the children to remember the mud-making process. Today we will mix the element of surprise by experimenting with water on wax, while reacquainting ourselves with our local forest. Teachers have prepared cards with local animals and/or plants drawn with white crayon onto white paper 5 (thick paper and about the size of a card) There are holes in each card and each child gets a pack of 3-4 cards wrapped with string.

Go!

We are gathered in a circle around the already made mud. We give each child the card packet and a paintbrush. We dip our paintbrushes into the mud hole and watch the children reveal what is drawn on their cards. We let the cards dry (if it is a windy day, you may want to swap with the next step and hang the cards on a branch while they dry.) Once dry, sweep off excess dust with a pine needle bunch (broom), weave the piece of string through the holes and hang as a garland for your home, school etc.

CURRICULAR LINKS:

AGE GROUP: 3+

TIME: 30 - 45 min.

AIM:
To experiment and discover the science behind water and water resistant materials. Express themselves through art. Experience surprise and have fun.

CLASS ORGANIZATION:
Whole class, individually

SUPPLIES:
Paper, white crayons, string, pegs, paintbrushes, water.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

Gather the children back in the initial circle and reflect on what happened to the water with the crayon, discussing the difference of water on wax compared to water on soil. Can they name other water resistant materials?

Follow up!

- This could be followed up with exploring and learning about more water resistant items in nature (oil, bird feathers, resin, wax and/or human made items we use (raincoat, umbrella).
- With older children, you can write secret messages to be discovered with mud.

Mud making

Get ready

We have great childhood memories about playing and splashing in the mud (less great was the look on our mothers' faces)! Besides the happy memories it builds, mud has a whole list of benefits for children. Probably it is a good idea to inform the parents beforehand that the children will have a mud day and let them know some of the good things mud does for children. According to natureplayqld.org.au: mud makes you happy (due to a bacteria called Mycobacterium Vaccae), reduces allergies and asthma symptoms, increases brain activity because it activates all our senses and mud can reduce childhood anxiety and stress. For the lesson, find a suitable piece of land for digging. We encourage and guide the children to make a hole by loosening the soil and removing any rocks or pebbles we find along the way. They learn the process of digging holes, adding water and mixing it up to make mud. Dig, fill, mix (2nd language words that are easy to follow, learn and say).

Go!

We are gathered in a circle and noticing the dirt. Is it dry? Wet? We add water and begin noticing. Is the water getting absorbed? We are digging and mixing until we are happy with our muddy consistency. The children use sticks to mix and we give them the space to be in this moment and let

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 40 min.

AIM:
To make mud and understand a bit about water absorption; to cooperate with others while digging; to create and share stories. To have fun!

CLASS ORGANIZATION:
Either one circle around mud hole or several small groups

SUPPLIES:
Water and sticks

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

their imaginations run wild. We feel the mud with our hands, roll and press it, leave handprints on tree trunks etc.

Look back!

We break down the process of how we made mud. We re-live all of our wonderful ideas by retelling some of what we did in our mud play. To prepare for the mud painting with crayon activity, we hypothesize what might happen if we add a lot more water to the mud. Would we be able to use that liquid for something? Possibly for painting?

Follow up!

- Combine this activity with the one called *Mud paint crayon*.

Body outdoor science activities

Get ready

All these activities are practical and require natural elements like sticks, rocks, leaves that you either gather when the lesson starts or you prepare them beforehand. There are two ways to do the following activities: 1. work in four groups and rotate the groups so that every child can attend each of the activities. 2. each group attends one activity, then in the classroom and based on photos, the children describe their group activity.

Go!

Gather the children and begin with some fun warm-up exercises to activate their body vocabulary. Tell them they are going to spend the morning with hands-on activities on body parts.

Centre1: English – external body parts. Ask the children to name the main parts of our body and use natural materials to make a child. Once they are ready, ask questions like: "What do we see here? Why did you make the hair long/ short? Does he/she have a nose? What materials did you use to make the hands/ body? Does this child have a name? What can this child do? What does this child like/ doesn't like?"

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 50 min.

AIM:
Name parts of the body both internal and external; understand body functions and processes.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
See-through plastic gloves, sticks, toilet paper roll and funnel, natural materials, piece of cloth, string or marker rubber band.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Centre 2: Science – internal body parts, functions and processes. Take a larger piece of cloth of neutral colour and ask a child to lie down. Either trace him around with a marker or use a string to do that. Ask the child to stand up and you should see the trace of his/ her body on the cloth.

Ask the other children to represent the main internal organs in the body (lungs, heart, stomach, intestines and even brain) with natural things that they can find nearby. Let the team enough time to do the task. Then ask them what the different natural elements represent and how these internal organs work in our body.

Centre 3: Science and sports – the heart beats. Ask the children in the group to make pairs. Make a "stethoscope" by inserting the funnel in the paper roll and make such devices, as many as there are pairs of children. Encourage the pairs of children to listen to each other's hearts by placing the "stethoscope" on the other child's chest and listening attentively. Now go for a run and come back. "Does the heart sound in a different way? How? Why do you think this happens?"

Centre 4: "Look at your hands? How many bones can you see?" (most of the children see each finger as a single bone. Ask them to find 5 sticks as long as each or our hand. Place each stick in the finger of a transparent plastic glove and use a rubber band to tie it at the end. "What can you do with your new hand? (not much, you can wave, you can sweep, you can blow a kiss) Compare your own hand to the new hand. How are they different? How does it help that your hand is made up of many bones?"

Actually, the hand and the wrist are made up of 27 bones, 14 of which are part of the phalanges (fingers and thumb).

Look back!

Make a circle with the whole class and ask them to name at least 1 new thing they found out by doing the day's activities. Ask them to name their favourite activity.

Follow up!

- With primary school students, you can make a wonderful comparison between the human body and the parts of a plant. First ask them to represent a human body and a plant with natural materials then ask questions such as: Which are the parts that help us move? What do plants use for that? Which is the part that we use to talk? How do plants talk? Which is the part that we use for eating? What and how do plants "eat"? How is breathing different? Where is a plant's reproductive system? How is it different from ours?" etc.

Fall detectives

Get ready

The presented activity takes places in nature, in fall, most likely in the woods or a park. It is important to know that this activity is doable in any season. Alternatively, it can be considered a one year long project and done monthly to observe not only the changes that take place from one season to the next, but also the passage from one season to another. In order to ensure a proper academic setting, check the premises and prepare the necessary materials: felt tip pens, magnifying glasses and small white boards. If you do not have these boards, you can use simple sheets of paper placed on clipboards or hard objects such as books to be able to write on them.

To be able to unfold the activity in nature, making sure this is protected and the children are safe, a set of general rules needs to be set up for the children to know and repeat every time they are outdoors. Security wise, show the children the area where the activity is to take place. If they are younger, it would be advisable to delimit the area with barricade tape.

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 30 min.

AIM:
Recognizing fall, its distinctive signs, developing specific vocabulary and orientation skills

CLASS ORGANIZATION:
Small groups, whole class

SUPPLIES:
Felt tip pens, small white boards, magnifying glasses

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Go!

To help the children connect to the activity, and get their attention, you can sing to nature or do some mindfulness exercises (listen to your breath, the voice of nature or hug the trees). Introduce the supplies and tell the children they are about to take a short hike where they are going to be fall detectives and explore the forest, the orchard and the meadow. Thus, they will draw on the board whatever they notice on their way. Like true detectives, they will use magnifying glasses to discover different clues. Before they leave on the hike, make predictions with the children about the signs of fall they could find in the forest. Then begin the hike. This is the time when you will notice the children's attention to details, space orientation and their pleasure to explore. Thus, the children, full of enthusiasm, will discover different kinds of leaves that they can sort, will observe that many leaves are still green or can make suppositions about what happens to the leaves that are on the ground. The children will also notice fruits of the trees such as acorns, beechnuts or nuts or hawthorn, or the fungi growing on moist branches or on the ground. They will certainly notice the weather, discover hoar, the way it feels and appears to be in nature or on their boots or the rainy/cloudy/partially cloudy/sunny fall weather. The specific vocabulary for this activity will improve and new words will be acquired. Let the children use their senses to discover the forest, encourage them to smell and touch natural elements. Every time they find a sign of fall, they will draw it on their boards.

Look back!

End the activity by gathering the children in a circle and drawing conclusions once their fall detective adventure is over. Decide upon other specific signs of fall they have discovered in addition to the predicted ones or check whether their predictions were accurate and list them. Compare the drawings on the boards and notice similarities and differences, as well as the personal touches. Generalize and then start having a conversation about the known specific signs of fall, the ones they have not noticed on their hike (fall flowers, animal behaviour, etc.), things they would like to discover about this season and other activities they would like to do in the future. It is also important for every child to share what he/she enjoyed or disliked about this activity and whether/why they feared going on an adventure in the woods.

To end this activity in a joyful manner, make a pile of leaves and jump in!

Follow up!

- Have a special lesson on different types of fungi.
- Pick a specific sign of fall from the forest, carefully observe it and draw it in detail.
- Write on the boards the beginning and ending sounds, even the names of the specific signs of fall words.
- Use leaves to make math sets, count and compare them.

Leaf colour line

Get ready

Have you noticed how the leaves change their colours? It takes lots of different versions of the same leaf to melt into the soil. Let's observe how many different shades they get and make a line out of them. Shall we pick the green leaf of a poplar and see what other colours it gets until it becomes brown? You will need leaves from the same tree in different versions of colours. Dark green to light green, to yellow, to light brown, to dark brown. Find a place to play that has lots of leaves, or gather beforehand and scatter them around. This activity is best played in the autumn where you have an abundance of coloured leaves on the ground.

Go!

Explain to the children that they need to make a line with the leaves starting with the greener ones and ending with the browner ones or starting with the yellow ones, continuing with green and ending with the dark brown ones. It's up to them to decide what shades there will be in the line. Let them move around the area and gather leaves. Remind them that we only gather leaves that are already on the ground. Observe their ability to arrange the leaves in a chromatic order.

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 30 min.

AIM:
To discover season changes through natural material. To have fun!

CLASS ORGANIZATION:
Small groups

SUPPLIES:
Tree leaves from the ground

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

Back in the circle, ask the group which is their favourite colour of leaves. Did they like that they played with leaves? Why do they think the leaves change their colours? Did they find any particular leaf that was more interesting? What happens to the leaves when they fall on the ground?

Follow up!

- With younger children, the teacher can ask them to find pairs of light and dark colors (for example a light brown leaf and a dark brown leaf);
- Try to paint the chromatic line of leaves!
- Glue the line of leaves on a page to represent trees in autumn and add with crayons or colorful pencils the ground, the Sun, clouds, sky, birds and a rosebush to create a seasonal collage.

Leaves and colours

Get ready

This activity is suitable both for the classroom and the outdoors (provided you have access to hot water).

For any activity you do, it is recommended to have a set of generally valid rules (for example: "When one speaks, the others listens!") and rules applied to each type of activity. In the case of this activity, we can tell the children that our expectations from them are: to use the leaves for the game and not to put them in their mouth, nose or eyes etc.; to share them friendly, respecting the needs of everyone; to use the knives exactly as they are shown.

Previously, I prepared the necessary materials (walnut leaves, vine leaves, linden leaves, pine leaves, warm water, knives for children and chippers, transparent glasses, transparent measuring cups and glasses, plastic plates), making sure that I have the necessary quantity to carry out the activity.

Go!

Get the attention with the help of a bottle of tea and a glass. Poor yourself some tea and pretend it is very refreshing when you sip it. The children will want to taste it immediately.

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 25 min.

AIM:
Acquiring skills, highlighting the characteristics of some objects, using of specific tools and methods for investigating the environment

CLASS ORGANIZATION:
Small groups, individual

SUPPLIES:
Walnut/ vine / linden / pine leaves, warm water, knives for children, transparent glasses, measuring cups/glasses, plastic plate, dry towels

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

After tasting, challenge the children to guess the ingredients of the tea.

Tell the children the main objectives of the activity: to obtain, by cutting, an amount of leaves like the one presented by me; to place the pieces of leaves in the right glass, reading the label correctly; to properly measure the amount of warm water to be placed in each glass. Given the fact that the children work with knives, the most suitable class organization groups up to 5 children and working with one group at a time. Show them how to hold the knife, where to hold the fingers of the other hand when cutting and how to move the knife. Monitor the cutting for every child.

Then, each child is encouraged to name the leaves he/she uses at some point, to observe their characteristics (for example: texture, colour, origin, shape, smell, particularities). They read with or without help the labels on the glasses and put the leaves in the designated glass. Next, show them how to measure correctly the quantity of water used for each glass, to observe what happens after pouring water over a certain type of leaf. It is best if the teachers pour the hot water and the child helps by observing the measuring cup/glass and by making the observations.

They can see that the colour of the water changes differently depending on the type of leaves used. You can also show them that the colour changes if you add a little or more water into a glass with leaves.

Look back!

After the groups of children have finished the activity give them the possibility to make connections between the activity and real life (for example: what kind of tea do they know and if it is important to recognize a liquid by colour and odour).

The children are urged to prepare at home, with the help of parents, their favourite tea and post photos on the class group, giving details about the type of tea, its colour, the amount of water used.

Follow up!

- Experiments in which we compare different amounts of liquids and dyes: https://www.prekinders.com/sensory-table/
- Play water relaxation games.
- Search other types of leaves, which are used for making tea.

When leaves turn into.... pictures!

Get ready

When children wander to discover what surrounds them, a magic adventure begins. The environment invites children to explore, and read the reality in a scientific way, through a research method, action, and testing. This activity takes place outdoor, and in a lab. During a walk in the forest, or during recess in the school garden invite children to collect as many leaves as possible.

If necessary, this activity can take place in two different days to let the glue dry.

We suggest covering the final compositions with laminated sheet, so it will last longer.

Go!

After the observation of leaves and the analysis of their characteristics, show children examples of how they can create animals with leaves.

1st step: children collect in group natural materials (for example: leaves with different colours, shapes, size; twigs; berries…) in a park or in schoolyard.

2nd step: individual planning of their animals, Let the children experiment different shapes.

3rd step: In pairs pupils take turns in sticking

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 1st STEP: 45 min. 2nd STEP: 20 min. 3rd STEP: 45 min.

AIM:
Nature observation; details identification skills, fine motor skills; creative use of natural materials; pair work.

CLASS ORGANIZATION:
Individual and pair work, whole class

SUPPLIES:
Natural materials (leaves, twigs, berries, nuts), cardboard, glue, brushes, scissors, laminated sheets.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

leaves on a cardboard, and other materials to create their animal. Remind pupils to help each other's during the activity.

Look back!

At the end of the activity, children can show their artefacts to friends create a big poster and hang it up on classroom walls.

Follow up!

- Children can invent and write a story: the animal they created, can be the main character.
- Study the physical characteristics of these animals.
- This activity is also suitable for primary level.

Herbs – nature and health

Get ready

The lesson starts indoors with the teacher presenting different types of herbs to the children on the interactive whiteboard. The teacher talks about herbs' uses, functions and benefits for human health. A vocalized presentation in Bulgarian language can be accessed through the following link:

https://drive.google.com/file/d/1M1hgpA3rpJvPdJ_6oHeS8YMrE51llvNb/view

The teacher talks about herbs' growth, habitats, different ways of use and place of herbs in human's everyday life. It is important to be explained that herbs can be used in various areas of work: medicine, culinary, cosmetics, etc.

Go!

The teacher shows a herbs box – *The Magic Box of Herbs*. The box contains nine dried herbs: rosehip, chamomile, mint, St. John's Wort (tutsan), yarrow, oregano, thyme, marigold, linden. The children have the opportunity to feel the texture and smell the scent of each herb. Most herbs are usually used in dried state, so that is a good practice for the children.

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 90 min.

AIM:
To know what plants need to grow; to understand and explain benefits of herbs for human health; to recognize certain types of herbs, to acquire knowledge of methods of use and their functions.

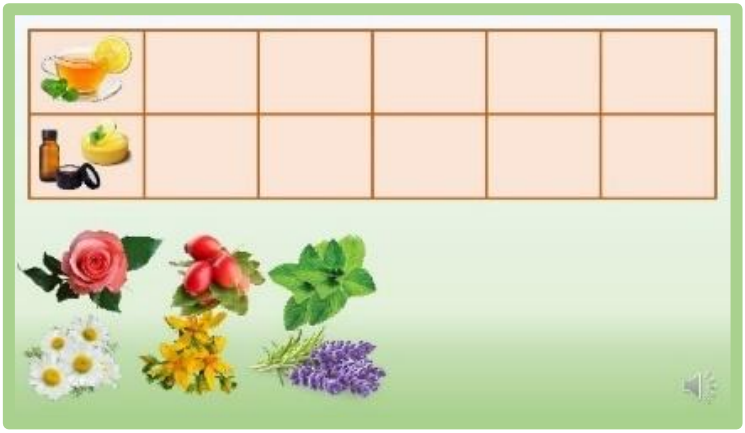
CLASS ORGANIZATION:
Small groups

SUPPLIES:
Presentation, dried herbs, flashcards, stones, wooden planks, glue, herb seedlings, gardening tools

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

The group discuses with the teacher the differences in herbs' scent and appearance – stronger/ lighter scent, flowers, colour, use of each herb, etc. The teacher explains that herbs can be used as remedy for various indispositions – toothache, headache, stomach-ache, rashes, etc. Next, the children play an interactive exercise on the white board. Children have to place the herbs in the correct group, according to their use.



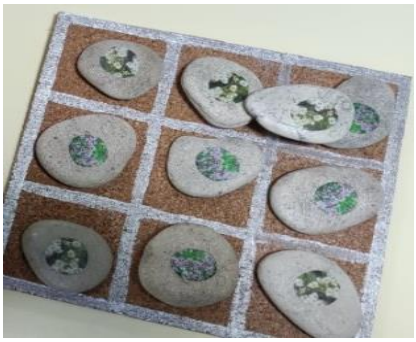
The next part of the lesson is taken outdoors, in the herb garden. The children will plant new herbs and enrich the garden. Chamomile, garden tea and lavender will be planted. The children look around the herb garden and try to recognize the herbs. They try to match the fresh herbs to the dried ones in the *Magic Box of Herbs*. A flashcard game can be played. The teacher shows an image of a child in some kind of disposition (headache, toothache, etc.) and the children have to point to the herbs that would help.

The teacher shows the children how to plant herbs and explains their needs in order to grow and become healthy plants. A discussion is held about plants care – outdoors and indoors, circle of plants' life. Then the teacher helps the children to plant the herbs.

After planting, a game is played – *Nature apothecary*. The children are divided in small groups. Each group has herbalist and customers. Customer has different needs – a rash cream, teas and spices. The herbalist has to offer suitable herbs for the customer's needs. After the game the children are taken to the open-air classroom. They will create games – memory game, tic-tac-toe game, using natural materials (stones, wooden planks) and images of herbs. The children work in small groups of two or three. Children play the games and talk about herbs in the process.

Look back!

Point out the similarities and differences between herbs and regular plants', the similarities and differences in herbs' use and functions. Point out the most important moments in plants' care and growth. Ask children about their emotions and feelings during the lesson.



Follow up!

- In following classes, we can start building a herb spiral. This will enrich children's knowledge, their teamwork and construction and organizing skills.

Magic potions

Get ready

The suggested activity can take place indoors, outdoors and even online. If done outdoors, make sure the place is safe for children and that there are some available aromatic plants (wild mint/ rosemary/ wild thyme/ basil/ oregano/ celery/ camomile/ lavender/ linden flowers/ etc.) or bring them along and gather leaves, flower petals, tree fruits or other natural elements that can be crushed. In terms of supplies, you will need, for each child, a metal bowl and other recipients where to crush whatever you collect, plastic cups and stones. This activity can be done in late spring, summer or fall. It can also be fit for *The Smell* theme.

To set up the learning context, gather the children in a circle, set the rules for the activity and show the area where the lesson is going to take place. This area can be delimited with barricade tape.

Go!

Grab their attention with tea (prepared it in advance) made out of one of the outdoor plants (thyme, mint, camomile,

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 30 min.

AIM:
To know different types of aromatic plants and find out about their importance.

CLASS ORGANIZATION:
Small groups, whole class

SUPPLIES:
Different aromatic plants, natural elements that can be easily crushed, metal bowls, stones, plastic cups, water.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

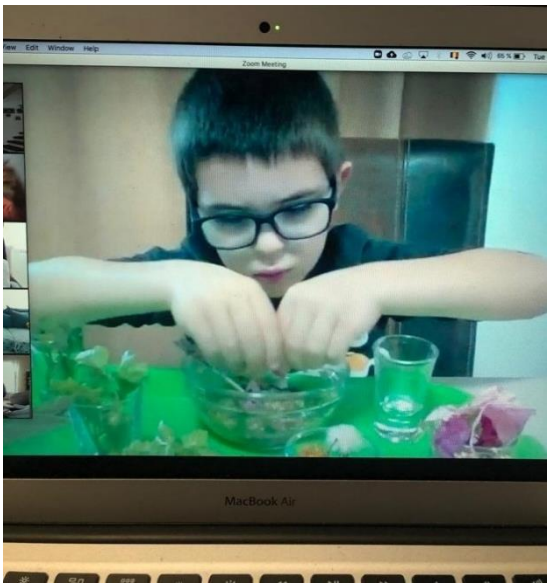
linden etc.) and talk about how it makes them feel and whether they enjoy it. Then reveal the theme of the activity by letting the children know they will each collect different aromatic plants and other natural elements to prepare their own magic potion. Join the kids and observe, and help them find the plants by using their senses. Encourage them to explore and search, and answer their questions. Explain why it is important not to pick more plants than necessary, use the fallen or withering plants and pick up fallen petals. Try not to pick flowers and use leaves that have already fallen. These should be included in the set of rules introduced at the beginning of the activity.

While the children make their choices, name the plants, explain their importance to human health or that some of the plants have been used as medicinal plants since ancient times, that they are also used as alternative medicine (when our tummy aches, when we are nauseous, when we have a headache, or we are low on energy etc.) We use them in herbal tea or as food seasoning, in house cleaning products or in perfumes.

Once every child has picked these plants or other natural elements, have them placed on a large tray and name them again with the children. To make sure the information stays with them, have them write the names and label them. Encourage them to use their smell and touch. Let them taste the edible plants explaining some are very aromatic so their taste is strong which makes sense to use only a spoonful or less in tea or food. Remind the children never to taste an aromatic plant without prior adult permission, explaining to them why this is necessary.

Then advise them to pick something from the tray and crush it in their bowl with a stone. It is the moment when they notice the variety of colours coming out of these plants and their strong smell that becomes even more pungent. Next, have them put the crushed plants in the plastic cups and pour water over them. Encourage the children, now that they have found out about the miraculous properties of some of these plants, to use their imagination and name their magic potions.

During these activities, the children came up with names such as: *„The Superpower Potion", „The Flower Rainbow", „The Elixir of Eternal Youth", „The Health Fairy"* etc.



Look back

End the activity by giving the kids one of the aromatic plants they loved to use at home with parents or, if possible, use these plants outdoors or indoors to cook. Continue to ask the kids what they enjoyed about this activity and if they believe they would like to use these aromatic plants in the future.

Follow up!

- Use the natural colors from the crushed plants to paint.
- Use plants and sort them based on different criteria for a math class.
- Discover the sounds in the names of the picked plants.
- Study the leaves of the plants and look for similarities and differences.

Natural perfume

Get ready

"Nature perfume" activity is designed for outdoor lessons. This activity should have short instruction times, there is offered a free time to practise, and focus on fun. The task is relying on children's personal knowledge and fantasy.

Children can work individually or in groups of 3 children.

The earliest forms of perfume were incense that release their smell when burnt and even the name comes from the Latin *per fumum*, which meant *through the smoke.* Ancient Egyptians learned to extract perfume from petals, Babylonian warriors combed perfumed oil into their hair and upper class Romans anointed themselves with perfume three times a day. Later, in the time of Louis XIV who was known as the perfumed king, France became the capital of fine perfumes.

Go!

Begin by telling the children that many flowers, fruit, herbs or spices have a very pleasant smell and since very old times, people tried to extract their smell and use it in perfumes or good-smelling products like

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 60 min.

AIM:
Develop creativity, personality, language skills, working individually or in teams.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Small bottles or other recipients, water

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

shampoo, soaps, odorants etc. Talk a little bit about the history of perfume taking into consideration the children's age and level of understanding.

Perfumes combine essential oils made of plants, human-made chemicals and alcohol. Some perfumes even use ingredients that animals give off. Some are a cocktail of as many as a hundred ingredients and it takes a fine nose to make them. Perfumes are often named after their main ingredient (for example *Cherry Blossom*) but they can also have an interesting name to attract the customer (for example: *Winter Plum or Secret Wish).*

Children are invited to create their own natural *perfumes*, using only natural materials for this, but without disturbing the peace of living beings. For example, children are offered the following aroma: soil + pine needles + sunlight = smell of needles and earth warmed by the sun. Each child should come up with a name for his "perfume" and explain what this smell is. Children are given fifteen minutes to explore the area and choose their scents.

Look back!

Back in the circle, ask children to smell the perfume created by the other groups. Ask them to try to guess at least one of the plants added to the mixture. In the end, have a final reflection on the kinds of nature scents children found, playing "Nature perfume" and discuss about the unbelievable variety of aromas of nature, that we not always have time to notice and estimate.

Follow up!

- Bring natural oils to the class and talk about their benefits. Use the natural oils whenever a child has a tummy ache or head-ache or just to cheer them up.

Stay away from me!

Get ready

Depending on the season in our local areas we can spot plants with toxic leaves, flowers or fruit. We will call them *Stay away from me!* Plants.

Our little students are already familiar with the consumption of berries such as blackberries, raspberries, cranberries or blueberries. These fruits are tasty and healthy. Nevertheless, besides them, we can also spot toxic berries like belladonna or ivy berries. There are plants that cause irritation upon contact with certain parts of them: leaves (the nettle), pollen, and juice from the stem. After a rainy season, mushrooms can spread on the meadows and forest floor and some of them are not friendly with children's skin. Some plants develop another method of protection- thorns (blackberry bush, wild rose bush, the hawthorn). Explore the area before activity and gather suitable information about spotted harmful plants.

Go!

Invite students to explore the area and guide them how to identify "Stay away from me!" plants and mushrooms. Take pictures of the

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 45 min.

AIM:
Identify plants or parts of plants in the environment whose interaction with the human body has unpleasant effects.

CLASS ORGANIZATION:
Groups, whole class, individual

SUPPLIES:
Plants from the local area known for their harmful effect on the human body, cameras, paper, pencils, coloured pencils.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

entire plant but also of the parts of the plant. This way they will be able to recognize the plant in other seasons. Explain them, which part of the plant is not friendly with our body and what are the effects of the contact or consumption. Collect a few leaves (and/or flowers) for drying by pressing. Ask your students to draw these plants. In the classroom, students can make an album with pictures, short notes, dried leaves/flowers and drawings. This album can be used for further outdoor explorations. "Are these plants specific to an area or can be observed in other places, too?"

Ask your students if these plants are poisonous (toxic) or have thorns? Help them understand that plants develop a defence mechanism to increase their chance to grow and survive.

Look back!

Wild berries are such a tasty treat! Yet, our students understood that it is better to be sure before touching or consuming less-known plants from less-known areas. Mark a new rule: Never eat things from the woods if you're not sure they're edible. Ask an informed adult.

Follow up!

- Similar activities can be dedicated to medicinal herbs such as chamomile, mint, celandine or marigold.
- Also, an investigation of edible wild plants would be of great interest. Some ideas: lure, nettle and dandelion leaves, hawthorn, rosehip and sea-buckthorn fruits.

Where does it grow?

Get ready

I prepared in advance fruit and vegetables that I purchased at the local market. For this activity you will need access to an area where there are fruit trees and a small vegetable garden. Also, if you choose to have blueberries, raspberries or blackberries, it would be very nice to locate a bush nearby. I asked the children to lay the fruit and vegetables in a line on a green tarp (the function of the tarp is to provide a monochrome background, so that the children can better see the fruit and vegetables). If you don't have a tarp you can use big black garbage bags with the same effect.

Go!

To ensure an active participation, we worked in teams of 7-8 children. Ask them to observe, feel, smell the fruit and vegetables and let them know that there will be a tasting session at the end of the activity (otherwise some might have disappeared ☺). Then show them the vegetable garden, the fruit trees and the bush. Next, each child takes a fruit or a vegetable names it and takes it to the place it grows in (vegetable garden/ tree/ bush). Also,

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 30 min.

AIM:
Matching fruit and vegetables with place of growth.

CLASS ORGANIZATION:
Groups of 7-8 children.

SUPPLIES:
Variety of fruit and vegetables, tarp or large trash bags.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

he/she will say the group it belongs to, if it is a fruit or a vegetable.

I placed 2 or 3 pieces of fruit or vegetables per child depending on the age (2 for four years old and 3 for five years old).

Look back

Appreciate the children's input and don't forget to wash the fruit, the vegetables and hands before the green snack. Yummy!

Follow up!

- Five year old children could say which part of the plant the fruit or the vegetable is (if it is the root, stem, leaf, flower or fruit) and where it grows (in the ground, or on the plant). Be aware that potatoes are actually special underground stems called tubers and not the roots of the plant.
- For the next lesson, you can begin again with the same fruit and vegetables (plus 1-2 extra as the surprise element) and ask the children to place the fruit and vegetables in the places they grow within 3 minutes. When they are done, the group can discuss and give reasons for every choice.

Spring and healthy food

Get ready

Spring is here and it is a great opportunity to take advantage of all that it has to offer. One of the most striking elements of spring are the flowers, fruits and vegetables of this beautiful season. How about we use these natural elements to create beautiful paintings and learn a little bit about what the fruit looks inside?

Go!

This activity can be done both indoor and outdoor. If it is done indoors, we will encourage families to bring flowers that they can pick from nature, fruits and vegetables to the school. In the case of doing it outdoors, the students themselves can pick the flowers and the fruits and vegetables from the school garden. For this activity we have to dip the flowers in the paint and stamp them on the paper creating copies of the shape of the flower in the colours they want, even combining different colours. This way, they will be able to represent beautiful spring paintings.

It seems that pupils always learn fruits and vegetables from their outer image, but they are rarely taught their cross section and inner shape.

CURRICULAR LINKS:

AGE GROUP: 3+

TIME: 60 min.

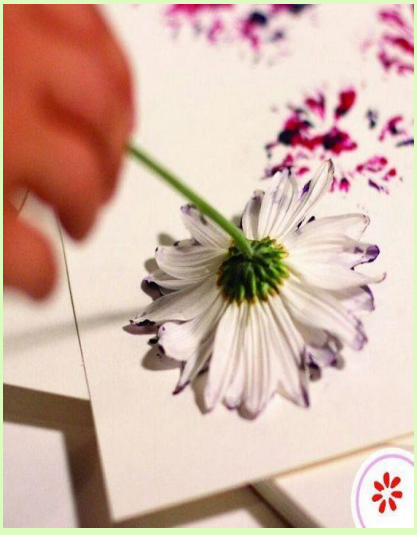
AIM:
To work with attractive painting techniques and learn different healthy fruits and vegetables from inside.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Flowers, fruits and vegetables, paint, paper.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:



The next step to work with fruits and vegetables will be to cut them in half and dip them in the paint in the same way we did with flowers. When stamping them on the paper, the exact shape of the fruit or vegetable cut will be printed, leaving a very representative image of it. How about if we try to create paintings combining fruits, flowers and vegetables?

Look back!

I cannot imagine a better opportunity than this to create an exhibition so all the students of the school can see the master pieces that the little ones have created.

Follow up!

- This activity can be done using any natural material we can find. The shapes and textures that nature offers us, and using it with painting, are infinite;
- They can sing this song in order to learn colours with flowers at same time they work: https://www.youtube.com/watch?v=kBoHLbIicxY.

The flower that makes kids smile

Get ready

Its name is *Păpădie* - *Dandelion*. It looks like a little Sun. The dandelions grow spontaneously on sunny meadows, waterfronts, roadsides or in parks. A beautiful legend said that the dandelion brings joy in children's hearts and big smiles on their faces.

Go!

1st activity. Guided observation of the plant. New information about this plant added, especially on the use of this plant in the treatment of some diseases, in cosmetics and in the kitchen to prepare salads or jam. Older students can draw the plant as best as they can and record a few observations. The complexity of the activity depends of the students' age and level. Some pictures can be added, too.

This plant has a beautiful legend. Tell or read the legend to the students.

2nd activity. Retell the story following the sequence of the events and pointing the characters of the story: the angel, the tulip, the rose, the violet and the dandelion. Which characteristics of each plant are highlighted? What other plants with the same

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 2 x 50 min.

AIM:
Practice observation and communication skills. Revise knowledge about plants and their benefits; make a painting using natural elements (flower and leaves) as tools.

CLASS ORGANIZATION:
Groups, whole class, individual

SUPPLIES:
Magnifying glasses, paper, yellow and green paints, paint brushes. Optional: phones or tablets (for taking pictures), tooth sticks, or bamboo sticks.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

characteristics could be introduced in the story? What other flowers have a delicate perfume, soft petals or bright colours? What are the plants' needs?

Invite your students to paint using the flower and the leaves of the dandelion as painting tools. Soak the flower in paint and print on paper. Do the same with a leaf. Usually, children like to get dirty with paint but if they don't like it, they should use brushes to cover the leaves with paint and for the flowers use a thin stick (a tooth stick) stuck in the stem. The stem of the dandelion is empty so you can do this easily.

Look back!

My students remembered the custom of making necklaces from dandelions' stem and flowers. Maybe a single necklace with one flower from each child will be a nice reminder of this activity. As we already use flowers for observations and painting it is better not to waste the stem. Of course, we will not harm the roots!

Follow up!

- Also see the activity *What makes you smile?*
- Read *The Legend of the Daffodil*
- See *The Daffodil* ppt.
- Early in spring, prepare a healthy salad using young, fresh dandelion leaves!
- Dandelion seeds were the source of inspiration for another activity, *Nature's Helicopters*.

Slide, slimy snail!

Get ready

It all started from an empty snail shell discovered by children during one of our free explorations. Soon they spotted some snails sliding graciously on the wet grass. There were a few days with heavy rain. Children observed the slow motion of the snails, their reaction to touch and became curious to learn more about these life forms.

Go!

"What are snails? Let's take a look. Slowly and carefully. What can we see? What does it look like? How long and what colour it is? What does its body look like? Touch it gently! How does it feel like? Is it soft or hard? Is it dry or wet?"

"What can we see on its head? Any eyes, mouth, antennas? Is there any tail? What about the shell? What colour is the shell? Are there any patterns on the shell? Colours? Is it soft or hard?"

"How does the snail move? What happens when you touch the snail? What happens when you touch its tentacles? How many tentacles does it have?"

The snails are quite interesting creatures. Snails do not have legs but their muscular body helps them slide from one place to another. A mucus secreted by the snail's body facilitates these wave-like movements. The mucus (or slime)

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 45 min.

AIM:
Knowledge about snails through direct observation; observation of the shell and reproduction of this pattern.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Snails, snail shells, large jar, gardening soil, mushrooms, leaves, lettuce, camera, paper, pencils, paints, paint brushes, pebbles, acorns, chestnuts, small cones, leaves.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

reduces friction between different surfaces and snail's body protecting them from injuries. In addition, the slime maintains the body moisture. While moving, snails leave behind a trace of mucus/slime.

The most interesting/striking feature of snails is their shell. It is a spiral shell - a hard structure composed of calcium carbonate. Did you know that calcium carbonate is the same substance that form our bones and teeth? The snail's shell keeps growing as long as the snail grows. Moreover, if the shell is broken (only minor damages!), the snail can repair it. Snails are born with their shell on back but, at the beginning, the shell is soft and unformed. This soft protection soon hardens and functions like an armour for the snail throughout its adult life.

Now, let us take our paper and colouring pencils and trace spirals. All kinds of spirals. You can also use paint and brushes. "Can you trace a spiral as large as the sheet of paper without lifting the pencil from the paper?" Trace the spiral starting from the middle of the paper. Trace another spiral starting from the edge. Trace spirals from the right to left and from the left to right. It is a good practice for writing. Inspired by the snail spiral, the children reproduce this intriguing shape with pebbles, leaves, chestnuts or acorns.

Look back!

This activity was carried out with older students (1st graders, 2nd graders) also. With these students the snails' body observation was more elaborate and included discussions on snails' sensory organs, snails' respiration and reproduction. They also observed shells using magnifying glasses and a simple digital microscope (3rd image).

Follow up!

- Snails' races are still organized in some parts of the world.
- Study Henri Mattise, *L'Escargot*. Can you also make a cut-out called *The Snail?*
- Search for other spiral pattern in nature.
  https://www.britannica.com/animal/snail,
  https://www.youtube.com/watch?v=mHvCQSGanJg.

Worm farms

Get ready

Tell the children they are going to build a worm farm. "What are worms? Where do they live? Where can we more likely find worms: in sunnier, warmer places or in shadowy wet places?" Divide the class into two, give them some smaller tools to dig with, and ask them to search for an answer. Participate yourself in the digging for 3 minutes in each group. After about 6-7 minutes call them back, count the worms and answer the question. Now, study the worms that you found.

Go!

Here are some possible questions for the guided observation: "What do worm look like? What colour are they? What do you see on their body when you look with a magnifying glass? What does a worm feel like? Do you think they have a head and a tail or they can move both ways? What senses do they have (can they see, hear or feel)? What do you see when you look through their body in the sun? Do you notice the pink hard ring? What do you think it is? What do you think they eat? Do they lay eggs like insects? Why do they come out after rain? Are they any good for the environment?"

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 45 min.

AIM:
Conduct a worm investigation, understand the ways it benefits the soil and how it lives.

CLASS ORGANIZATION:
Whole class or groups.

SUPPLIES:
Trowels, container, pebbles, garden soil, moist leaves, water, sticks or twigs, paper, pencils, rulers (for older children), magnifying glasses.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Here are some quick worm facts:

- They have a segmented, slimy, wiggly body;
- The pointy head they move forward is their head, the round end is their tail;
- The top third of its body contains a pin-like brain, 5 pairs of hearts and the stomach;
- The pinkish saddle-like segment is called a *clitellium* and it is only found on adult worms. The clitellium produces the mucus that helps the worm move;
- They don't have a skeleton or lungs (they absorb oxygen through their skins);
- They do have a mouth and feel the vibrations but they do not have eyes;
- They don't have ear but they feel vibrations and hide;
- They move by stretching their muscles. Tiny *bristles* cover their body and help the worms move and not slide. You can hear the bristles if you put the worm on a paper, or you can feel them you take worms in your hand.
- Worms are not boys or girls. They are hermaphrodites and sometimes they act as boys other times like girls; and yes, they lay eggs;
- They can eat half their weight a day; their food consists of decaying rests of plants; the cast or casting is the name of their poo. It looks like a small mud ball and it is full of broken down rests that contain nutrients;
- They move house after rain to keep their body wet; they sleep during winter deep in the ground after they've munched the leaves carried in their burrows;
- If their body dries, worms die; however, they can lose parts of their tail and live. After a while, the tail will grow again;
- People call them the *helpers of the gardeners* and are very useful because the tunnels loosen the soil so plants can stretch their roots and they let the oxygen and the water get deep into the soil. Their casting is very nutritious for plants.
- They are also champions of decomposing and very prolific in compost making.

With bigger children, you can even make a scientific drawing of the worm and measure it with rulers. Please remind the children that worms are living creatures and they have to be treated with respect and responsibility (it is a good idea to keep their body wet and always handle them with care).

Now, it is time to build a worm farm, which is a home for worms. You need a container with tiny holes in it. "Why do we need the holes?" (to allow for oxygen circulation). The children should pour first a layer or gravel, then add soil that is crumby, moist leaves to decompose fast (dry leaves only take of the moisture of the soil), a little bit of water, sticks and another layer of soil and leaves. Then add the worms and sprinkle a little water on them to keep them wet. Keep the container in a dark place and water it from time to time.

Look back!

Get the children in a circle and ask each to name something new they have learnt about the worms. Ask them how they felt about them before and after the activity.

Follow up!

- The second and third days take the farm in the light to be studied and look at the tunnels; they should be visible by now; also regularly sprinkle water on the surface; after several days, let the worms back in the ground and use the soil in the worm farm for plants;
- Read *Yucky Worms* by Vivian French or *An Earthworm's Life* by John Himmelmann.
- Click on this link to see a time-lapse of worms compositing: https://www.youtube.com/watch?v=McQYDcqc0Nk

Be a bee!

Get ready

Start by making sure you have some bee products to investigate with the children. We prepared pieces of honeycombs with honey, 3 types of honey of different colours, a bee keeper suit and a bee hive. In addition, we had some magnifying glasses.

Go!

Here are some activities that you can run on a bee-day:

1. If it is a sunny day, approach a bee collecting pollen with a magnifying glass, so that the children could observe the stripes and the pollen baskets. Talk about the combination of black and yellow in nature and how we humans use the same combination to warn of danger (think of construction tapes, fire-fighter uniforms or even the Covid 19 signs).
2. Bee society is made up of queens, worker bees and drones. Drones are welcome to the hive, but when winter comes, they have to leave the hive. You can have a large rectangle, name a bigger girl the queen, the other girls can be working bees and the boys can be drones. The queen

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 40 min.

AIM:
Learn about honeybee anatomy, social life and care in a playful way.

CLASS ORGANIZATION:
Whole class and groups.

SUPPLIES:
Magnifying glass, bee suit, hive, honey from 3 types of flowers, honeycomb

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

shouts out different names of seasons. The boys can stay unless the queen shouts *Winter.* If this happens, the boys have to quickly leave the hive if they do not want to be stung by workers.

3. Talk about the special partnership between beekeepers and their bees, and how the beekeeper takes care of the colony in exchange for honey. Let the children try on a bee suit and invite a beekeeper to present the parts of a bee hive and even take out some honey to taste.
4. Observe that honey comes in different colours and ask the children to think of a reason. One bee produces less than a tea-spoon of honey during her life time. So, we should all cherish the honey. Prepare lemonade with honey and fresh mint from your outdoor playground. Use straws to drink to imitate *proboscis* - the hollow straw-like tongue of a bee. Touch wax and extract honey from the honeycomb by pressing it. Warning! Working with honey outdoors can attract other bees and wasps.
5. Bees are the most efficient pollinators in nature. Play the following game: ask some children to place 10 walnuts (representing pollen) next to a group of flowers while the others build honeycombs out of sticks as big as your hand. The first group comes back and through a *waggle dance* and body language, one child signals where the patch of flowers with the nuts are. If the second group finds the nuts they bring them and put them in the honeycombs, if not, a second child from the first group can try through dance and body language to tell them where the *pollen* can be found.

Look back!

Gather the group of children in a circle and ask each to name something new they have learnt about bees and honey.

Follow up!

- Explain how and when a bee stings and practice staying motionless when you have a bee on you by using a toy bee.
- Celebrate *Bee Day* with a honey cake and a poster on bees.

Making animals

Get ready

We start working on the issue of animals, what is its classification and the characteristics of each animal and to do that, there is no better way than creating our own animal in the school garden. This way, the children will learn the parts of an animal and how many types of animals are there.

First, we make a small introduction about animals. We discuss about what benefits they bring to human beings.

Go!

Before starting, each of the children has previously collected branches, stones and leaves from the garden/ forest. They will also form groups of four or five children. The teacher name a group from the classification of animals (ex. insects/ fish/ mammal/ bird/ amphibian / reptile/ arachnid etc.) and they have to think about which animal they are going to make.

When they have done, each group says the name of the animal they have made and the reason the animal belongs to the group (E.g. The butterfly is an insect because it has a head, body and thorax, it has got 6 legs and an exoskeleton).

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 90 min.

AIM:
To know the parts of an animal and the different kinds of animals.

CLASS ORGANIZATION:
In pairs, groups and whole class.

SUPPLIES:
Stones, soil, leaves, sticks.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

And so, they will do until they see all the groups of animals.

Look back!

This is an interesting activity for children to know the different groups of animals, especially experiencing it by themselves making their own animal and checking if they have done well knowing the characteristics of each one.

Follow up!

- The following link explains how many kinds of animals are there and what are their characteristics.
  https://www.youtube.com/watch?v=PHYi4fqeEdw

Scientists on the new continent

Get ready

"Scientists on the new continent" activity is meant for outdoor lessons. This activity should have short instruction times, there is offered a free time to practise, and focus on fun. The task is relying on children's personal knowledge and fantasy.

Go!

"Scientists" came to a new continent, around is unfamiliar nature. It is necessary to identify all plants, trees, etc. and give them new names. "Scientists" are divided into several groups (approximately 4 groups) of 3 people. Each group selects a plant, studies it, and remembers all its peculiarities.

All scientists come together in a circle, and each group describes its plant. For example, the first group tells: the flowers are pink, etc. Other groups of scientists go in search of this plant. When they find him, they return to the circle. If the plant is found correctly, the new name is given, for example, a sun-shaped chamomile, etc. Then another group of scientists talks about their plant, etc. When all the plants are found and they are given new

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 60 min.

AIM:
Develop creativity, personality, language skills, working individually or in teams.

CLASS ORGANIZATION:
Whole class and groups

SUPPLIES:
-

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

names, they can be taken home, to the school, and by definition, their real names can be found there.

Look back!

In the end, have a final reflection on what kind of plants, children found, playing "Scientists on the new continent".

Offer the children opportunities to talk about plants' differences and similarities.

Follow up!

- You could play *Scientists on the new continent* with animals or with trees.
- You can ask the children to draw and write the names of the parts of the plant and make a *Scientists' Journal*.

I spy with my ... EXTRA-eye!

Get ready

A magnifying glass is one of the first tools a child can handle. A magnifying glass (hand lens) helps us observe things more closely. It is a kind of EXTRA eye! In this activity, our students practice the use of this simple tool.

In addition, they practice the use of the keywords: bigger, smaller, same size, right, left, up, down, next to, close to, behind, front of, back, on, under, closer, further, shapes and colours.

Go!

Part 1. Invite students to share what they know or think they know about this tool, including how it works and why it is used.

Provide them small natural elements: leaves, petals, insects (not alive), tree bark, woody fruits, acorn caps, pebbles, shells. Let them chose an item. What does it look like? Encourage them to describe the small element using as many descriptive words as possible. Help them find comparison terms.

Example: "How big is this acorn cap?" "This acorn cap is *bigger* than the fingernail of my thumb. It is *round*. I can see some fine dots

CURRI CULAR LINKS:

AGE GROUP: 4+

TIME: 2 x 30 min

AIM:
Develop observation skills
Practice the use of the magnifying glass
Practice maths vocabulary for localization, comparison of dimensions, geometric figures

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Different types of magnifying glasses, small natural items: pebbles, shells, leaves, insects, insects' eggs, woody fruits, flower petals, flower and leaves fragments, paper, pencils, coloured pencils.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

on the cap. " "Can you show me a pebble *smaller* than this acorn cap? Can you find a leaf with the *same size*?"

"How about this leaf?" "This leaf is green. I see a brown spot *on the left side*.," "Look *on the back* of the leaf. What can you see?" "*I can see the veins.*" "Put the bigger leaf next to the small pebble".

Distribute magnifying glasses to students. Give them several minutes to experiment with the tools, using trial and error to discover the most effective ways to observe the object on their palm. Students can work in pairs. Ask them to share with the colleague their observations. Help them find the most appropriate words to describe what they see.

Invite volunteers to demonstrate and explain their method for using a magnifying glass. Guide their discussion by addressing these elements:

- Which part of the magnifying glass to hold
- How close the tool should be to the eye
- How close the magnifying glass should be to the examining object
- Whether closing the other eye is helpful
- Whether using one eye is better than using the other eye
- Whether they observed something new or different at your object when they used the magnifying glass. What was that?

Have students also try viewing faraway objects to let them discover the limitations of the magnifying glasses.

Part 2. Invite your students to pick up a new item/object. Ask them to draw the object as they saw with their eyes and through the lens. Grid paper is helpful.

Use the next questions to guide a discussion about the exploration:

"Which of your senses does a magnifying glass help? What was the best way to use the magnifying glass? What were you able to see by using the magnifying glass that you couldn't see without? What things you would look at with a magnifying glass? What things you would not look at with a magnifying glass? Explain. Do you know other tools that help us to see something close-up?"

Look back!

These inferences help teacher to underline the main ideas of this activity:

- A magnifying glass enhances the sense of sight.
- Hold the magnifying glass by the handle, with the lens close to the eye. Move the lens and the object closer to and further from the eye until the object comes clear (into focus).
- Small details cannot be seen with just the eyes. These details can often be seen only through the lens.
- Many things are interesting to observe with a magnifying glass. We can better observe small details. However, if some objects are too tiny, too far away, or lacking details they cannot be observed through a simple magnifying glass. There are other tools (with a system of lens and mirrors) such as microscopes which can reveal tiny details of the objects. Very important! In some situations, using a magnifying glass could be harmful! Looking closely at a bright light source or into an animal's mouth it is not a good idea!

The next question helps students to draw a conclusion:

- How does a magnifying glass help us in a science investigation?

A magnifying glass lets us observe more details than we can see with just our eyes. This helps us describe something more fully and allows us to make more accurate comparisons between objects.

Follow up!

- A simple digital microscope is a useful and easy to use tool even for young students. It works simply connected to a laptop.

The inclined plane

Get ready

Playing with toy cars outside? Hooray! This is even playing with a scientific touch! Make sure you have enough toy cars for all the students! Reinforce the rules of the outdoor activities and introduce any necessary rules specific for this activity. Students are expected to collaborate, share the toys, and take turns. You can either let them explore and discover the secrets of the inclined place before the actual lesson begins or you can let them know from the beginning that the activity will end with free play and exploration.

Go!

Introduce to your students the wooden boards, the thick tree branches and the other materials prepared for the activity: pieces of fabrics, plastic bags, net of textile yarns, aluminium foil etc. Initiate a first session of investigations. Ask them to observe, name, describe the materials.

Now, let us put these materials at work. Challenge them to move the toy cars on the board without touching them. Can they do that?

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 25 min.

AIM:
Observe and describe different types of surfaces; observe and compare angles/inclinations; identification of angles in bodies in the environment and observation of the effects of angles on the movement of bodies

CLASS ORGANIZATION:
Small groups

SUPPLIES:
Branches of various sizes, wooden board, toy cars, plastic bag, different types of nets (wire, yarn), pieces of fabric.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Encourage them to investigate, to explore. Very soon, they successfully move the cars on the inclined plane. Guide your students' explorations with questions like these: "How did you make your car descend on the board? Can you make it move faster/slower? How? What can you tell me about the surface of the board? Is it smooth or rough? What do you think it will happen if you cover the board with another material? Try one of these materials. Is the car moving faster or slower now? What about the inclination of the board? If you incline the board more, the car will move faster or slower?" Encourage your students to explore, to test different ideas but remember: this is a scientific play! Test one idea, change only one variable at a time. Make sure all students have access to materials, have enough time to explore and share ideas.

Tell them that the inclined board is one of the first tools used by the human beings and its name is *inclined plane*.

Look back!

Finally, children make connections between the inclined plane and real life. For instance, when they travel by car, the speed of the car is higher when descending a hill; the driver must control the engine. Moreover, the car moves slower on a bumpy road than on a smooth street. Remember your last sleigh or ski experience?

As the inclined plane angle increases, so does the speed at which the car descends the plane. However, what happens when the angle increased too much? Can the car descend on the slope or something else happens? Investigate!

Still interested? Check this: a lighter car will descend on the inclined plane faster or slower than a heavier car? Investigate!

Follow up!

- Look closer at other simple tools such as: the scales, the pulley and the lever.
- Change the perspective! How can the car climb on the inclined plane? Investigate and discover at least one method in order to move the toy car from the base to the top of the inclined plane.
- A tricky question: "I have two cars, a bigger car and a smaller one. Test them on the same inclined board. Which one of them will get off faster? The bigger one or the smaller one?" Most students will favor the bigger car. It is tricky because the car's speed depends on weight. If the smaller car is in fact heavier than the bigger car, it will be the faster! Investigate!

Pulley with muscles

Get ready

In everyday life, we often use devices that contain simple tools such as levers, pulleys, gears (toothed wheels), and inclined planes. This activity aims to acquaint students with the use of one of these simple mechanisms, the pulley. This tool is very helpful when we have to move up and down heavy objects. It acts like extra muscles for us.

Go!

Ask students to half-fill a bucket of stones and carry it next to a tree. The bucket has to be lifted to the first branch of the tree where they will build a birdhouse. The children will realise that the bucket is too heavy for their little arms. They are challenged to find a solution to the problem. Here are their first ideas: ask an adult for help, join forces, make a ladder from materials located in the area, climb on another child's shoulders or fill the bucket with less stones. Show them the pulley and a rope. Tell them that these items represent another solution to the problem. "What are these objects and how can we use them to lift the bucket?" Very soon they pull one end of the rope through the wheel, tie the bucket to the other end (help them and make sure they

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 40 min.

AIM:
Practice use of the pulley; introduce concepts such as: forces, weight, counterweight, push, pull, heavy, light.

CLASS ORGANIZATION:
Small groups, whole class

SUPPLIES:
Two pulleys, rope, stones, bucket or strong basket

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

make a solid knot) and place the hook on the branch. With great enthusiasm, children will take up and down the bucket, filled with stones or empty, and have a lot of fun. After each one of them challenge his/her power in lifting the bucket with the pulley, introduce this simple tool and describe its parts: wheel, axle, rope. Talk about weight (the stones) and counterweight (in this case their own weight), about forces (push, pull, friction). Then hang the other pulley. "How does it work?" Let the children play and experiment. "Can we combine these two pulleys in a more efficient system?"

Look back!

Make sure you have time for reflection and conclusions. Use these questions as a guide: "What is a pulley? What are the parts of the pulley? What is a pulley made of? What do you notice when you lift the same object with and without the pulley? Does the task become easier or more difficult? What happens if you use a system of pulleys?" Connect pulleys and systems of pulleys to real life experiences: the crane, the water well, the cable car, the elevator, the zip-line the pulley used by construction workers to lift up materials to the upper floors. Once the closure was over, the children were eager to play again.

Follow up!

- Ask the kids whether Rapunzel could have lifted the Prince with the help of her hair, using the window sill as a pulley.
- Look closer at other simple tools such as: the inclined plane, the scales, the lever or the gears.

Clever lever

Get ready

The chimps have already discovered how to use simple levers to get food. We will investigate levers, today. Discovered by humans in prehistoric times, the lever has been used for excavations and for movements of large and heavy things. (source: worldencyclopedia.org). Today it is incorporated into many tools and mechanisms used in everyday life like: scissors, see-saw, mousetrap, pliers, stapler, wheelbarrow, hoe, boat paddle, car paddles. To start this activity you need only one thing: a mystery! I gathered the children around and told them in a low voice that I got this piece of information that some pirates hid a treasure somewhere around. They hid the treasure under a big rock. Can they find it?

Go!

They immediately spotted several rock formations. First the children turned around the smaller rocks. Then, when they came to the big rocks, at least one or two children in the group naturally turned to sticks for help. I asked them why they would use a stick? They showed me that if they push the stick

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 30 min.

AIM:
Understand use and function of simple tools; develop problem-solving skills

CLASS ORGANIZATION:
Groups of 5-7 children

SUPPLIES:
Sticks, twigs, rubber bands, rocks, stumps, logs

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

under and pull, the big rock will move. I asked them what was easier: moving the rock with bare hands or with sticks?

Next, I asked them to find twigs, thin or thick, long or short, the ones they think work better. With a small pile of sticks/twigs in front of us to test we get the answers to the following questions: „What works better at turning the stone around: thin sticks or thick sticks? Short sticks or long sticks? Dry twigs or freshly broken twigs? Shall we put the lever next to or under the stone? Shall we push on the stick, pull or lift the stick? Are two children using the lever at the same time more efficient than a single child?"

Look back!

Once each child made several lifts, we gathered in circle and tried to explain in simple words how this simple machine works: how we use force and what happens? Finally they come with examples of objects that we use today based on the lever principle. They could name the car jack, the see-saw and the broom.

As for the treasure? It is still there…somewhere... So, why don't you use a lever to discover it?

Follow up!

- Read about lever from children's encyclopedia.
- Analyze the lever principle in common objects.

Buoyancy

Get ready

All teachers know how catchy *sink or float* activities are for little children. Why not spice it even more up by taking it outside, next to a puddle or a stream. The rules for this lesson would be *Stay dry!* if the weather is not warm enough and *We place gently things on the water*, in order to avoid throwing things.

Go!

We will experiment with some things from nature to see them if they float or sink. However, since we are big scientists in disguise, we will work with a worksheet to record our predictions and record the results of our experiments.

On the worksheet, children notice the objects to be tested (twig, stone, leaf, dry grass). First, the children find the objects in the nearby environment, and then they circle pictures with float/ sink to make their predictions. They will use their previous experiences or logical deduction to make the predictions. „What do you think, the twig will stay at the surface, meaning that it "floats" or it will sink and go to the bottom? Why do you think so?" Then they get the opportunity to investigate the phenomena and challenge their answers.

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 30 min.

AIM:
Understand concepts like sink or float, buoyancy
Develop inquiry skills

CLASS ORGANIZATION:
Whole class**,** groups of 4-5 children

SUPPLIES:
Sticks, twigs, leaves, grass and stones, worksheet, pencils

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

After experimenting with each natural element, we discuss what we observed. Example: „What happened to the stick? Did you say that it would sink or float? Was your prediction correct? Why do you think it didn't sink/float as you predicted? If you were right, please circle the happy face".

Surprisingly, most of the 3-4 years old children participating to the activity, made three of four correct predictions based on previous experience and observation of the object. At the end of this activity, all children could use the term sink or float correctly. With children aged 5+, define buoyancy – the ability to float in a liquid and name the thing that is very buoyant and the one which is not buoyant at all.

Object	Predict	Face

Follow up!

- Let them choose other objects to be tested. They will discover that some things float not at the surface but somewhere, in the liquid!
- Experiment with plastic and talk about the plastic pollution of rivers, seas and oceans.
- Discuss which material is best for making a boat and why.

Season signs

Get ready

Each season has some characteristic signs that we can encourage children to observe. We start by choosing a season and making a list with as many signs of the season as we wish the class to observe. After that, we divide those signs into distinct categories.

Then we create a worksheet for the class only with the categories, so students can write down on their own the signs they will discover when they explore nature.

The class is divided into groups. This is an observation game, so even though the class can move around freely, it would be a good idea to encourage them to stop from time to time and take a more attentive look around them.

Go!

The teacher explains to the children that their task is to discover the signs characteristic of the season; one student from each group will record on the worksheet the signs that the group observes.

The list we have created is indicative not mandatory. Students identify as many signs as they can; also, they are free to expand the list

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 90 min.

AIM:
Develop observation skills; develop team work skills.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Pencils, List, Hard surface for writing

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

if they want. Other teachers will accompany the groups and ask questions that will facilitate the process if children need extra help.

Groups can spot signs they may already know from previous experience, but the teacher will encourage them to observe nature using all their senses: look around, listen, feel the smell, touch, describe their discoveries, sensations and feelings.

At the end of the activity, each team shares the signs they have recorded with the other teams. If we want, when back in the classroom, every child can represent their favourite sign of the season through painting or drawing.

Examples of Autumn Signs:

1. Signs of weather and sun ● The air is starting to get cooler, especially in the morning and evening ● The temperature goes down compared to summer ● The air smells a little different ● In the morning, at times, it is foggy ● The air changes direction and the weather changes abruptly, e.g. it is raining all of a sudden ● Daylight begins to soften – both its intensity and quality change. ● The days get shorter and nights get longer.	2. Signs of plant life ● Leaves of deciduous trees begin to change colours (orange, yellow) and fall to the ground (except evergreen) ● Autumn colours: red, orange, yellow and brown. ● Acorns, walnuts, chestnut and pine cones begin to fall to the ground. ● The vegetables don't grow so fast. ● Autumn wild flowers sprout: crocuses, cyclamen, chrysanthemums and more. ● What are we eating during this season? Pumpkins, apples, pears, chestnuts, walnuts, almonds. ● After rainy days we see a lot of mushrooms.
3. Signs from animals ● Birds begin migrating south, to warmer places, for the winter: swallows, wild ducks, geese, storks, etc. ● We are seeing fewer bugs like butterflies and ladybirds because they take shelter for the winter. ● Some mammals are preparing to fall into hibernation (hedgehogs, bears) and eat a lot to collect fat. Other animals make provisions in hollows and burrows.	4. Other signs, empirical ● The soil becomes softer. ● School starts. ● The holidays are over. ● We wear warmer clothes and boots.

These signs characteristic of a season may vary depending on the area.

Look back!

Discuss about the activity: was it easy to find the signs of the season? Did they face any difficulties? Do seasons change from day to day or do they have transition periods? Let the children share their thoughts and feelings with you.

Follow up!

- This activity can be adapted for any other season.
- Create *The Big Book of Seasons* - an album about seasonal characteristics detected by students and recorded through drawings, paintings, photographs, observation files, worksheets and experiment results. Collecting records from several consecutive years, we can demonstrate possible variations in the succession of seasons.

Drawing between science and art

Get ready

"Science illustrators are artists in the service of science."

One of the first drawings made by any child are a flower and a butterfly. Even if they are naïve, these drawings capture important characteristics of these life forms like petals, leaves, wings, antennae. With age, children can acquire the ability to observe beyond the known, obvious features and to record through drawings accurate observations.

A century ago there are no cameras to record your observations related to the environment. If you were a botanist, entomologist or ornithologist what could you rely on to record your observations? Pencil and paper. Drawings, sketches, diagrams, notes. Maria Sibylla Merian was one of the first naturalist who studied insects directly. She collected and observed live insects and created detailed drawings. Also, she was the first "scientist" who observed and described the life cycle of the insects, the metamorphosis process. Her life was driven by her ongoing curiosity and sense of wonder.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 50 min.

AIM:
Developing abilities for careful observation of life forms and drawing representation of the specific features of the living things; developing vocabulary for describing the living things.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Pencils, colour pencils, crayons, felt pens, paper, erasers, sharpeners, magnifying glasses, Maria Sibylla Merian ppt., insects embedded in transparent plastic, real insects, real plants, detailed pictures /representations of insects/ birds/ plants

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Go!

Introduce to your students basic information related to this extraordinary woman's work. Emphasize the attention to details and consistency with which she followed and represented stages in the life of an insect or plant. Even if we are a beginning artist, it is important to include in our science journal accurate sketches of the insects we see. We can start by copying other drawings or photographs, but our goal should be to draw from actual insects that we find or catch. Do not worry about your drawing skills, the more we practice, the better our drawings will become.

Invite students to choose a "model" for the next activity (a real one or a picture). Ask them to take a close and careful look at the insect they want to draw. Instead of trying to draw it all at one time, it's better to break it down into pieces. Don't worry about the little details at first; just look for shapes they recognize and can draw. It might help to think about simple shapes like circle, oval, rectangle, triangle, or to think about the shapes of common items: egg, crescent moon, ice cream cone, leaf, stick.

Sometimes it is helpful to draw the middle part of the insect first and then think of it as a clock. Where are the legs? At 4:20, 6:30, and 8:40? Where is the head? Where is the abdomen? You also want to think about sizes. It is impossible to make a decent, life-sized drawing of some of the very tiny insects (ant!). Instead, for every insect, large or small, make a line to show its real size, then draw it whatever size you want. What is important is to show relative sizes. Is the head the same size as the body? Half the size? Twice as big? Figure out how big each piece is compared to the other ones, then lightly sketch the shapes you need together. When they have drawn all the pieces, they can erase or adjust any that doesn't look like they want them to. After they have everything in place, spend some time erasing extra lines, making lines at joints, points, and special features darker, and adding shading to show different textures. The final touch belongs to the colours.

Display the children's works next to the originals and give them the opportunity to present their drawings. Encourage them to analyze the work of the colleagues, appreciate the accuracy of representations offering a constructive feedback.

Look back!

This activity is a great opportunity to improve your students' observation skills; they become more attentive to details, appreciate the dimensions better, recognize shapes, colors and patterns in the natural environment. In the same time, they develop their vocabulary by analyzing their personal work but also that of their colleagues.

Maria Sybylla Merian, Pineapple with cockroach

Leonardo da Vinci, Codex page

Follow up!

- https://www.britannica.com/biography/Maria-Sibylla-Merian
- https://www.botanicalartandartists.com/about-maria-sibylla-merian.html
- The most famous science artist was Leonardo da Vinci. Introduce his amazing science drawings to your students.

Plant our seeds

Get ready

Sit the children down in groups of six. They take with them all the things they need to plant their seeds: some plastic bags to cover the tables, the pot, some soil, some seeds and some water. Give them some details about how to plant the seeds, what seeds they can plant in this area according to the climate and the weather and the correct period is to plant their seeds.

Go!

First, the child puts some soil into the pot, introduces the seeds and adds some more soil on the seeds. Finally, he or she waters the plant but using a little quantity of water. The student can label the plant.

Look back!

Take the children in a big group with their pots to the school garden and advise them to water their plants three times a week depending on the weather and climate of the area. They look at the development of the plants and take care of them. Finally, all the plants are planted back on the land to create a beautiful garden in our school. They keep on looking after their school garden.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 60 min.

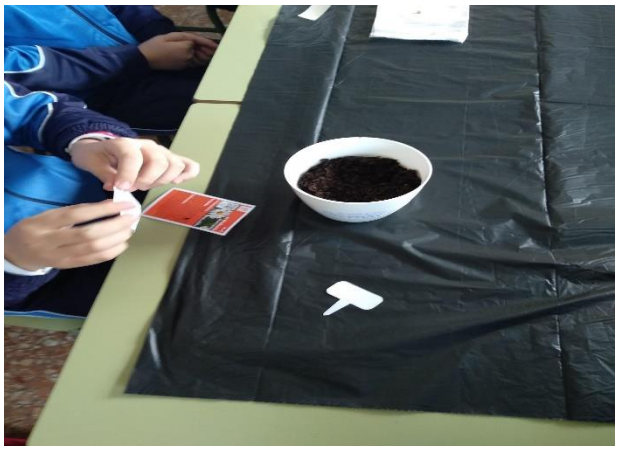
AIM:
Know the flora of our area and develop abilities to plant seeds and learn to take care of the plant.

CLASS ORGANIZATION:
Small groups and the whole class.

SUPPLIES:
Plastic bags, a pot, some soil, some seeds and some water.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:



Follow up!

- We can look up on the Internet different information about when we can sow our seeds in our area and make a calendar of planting seeds and of collecting them.

Growing a plant

Get ready!

What will be the first thing to be born from the seed?

How long does it take to grow the first leave? What about the stem?

It seems impossible that from such a small seed can be born a living thing so beautiful and so important for humans. It's time to check it!

Go!

After finishing the lesson, we will plant seeds in a glass trying to place them stuck to the glass wall.

In this way, we can clearly observe day by day how the roots begin to grow.

After one or two days it will be observed how the stem begins to grow even before coming to the surface.

When the stem begins to rise to the surface, the glass should be placed behind a window with sunlight and should not be moved.

We will observe how the plants move towards the light. After a short time the stem of the plant will be tilted towards the window.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 60 min.

AIM:
Learn about the parts and characteristics of plants; observe and identify the main parts of a plant.

CLASS ORGANIZATION:
Small groups

SUPPLIES:
Transparent glass tumblers filled with soil and seeds.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

To finish we will check the different parts of the plant that has grown from our seed and we will ask ourselves why it is leaning towards the sunlight.

Follow up!

- Here there is a time lapse example of what we want to do. Children can see it after finishing the activity.
  https://www.youtube.com/watch?v=w77zPAtVTuI

I also breathe!

Get ready

Reinforce knowledge about plants using the next guiding questions: "What is a plant? What are the needs of the plants? What are the parts of the plants and what role do they play in the life of the plant? What is the process of photosynthesis? What are the key elements of this process? What happens if one of the elements: air, water, heat, light, soil is missing or not in sufficient quantity?

Go!

Students are invited to draw the photosynthesis process. They can make an info-graphic: drawing+ short notes. Talented and inspired students can use comic techniques to represent this process.

Through stomata the plants absorb the carbon dioxide from the air and remove oxygen. The stomata are the tiny openings present on the epidermis of leaves. Stomata can be observed only under microscope. Breath in, breath out? Are the plants breathing? Let's check this out! Split in teams, students prepare the experiment following instructions:

1. Fill the bowl with room temperature water and immerse the fresh leaf in it
2. Put the bowl in a place it will have

CURRICULAR LINKS:

AGE GROUP: 10+

TIME: 2 x 60 min.

AIM:
Observe natural processes that take place in plants: photosynthesis and breathing; use scientific vocabulary; represent by drawing these processes.

CLASS ORGANIZATION:
Groups

SUPPLIES:
Different fresh leaves, transparent bowl, water, scissors, paper, pencils, worksheet

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

access to direct sunlight

3. Wait at least two hours and observe carefully the bowl.

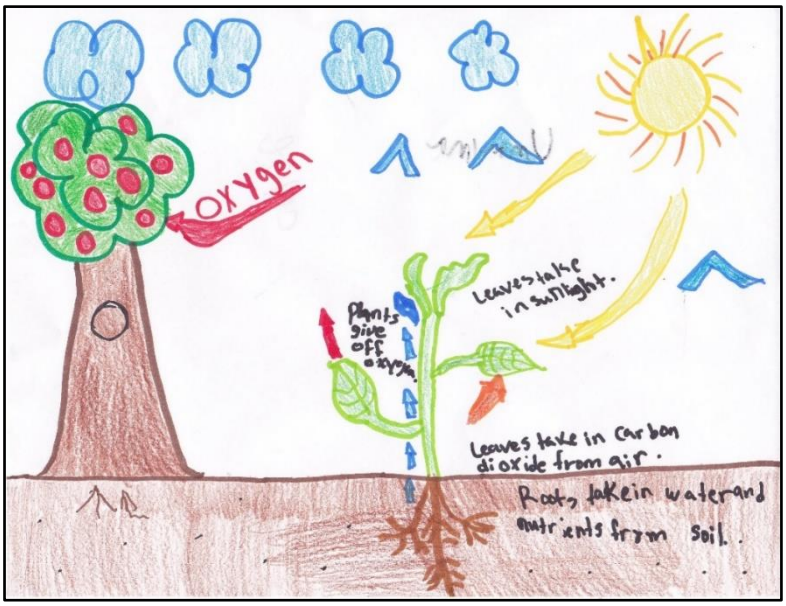
After two hours the leaf from the bowl is covered with small bubbles of gas- oxygen. Also, students can observe bubbles of oxygen on the bowl.

Students record on the worksheets their observations. As they made the experiment using different types of leaves are the results different? More or less bubbles? Bigger or smaller bubbles?

Discuss with your students about the importance of water and air quality in plant development. What are the pollution factors? What can we do to reduce water and air pollution?

Look back!

The info-graphics and the comic techniques are creative and useful methods to built knowledge.



Follow up!

- Challenge your students to design an experiment to demonstrate the harmful effect of polluted water on plant development.
- Display the best drawings of the students. Make sure that the selected drawings represent the scientific process correctly.

Coloured cabbage

Get ready!

Taking advantage of the planted cabbages in the school garden, when it comes the time to collect them, we will take some cabbage leaves for this activity and put them in glasses with water and food colouring, to check how the leaves absorb the water and therefore will change their original colour.

Go!

Talk about parts of the plant and how plants feed. Sit down with the children in groups of 4 and distribute to each group, three glasses, water, food colouring and 3 cabbage leaves. We fill the glasses with water and food colouring and put a cabbage leaf in each glass. Ask the child to predict what will happen to the cabbage leaves. We wait for a while days and check how the cabbages change colour gradually when absorbing the dye.

Look back!

Take the children in a big group with their leaves and talk about the process that has happened. Ask them if they liked it and if it

CURRICULAR LINKS:

AGE GROUP: 8+

TIME: 90 min.

AIM:
Know how water circulates from the roots to the leaves of a plant.

CLASS ORGANIZATION:
Smalls groups

SUPPLIES:
Glasses, water, food colouring and cabbage leaves.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

could be done with other vegetables. We can also explain that plants absorb water through the roots, transporting all the nutrients they need for life. Once absorbed, the plant distributes these nutrients and water through the stem to its leaves.

Follow up!

- You can also turn white flowers into wonderful colorful flowers. https://www.youtube.com/watch?v=0I7BNHLJb4Y

Leaf symphony

Get ready

Ask the students in advance to collect as many leaves as possible and encourage them to discover as much information as possible about the collected leaves.

Prepare a disc with a diameter of at least 1 m. You can make this disc from any material you have available: cork plywood, thick cardboard, wood, etc. Divide the disk into 8 equal sectors, each sector corresponding to a criterion for classifying the leaves: size, color, thickness, deciduous / coniferous, leaf shape, edible / poisonous, simple / compound.

Go!

Sit in a circle around the disc. Ask the students to place the collected leaves right next to them. Notify the students that they are going to classify the collected leaves according to the criteria mentioned above.

Announce a classification criterion. Ask the students what characteristics of the leaf they should analyse in order to fit it. For example: for the criterion of the shapes of the leaves, the students will exemplify with the help of the materials brought by these different types of leaves: oval, round, lobed, sagittate (like an

CURRICULAR LINKS:

AGE GROUP: 8+

TIME: 50 min.

AIM:
Investigating the environment using various tools and procedures.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Different types of leaves, a disc, marker, transparent glue.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

arrow), acicular (like a needle), heart-shaped etc. Do the same for each criterion. Analyse and compare, to find the leaves you will stick onto the disc, according to each criterion.

Look back!

Because students are previously involved in the preparation of this activity and share with each other the knowledge they have discovered through their own efforts, the activity becomes dynamic. The active exchange of information and the extensive debates carried out in the analysis of each criterion in part lead to a conscious observation of all the constituent elements of a leaf and their characteristics.

Finally, you can ask them if there are other things in nature that they would like to observe closely and classify according to different criteria. When they give examples (e.g. flowers) ask them what these criteria could be.

Follow up!

- The collected leaves can be used to carry out an experiment *How do leaves breathe?*
  Info: https://www.kcedventures.com/blog/how-do-leaves-breathe-a-simple-science-experiment-for-kids
- According to the color criterion, the leaves can also be used in art classes, the chromatic chapter.

Vertical garden

Get ready

We start working on the topic of plants, and to do that, there is no better way than doing our own vertical garden in the school.

This way, children will learn the parts of a plant, the names of different plants and how they grow.

First, we make a small introduction about the importance that plants have in our daily lives. We discuss about what they bring to human beings and why we should take care of them.

Go!

Before starting, each child has previously brought one plastic bottle from home. Once, each child is prepared in class with his bottle, we place them in a horizontal position and in the middle of the bottle we make a rectangle-shaped cut.

Then we make a couple of holes in both of the ends of the bottle so that a rope could pass through it.

We place all the bottles in the shape of a ladder and once placed vertically, we fill each of them with the soil that we have prepared in class. Finally, we introduce the seeds inside and with the proper care we wait for them to grow.

CURRICULAR LINKS:

AGE GROUP: 9+

TIME: 90 min.

AIM:
To know the parts of a plant, different kinds of plants and the importance of plants in our daily lives.

CLASS ORGANIZATION:
In pairs, whole class

SUPPLIES:
Bottles, soil ,seeds, rope

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

This is an interesting activity for children to know what we have to do to make a plant grow, especially experiencing it by themselves, making their own garden and checking it day after day, seeing what caring means and what the result is.

We would also know what types of seeds can be planted in each season and which not.

Follow up!

- The following link explains what kind of plants can be used for children to plant and what are their benefits: https://www.installitdirect.com/learn/kids-gardening/

Vegetables in a box

Get ready

"Where do you find vegetables? Do carrots, salad peppers, and tomatoes grow? Do they grow on the supermarket shelves? Do they come in plastic bags with price tags? Do you have a vegetable garden at your parents' or grandparents' house? What do you need to create a vegetable garden?"

You need only some potting soil, seeds and time to germinate the beauty of nature in school. This is a practical activity realised outdoor that make children appreciate vegetables.

Go!

1st step: (whole class) conversation about the vegetable garden and what we need to create one. Children have to propose useful materials and tools, most suitable places for gardening and working methods. Divide children into small groups of 3 or 4, give them boxes, potting soil, vegetables tools and seeds.

Prepare a table for monitoring the different steps: seeding, germination, growth and harvesting.

2nd step: (in groups) Put a layer of expanded clay in the boxes, spread a layer of about 10

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: a three months project (autumn and spring). 1st step: 2 hours, 2nd step: seeding 2 hours (care 3 months), 3rd step: 2 hours

AIM:
Investigate plant life cycles, gardening local vegetables; practice the habits of a healthy diet.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Potting soil, expanded clay, recycled wooden boxes, gardening tools, watering can, seeds, labels, table of the different steps.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

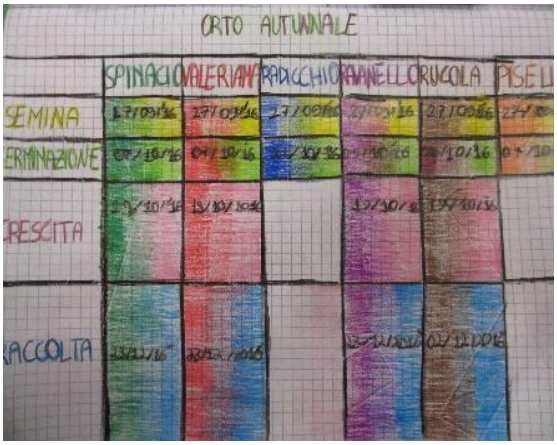
centimetres of potting soil, place the seeds on potting soil, and cover them with another layer of potting soil. Stick a label with the name of seeding vegetable on the box. Put boxes in a shady place.

Every day observe the vegetables in the box, water them, and write on the table every change.

3rd step: when the vegetables are ripe, each group collects vegetables, observes them, and presents their vegetables to other children.

Look back!

After harvesting the vegetables decide whether to distribute them to the pupils to take home, or make a big salad with all the vegetables, and invite all pupils to taste it.



Follow up!

- Read Saint Francis of Assisi "Canticle of creatures" as a praise for the nature.
- Children can write rules about respect for nature and hang it up on the classroom wall.

Growing a potato

Get ready!

How do potatoes grow? Which part of the plant is the potato that we eat? It is really the root? What about avocados? Where can they be found? Do they grow like any other plant?

Go!

Put a potato in a plastic or glass cup with water. Use toothpicks or barbecue sticks to hold it.

Change the water often. Observe how roots and stems grow from the potato.

Plant the potato in soil.

Write the changes you observe. Draw your results.

Look back!

Did your potato grow roots?

Did your potato grow stems?

Did your potato grow flowers?

Did your potato reproduce with spores?

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 60 min.

AIM:
Learn about how different plants grow.

CLASS ORGANIZATION:
Small groups.

SUPPLIES:
Glass cups, plant pots, potato, avocado and water.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Follow up!

- We can do the same with an avocado seed.
- Pupils can create a haiku poem using the word *potato* or can create sentences in order to underline the usage of potatoes and to improve vocabulary.
- Before doing the experiment, the teacher can use potatoes to do difference math operations.
- A potato can be used for creating different creative crafts.

Found a peanut

Get ready

Peanuts are in a way fascinating items, that can easily create curiosity and good humour. When it is raining and cold you can present this indoor activity to help your pupils formulate questions, which could lead to a scientific investigation, experiment or research. This will also lead your pupils to discriminate between what pertains to science and scientific research, and what belongs to other realms of knowledge and beliefs.

Some children are allergic to peanuts, so before launching this activity, make sure none of your pupils are allergic to peanuts, and if they are take precautions such as: making sure these children understand they are not expected to taste, or eat the peanuts during the activity. You might also consider replacing the peanut with another nut such as a walnut, an almond, or any other piece of fruit. In circle, invite the children to close their eyes, and imagine they are scientists who have been asked to observe and prepare a series of questions about an object that will soon be distributed to them. Once ready, the questions will be used as basis for important experiments which will definitely change human life on Earth.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 90 min.

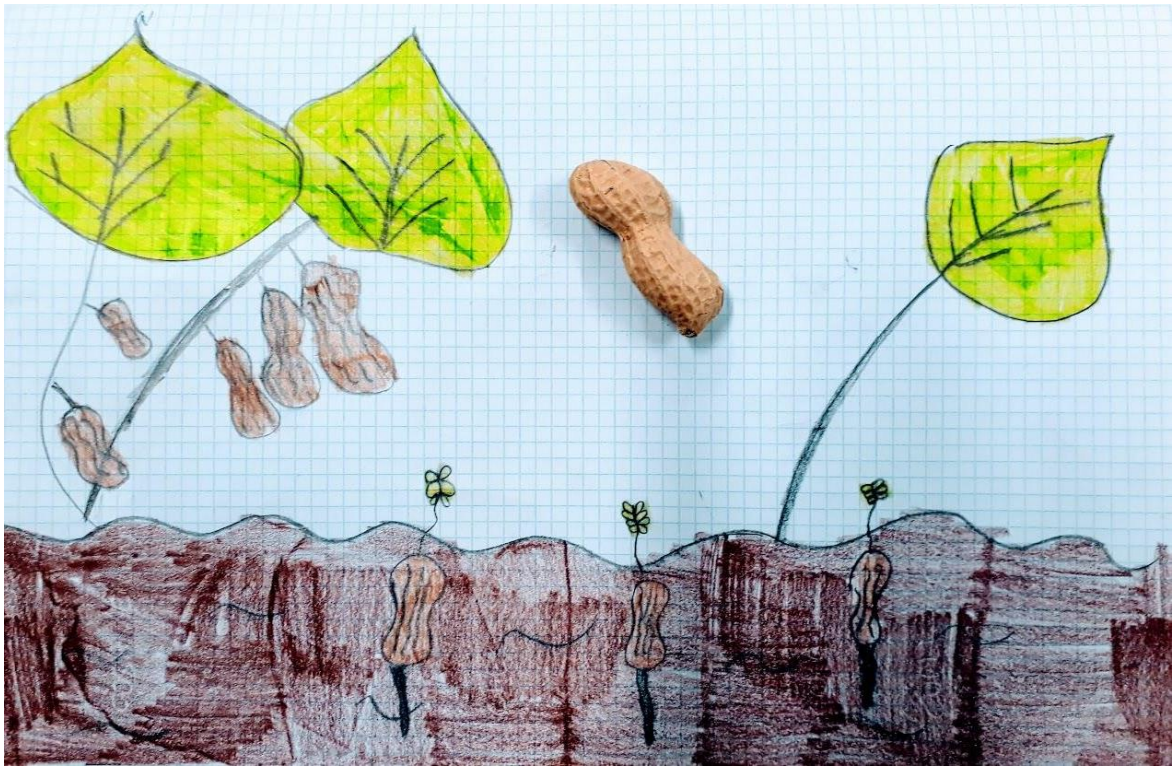
AIM:
Form scientific questions, discriminate between science and beliefs, work in pair; to observe attentively; stimulate imagination; make connections.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Peanuts, paper and pencils

OUTDOOR/INDOOR:

TEACHER/CHILD LED:



Go!

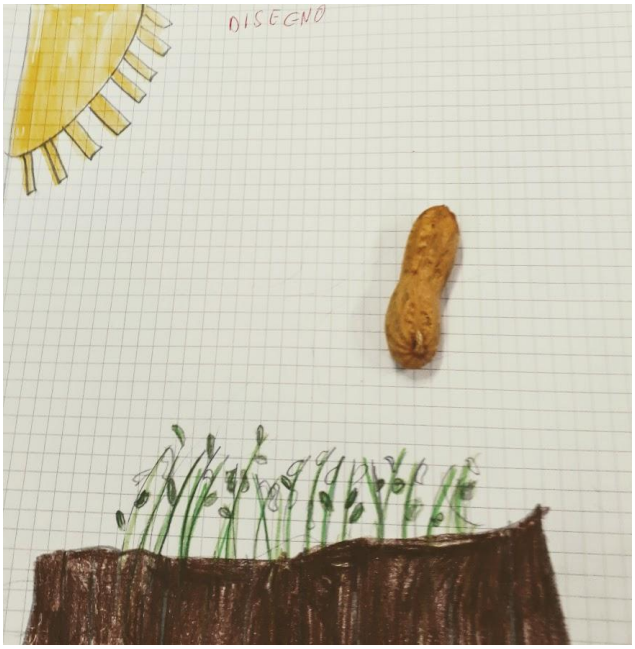
Pair up pupils and define rules with them. Revise with children what it means to observe a natural object with all our five senses (eyes-sight, ears-sound, hands and fingers-touch, nose-smell). Remind them that they will need to observe the external and internal parts of the item. Invite children to draw the peanut, and then formulate possible questions that could lead to a scientific research and eventually, to an extraordinary scientific discovery. Allow at least 20 minutes to pair work, then invite children to share the questions they have written down. Let the children evaluate what are sound scientific questions and which questions have to be discarded as irrelevant. Why are questions such as: "Is a bag of peanuts a valuable prize in school competition?" Or "Did God create peanuts?" and "Are Peanuts more expensive than bananas?" Or "Do we prefer peanuts to candies?" not to be taken into consideration? See if you can create a common list of scientific questions and then, let the pupils decide which questions they will be able to answer or do some research about. This will give them an opportunity to reflect upon the different characteristics of each question. Finally, let the children pick those questions that they believe could more easily lead to interesting discoveries, questions such as: "Could peanut oil be used to prepare an ointment that can soothe some kind of ailment?" Or "What kind of

medicines could we prepare using the extract of peanut shelves?" "Could we use the peanut shelves to create a resistant bag or material?" Etc.

Look back!

Check how and where peanuts grow. "Can you make a peanut plant grow in your garden? Are peanuts good for our health? In what kind of dishes can you add peanuts? Are peanuts sweet or salty? Have you tasted peanut butter? What is the best way to crack a peanut shelf? Can you crack a peanut shelf just in half? Why do you think peanuts have this particular shape?"

Surely, your pupils will come out with many more interesting questions about peanuts and some of the answers will be worth to explore. As a Follow up activity, it will be nice to teach them the funny song 'Found a Peanut'.



Follow up!

- https://www.gardenguides.com/uses-peanut-shells-6023398.html
- https://www.youtube.com/watch?v=dMJ2wugESQo

Learning with trees, about trees

Get ready!

There is a network in the forest! The roots of the trees communicate and collaborate with other plants and with fungi. Together they form an open and efficient network through which they support each other. In recent years the researches have highlighted both quantitatively and qualitatively these strong links. The way people intervene in nature must now be viewed from the perspective of this research. These activities are setting the first steps in this direction.

Go!

The forest provides us fresh air, food and other goods. Also, the forest is home for many living things from the little bug to the big bear. The main goal of the next activities is to observe how trees communicate with each other in a forest as they live in a perfect balance, providing protection for themselves, shelter for animals and organisms.

These activities can be run either with 4 groups of students or with the same group, one activity at a time.

Start playing "Trees can speak to each other"

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 60 min.

AIM:
Practice teamwork; make a plan, setting procedures, run an activity, follow instructions; practice the application of the scientific method in an investigation of the environment: data collection and interpretation, drawing conclusions.

CLASS ORGANIZATION:
Group up to 20 students

SUPPLIES:
Ground thermometer, measuring tape, glue, cardboard, scissors, stickers, ball of yarn, binoculars, camera, calculator

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

-game. All the students are trees of the forest. An important message must be transferred from one tree to another. Messages like: Fire!, Attention, there is a new bug in the forest! Storm is coming!

Be aware of the wild boars! Throwing the ball of twine student/tree pass the important information to the next student/tree.

After the game each team must complete a different task:

Team 1. Calculate the age of the trees in the schoolyard. Using a measuring tape students measure the perimeter of the trunk of the trees(W) in the school yard. Then, using the next formula, they calculate the radius and the age of the tree.

Age of the tree = (W/6,28) x3mm (*around 3 mm is approx. annual growth of the tree width). In a worksheet they record all the results for later analyse. Pay attention to the units of measurement used!

Team 2. Observe and count birds/animals around the trees and nearby the trees. Using binoculars students record how many animals can be located in and around the trees under observation. They spot, locate, count and describe them as well.

Team 3. Measure soil temperature at the root of the tree and at a distance of about 1.5-2 meters from the tree. Students discovered that the soil temperature under the tree was 3^0 C higher than the average temperature of the soil in that area.

Team 4. Students collect materials found nearby the trees (sticks, leaves, acorns, cones, lichens, hazelnuts etc.) and make a tree collage.

Look back!

All teams present their work and share how and what they have learned. They discuss how to present their activities to the whole school by presentations, dairies, photo story.

Follow up!

- Calculating the age of oaks: https://bg.hydroponicsbc.com/8364-how-to-determine-the-age-of-the-tree.html
- Simulation Game "Get to know you" as a version of how trees communicate to each other: http://www.gettoknowu.com/Questions_Games/Interwoven_Icebreaker_Game.php
- Pictures: https://blog.lawneq.com/what-is-and-how-to-use-a-soil-temperature-thermometer/
- https://wtax.com/news/101101-soil-temperatures-higher-than-average-across-illinois/
- https://gearjunkie.com/best-binoculars
- https://imgflip.com/memetemplate/182567684/Birds-Flying-From-Trees

Guess the herbs

Get ready!

Students have previous knowledge about some local medicinal herbs like: chamomile, mint or St. John's wort. Also, they are familiar with the use of some plants as spices for food: parsley, thyme, celery, laurel. In this activity students explore these special plants, learn to identify them using their senses: sight, smell, taste and touch.

Go!

Working in teams, the students make a short material about a local medicinal plant. Each team presents this material to the other teams. They share information about herbs. Make sure each team has enough time for exploration. They analyse, test, compare, describe all the herbs. The characteristics enabling the plant to be identified will be highlighted. Also, the healing properties. Some other important facts can be taken into account such as the periods of the year suitable for harvesting as well as what parts of the plant are recommended. The teacher introduces new information all along the activity and invites students to watch a video file about traditional medicinal herbs. A herbarium can also be useful.

CURRICULAR LINKS:

AGE GROUP: 9+

TIME: 40 min.

AIM:
Learn about medicinal herbs from the local area; learn to identify medicinal herbs using senses; make a collection of samples of local medicinal herbs

CLASS ORGANIZATION:
Whole class

SUPPLIES:
Fruit, herbs, small plastic bags, paper, labels, markers, cardboard, sticky tape, scissors. Optional: a herbarium or a Medicinal Plants Album .

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

To sparkle the activity, play a game: *What herb is it?* Using only the sense of smell, can they identify correctly the herbs/plants?

In the last part of the activity invite students to put herbs in small bags and to organize them on a board. Under each bag they paste a label with the name of the plant. Scientific name or popular names can be added, too, on the labels. Students can attach to samples of medicinal plants instructions for use.

Look back!

In Bulgaria, many plants are traditionally used as an adjuvant in the treatment of some diseases. The nature is powerful and helpful but we must be aware that medicinal plants can't replace the doctor and the medical treatment.

Follow up!

- During Art and IT classes students can draw herbs or/and create an digital book.
- They can create a QR code of the herb using the app: https://www.qr-code-generator.com/
- Video about medicinal plants in Bulgaria: https://youtu.be/qbFIP9MRHZ4 .

Kitchen herbs and spices

Get ready

We can explore nature in our own kitchen. Children are often not aware that there is a strong connection between aromatic herbs we can see in a garden and those beautiful jars in the kitchen cupboard.

In this activity pupils will learn about the myth of Daphne and Apollo, then they will share what they know about herbs, learn how to identify the most common ones, create a new story/myth starting from an aromatic herb. Finally, they will create an Herbarium booklet.

Go!

Invite pupils to sit in a circle and read them the story of Daphne and Apollo. Show illustrations about the myth. Ask if they can connect the Lauren leaves to any other images or situations in which these leaves are used (i.e. in Italy people who graduate wear a laurel crowns, laurel crowns can be seen on the head of famous Emperors and poets...etc).

Activity number one: Divide class in groups of four or five children, and distribute different herbs, and spices to each group. Invite them to analyse the herbs with all their senses. Pupils need to observe, touch, smell and even

CURRICULAR LINKS:

AGE GROUP: 8+

TIME: 3 x 90 min.

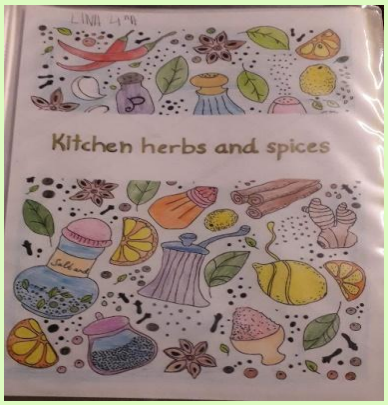
AIM:
Collect and handle information to create a story, observe, examine, explore, draw connections, work in group, organize material for a booklet.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Plenty of dry and fresh aromatic verbs, paper booklet and plastic file folders.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:



taste herbs. Each student will draw herbs, write down: their names if they have recognized them, if the herbs are present in their home kitchen, and what kind of food can be flavoured with these herbs. In turn, each group will present their work to the colleagues.

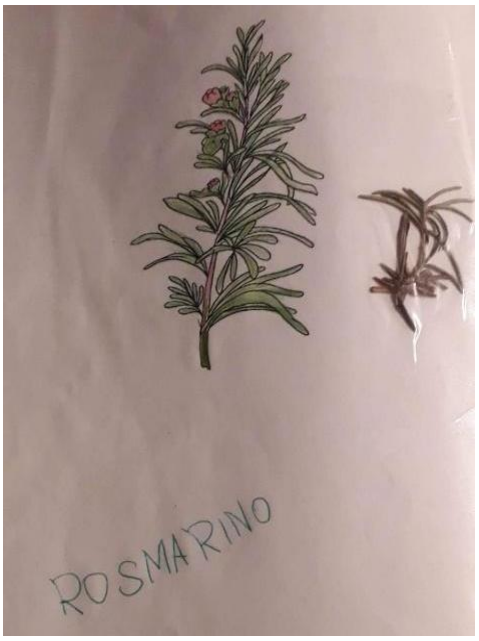
Activity number two: invite children to make a circle, review all the information about the herbs and Daphne's myth. Divide class in groups, children will be invited to choose an aromatic herb, and think about an interesting story which can be related to its form, flavour, or its name. Each group will write down their own story. If they wish, children are free to present their story as comic strips too. Each group will share the stories with their classmates.

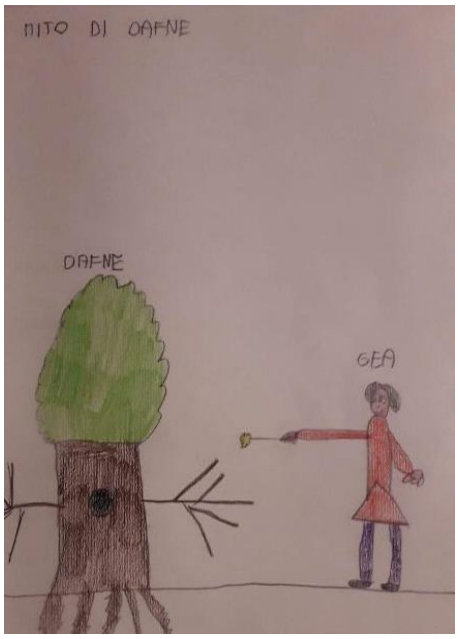
Activity number three: collect plenty of fresh common aromatic herbs (such as: rosemary, sage, peppermint, parsley, dill, lavender, laurel, oregano, thyme, camomile, mauve etc.), show children how to dry them up inserting each leaf between two sheets of paper, and pressing them. When the leaves are dry, give out handouts with pictures of the herbs. Children will colour the picture of the herbs and glue each herb next to its picture. Each pupil will create its own aromatic herbarium booklet.

Look back!

These activities will help children discover the great varieties and richness of aromatic herbs realm. While completing these activities, they will hopefully be able to recognize the most common aromatic herbs. Herbarium are often present in public gardens which can be easily visited. Children can be involved in creating a little herbarium in the school garden.

Using students' stories and illustrations create a digital book using applications like bookcreator or storyjumper.





Follow up!

- Prepare a simple dish in which you use aromatic herbs: a tomato salad with basil leaves, lemonade with mint leaves, mint tea or chamomile tea, baked apple with cinnamon and vanilla;
- Besides aromatic plants there are other spices that come from seeds (coriander, oregano, cumin, pepper). Continue exploring the flavors of the kitchen with investigations on these spices.
- Make a table and record the preferences of the students. What are their favorite flavors/ aromatic herbs/spices? You can also make a graphic representation of the data obtained.

Mapping plants

Get ready

The goal of this lesson is to help students carefully observe the nearby plants. When children know and interact with the natural environment, they come to love that place. Over the years, these memories and feelings of attachment turn into care for local plants and animals.

Before the lesson actually begins, ask each child in the group of 5 to find a straight stick about as long as his/her arm and one as long as the hand. You should think well where the map is going to be formed. Imagine a circle with a center; for maxim effect, you should choose a place which allows taking 30 steps in every direction. If the central point allows access to different types of environment (orchard, forest, wetland, meadow) the biodiversity will be rich and the lesson will be more interesting.

Go!

Make a circle and set the following rules for this lesson: 1. When someone speaks, I listen. 2. Never pick more than one plant. Note that if there are harmful plants, the students should be aware of them and not pick them.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 45 min.

AIM:
To identify and know local plants, making comparisons and connections with earlier experiences.

CLASS ORGANIZATION:
Groups of 5 learners

SUPPLIES:
Sticks

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Ask the children to quietly join you till you reach the central point (where the map will start). From the central point start making a hexagon with the sticks. The longer sticks become the radii while the short sticks become the sides. The teacher should play along, so that each child and the teacher has a *slice* of the hexagon. Please mind that the place where you form the hexagon should be cleaned of fallen leaves and sticks beforehand.

Each participant from the group (including you) will start from a side. Each should make 10 steps away from the hexagon, and pick a plant that is most common in that particular place. Then make another 10 steps and then another 10, each time picking a plant / seed / twig etc. most common in that area. Back to the hexagon, each participant will position the 3 elements in his/ her own slice of the hexagon. The plant that they found first should be the closest to the center, the one picked after 20 steps should be placed in the middle, and the one picked after 30 steps, next to the side of the geometrical shape.

The teacher will begin the discussion. He /she will present the direction and the elements picked, giving each time a reason for finding that element in that particular area (e.g. "After 10 steps, I found tall grass because I was in the meadow. 10 steps further, I found mint because this grows in sunny places like this meadow. After 30 steps I found a pod with some seeds in it. I looked around and I realized it was an acacia pod because there is a small acacia forest around there. In the pod I found only two seeds, the other two either had fallen or had been taken by the wind.") Each child will take turns to present the found elements, will try to identify them and give a reason why this plant grows in that particular area (e.g. ferns love shadowy places, and I found fern next to the forest).

Make comparisons between the different elements and talk about how you can use the plants to keep healthy and strong. For instance, for the section in the picture, the

child correctly identified the oak leaf and he compared it with the nearby hornbeam leaves. He also talked how we can use each part of the chicory plant. The mushroom, found in a sunny, grassy place generated new questions about the places mushrooms grow (students were convinced, that mushrooms live only in wet, shadowy places). "What do you think we made inside this hexagon? An unusual map of the plants you can see around!"

Look back!

In the end reflect on questions like: "Why is mapping local plants worth doing? Why should we know local plants, anyway? What useful things have you learnt today? How did you feel?" Appreciate their participation and involvement.

Follow up!

- Different environments create different maps, which can be later compared.
- This lesson was inspired by the book *Play the Forest School Way, Woodland Games, Crafts and Skills for Adventurous Kids* by Jane Worrol and Peter Houghton.

Living things

Get ready

Students are working in teams. Each team receives a worksheet with a crossword game and a set of cards with local plants and animals.

Go!

Their task is to identify the plants and animals from the photos and, following the directions, fill in the crossword. If they have identified correctly, on vertical they will get the name of a plant or animal representative of the local area. Students are also challenged to group plants and animals into categories according to certain criteria: perennials/ annual plants, herbaceous plants/ trees, mammals/ birds/ insects etc.

Each team makes a card with a plant on the local area. Examples: beech tree, lime tree, oak tree, apple tree, fir tree, willow tree, blackberry, hawthorn, hazelnut, rosehip. The card contains the name of the plant and a few information about it. The teams exchange the cards. Students read and discuss the information on the cards. "Did they know the plant? The information on the card is accurate? Do they know more about this plant?" Any other new data is welcome.

CURRICULAR LINKS:

AGE GROUP: 8+

TIME: 90 min.

AIM:
Identify plants and animals in the local area; name some characteristics of these plants and animals; groups plants and animals according to certain criteria; develop practical skills through the creative use of small materials from nature.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Cards with pictures of local plants and animals, worksheets, pencils, white cardboard sheets, small natural items: leaves, sticks, stones, acorns, nuts, forest fruit, pieces of bark tree

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Record these data on the worksheet. Then, students are invited to explore the area, identify the plant on the card and collect elements (dried leaves, fruits, small sticks) from the plant.

They are challenged to use these natural items (plus stones, bark, hemp, twine etc.) in a creative way making a nice decorative arrangement.

In the last part of the activity each team presents the information on the card, the new information added on the worksheet and the decorative arrangement made with natural items. The teacher will ensure that all students have the opportunity to get involved in the presentation and/or to participate in the discussion.

Look back!

The teams can exchange the cards so all the teams have the opportunity to investigate more different plants. Also, each team can make more than one card, depending of the time given to the activity and the season.

The students will be encouraged to carefully collect materials from nature, in reasonable quantities. After the presentation of the decorative arrangements the natural elements used will remain in nature (except for edible ones).

Follow up!

- A nice cup of tea made by students using forest fruits or local herbs is always a delight. Add a drop of honey!
- Also, a snack with fresh forest fruits and nuts. Be aware of the bear!

The magic box

Get ready

The students have knowledge of different ecosystems acquired in previous activities. They investigated aquatic/wet and terrestrial ecosystems by observing specific life forms and discovering the relationships between these life forms. A special attention was given to the effects of human activity on ecosystems and to the protected or endangered species of plants and animals.

Go!

The teacher introduces to her/his students the magic box. In the box, there are a few natural objects linked as closed as possible to a specific environment aquatic/wet or terrestrial. Include protected/endangered species of plants and animals from that environment.

A student extracts an object from the box. He identifies the object and links the object to an ecosystem, a plant or an animal from that ecosystem. He is invited to present appropriate information about that plant or animal: description, nutrition, life cycle, adaptation to the environment, status, without specifying the name of the plant or animal. The other students are challenged to

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 90 min.

AIM:
Development of knowledge about ecosystems, the adaptation of life forms to the environment, about endangered and protected species of plants and animals

CLASS ORGANIZATION:
Whole class

SUPPLIES:
Sand, clams, cones, acorns, chestnuts, river stones, small rocks, bark of trees, pine twigs, river shells, sea/river shells, snails

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

recognize the life form from the information provided by the student. If the task is too difficult, the first student can give more clues like the first letter of the name of the plant/animal, number of syllables of the name, the last letter of the name or any other essential piece of information. A funny method could be the pantomime or a link to a story character.

Here are some examples:

1. The student extracts sand. Protected plant - sand lily, protected animal - sandy rain whistle, turtle.
2. The student extracts a rock/stone. He/ She can describe any protected plant or animal that lives high up in the mountains. Protected plant: edelweiss, mountain carnation; protected animal: eagle, vulture, black goat, marmot, etc.
3. The student extracts a cone. He/ She describes a protected plant or animal from the coniferous forests.
4. The student extracts an acorn. He describes a protected animal or plant from the deciduous forests.
5. The student extracts a shell. Describe a plant or an animal from a wet ecosystem: sea, lake, river, swamp, delta, thermal water area.

In the last part of the activity invite your students to create, working in groups, a word game (crossword, wordsearch, quiz, match up). The game can be also created using an app like Wordwall (https://wordwall.net/).

Look back!

Students share information about endangered plants and animals from local area, plan activities in order to support the sustainability of the environment, talk about their favorite plants and animals bringing arguments and highlighting the place of each life form in the great circle of life.

Follow up!

- Working in small groups, students can make projects dedicated to plants and animals from the local area. Widely spread, endangered, protected or not, each one of them is important.
- Plan and conduct free explorations of local areas in which to discover together the life forms adapted to the respective environments. Turn these activities into a celebration of nature's power. Use nature as a teacher who not only enriches our knowledge but also builds strong characters.

Acorn doll

Get ready!

In the afternoon, when the child goes to play in the park, he will pick three acorns and bring five sticks home.

Go!

We separate the acorns into two parts. An acorn will be the head and the other one the body.

We will stick five toothpicks to make the arms, one to make the neck and two others to make the legs.

The part that we separated previously from the acorn will be the feet and a hat that will be glued with play dough. Finally, we will draw using a marker the face and some buttons on the body.

Look back!

This activity allows the children to work with natural elements and strengthen the vocabulary on "Parts of the body" in natural science. Once finished we will place them on the shelf and comment if we have had any difficulty finding the acorns or making the doll.

Follow up!

Use this video to remember the parts of the body:
https://www.youtube.com/watch?v=AsM1cgsip-o

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 90 min.

AIM:
Students must identify and express orally the parts of the body.

CLASS ORGANIZATION:
Small groups.

SUPPLIES:
Acorns, toothpick, play dough and permanent marker.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Sweet, garden conversations

Get ready

The students are working in three teams. The first task of each team is to solve a crossword game. The topic of the game is *Plants from our garden.* The students investigated these plants during previous activities. The selected plants were: linden, geranium and rose (in Bulgarian).

Go!

Students solve the crosswords and discover the key words. Then students should find in the garden the plants whose name they got solving the game. They are invited to observe the plant, gathering as much information as possible about it.

For the second part of the activity each team receives a Fact file about the plant. The text is scientific but the vocabulary is adapted to the level of the students.

The tasks are different:

- 1st team. Read the text about *Linden* and using the key words from the text create a riddle. The other two teams must guess the answer to the riddle.
- 2nd team. Read the text about *Rose*. They transcribe the text eliminating the key word *Rose*, whenever it appears in

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 60 min.

AIM:
Enrich knowledge about plants; develop creativity through the use of keywords in various games; identify the benefits of using plants in everyday life.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Worksheets with 3 crosswords, pencils, envelopes with scientific texts about 3 plants, worksheets for activity.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

the text. The other two teams must identify the plant based on the text and fill in the empty spaces with the word *Rose.* Older students can create their own text using information from the fact file.

- 3rd team. Read the text *Geranium* and write as many words as possible starting from this word (family words). In Bulgarian, *Geranium* is *Zdravets* and means *Health.* The words can be nouns, verbs or adjectives. The other two teams must recognize the plant based on the family of words suggested by the game.

By turn, each team will play the other two games. They will have the opportunity to discuss about the games.

In the last part of the activity students share interesting facts related to these plants. A cup of rose or linden tree with a drop of honey is a special treat in the end. Also, flowers of these three plant species have a special, characteristic fragrance. Invite students to recognize the plant by smell. Only flowers have a specific smell? Which one is their favorite plant? Why? Encourage all the students to share their thoughts.

Look back!

The students claimed that first they found it difficult to create the games. Once the task was accomplished, the interest in this kind of activities increased. They decided to create other games using digital applications.

Follow up!

- The students can create new games either dedicated to the three plants or by choosing other interesting plants from the school garden.
- Challenge students to discover uses of these plants in everyday life. What other plants known to them have similar uses?

Natural soap

Get ready

In this activity we will make natural soap, we can use it to wash our hands, to decorate the bathroom or to aromatize our clothes when we travel. It is an easy activity that we must follow step by step and do it all together to make it great.

Go!

The materials we are going to need:

- Cornflour.
- Bath gel.
- Food colouring.
- Metallic Paint or glitter.
- Moulds.

Instructions:

1. First we put two tablespoons of cornflour on the table.
2. Then we add a few drops of gel, food colouring and glitter.
3. We begin to knead.
4. Once the dough is homogeneous, we shape it with our hands or put it in the mould.
5. Let it dry for a couple of hours.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 90 min.

AIM:
To develop organization skills, attention and comprehensive reading.

CLASS ORGANIZATION:
Small groups.

SUPPLIES:
Acorns, toothpick, plasticine and permanent marker.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

Once the soaps are dry, we will take them out of the mold and each student will show theirs to the rest of the students. We will tell if we have encountered difficulties, how we could improve them and what we liked the most.

Follow up!

- We can research information about natural soap here: https://www.hacerjabones.es/jabones-naturales/
- The soap can be a nice gift for Mother's Day.

Making flower pictures

Get ready!

After studying the characteristics of the plants, their leaves and their flowers, we will use these elements to create beautiful pictures with them. We will need a drying press that we can manufacture ourselves using wood or purchase it to work in class.

If you do not have a drying press you can use your… microwave. Cut the flowers and leaves and, if their appearance is a bit bulky, open and press them a little in the middle. In order to make flowers and leaves that looked pressed you will need two tiles and 2 tissues. Put one tile, one tissue and then place the flowers and leaves gently on the first tissue. Cover them with the second tissue than with the second tile. Turn on the microwave for about 40 seconds to 1 minute and check for readiness. If it is flat and feels dry to the touch they are ready. You can do this in class if you take extra measures like cooking gloves and working with small groups.

Now back to the drying press!

Go!

Each group will choose the elements they want to use to make the compositions,

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 90 min.

AIM:
Learn about the leaves of different plants and make a beautiful picture with them.

CLASS ORGANIZATION:
Small groups.

SUPPLIES:
Leaf press dryer, flowers and leaves.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

imitating the original plants, the landscapes near the school or the place where they live.

In each layer of the drying press we will introduce the leaves and flowers that must be 10 days under pressure in order to keep a natural appearance that will remain for years.

When the time has passed, we will put the composition into a frame that we can decorate with our class or parents. You can even glue the flowers on a piece of see through plastic, glass or floating frame and place them in the window!

Look back!

This seems a good opportunity to make a beautiful exhibition at school. What do you think?

Follow up!

- You can also make a beautiful album or a gift card for Mother's Day.

Botanical book

Get ready!

During the unit, children are going to study the plants, their parts and classification. We have a couple of minutes to think about the way in which plants breathe, why they are green, how they obtain their food.

In order to answer this question, we can go to the computer room or work in the class on the "iPad". Once they have had enough time to find information about the question we sit down in a circle to compare answers amongst pupils.

Afterwards, the teacher talks about the plants and explains their characteristics, parts, classification. At the end of the class, the children are asked to bring a leaf, flower, plant, etc. from their environment for the next day, and then write the popular name, the scientific name and where they found it.

Go!

Once they bring what the teacher asked, they will be divided into different groups depending on what they brought (bush, grass, tree or flower). The groups will be divided by colours and each member of the group will have a paper of that colour.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 90 min.

AIM:
Develop listening and speaking skills, empathy and expand vocabulary.

CLASS ORGANIZATION:
Individual/ small groups.

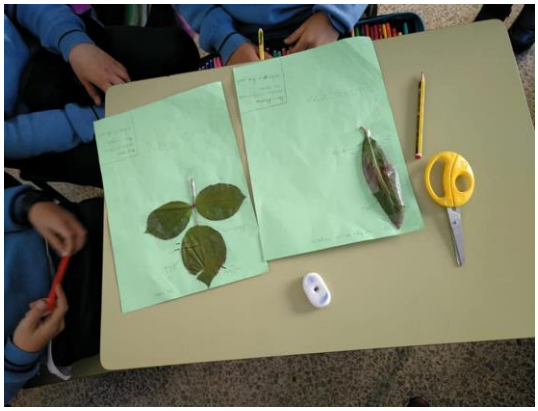
SUPPLIES:
Different flowers, leaves, plants.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

They will glue their plant on the paper and they have to name the parts of their plant (stamen, petal, sepal, stem, etc.). In the corner of the paper they will write the information that they brought about their plant.

Once they finish, they will place the paper between the pages of a heavy book and leave it for about two weeks. When the plant is dry enough, the paper will be introduced in a plastic sheet to protect it. All the files together will be kept into a folder in order to create our organic book.



Look back!

To finish the activity, they will look through the botanical book and think about one curious question, if they have any. The class sits down in a circle and discuss those questions with the others to make sure that all the information about plants is completed.

Follow up!

- Flower ice cubes: with the flowers brought by the students, we are going to make ice cubes. To do that, we are going to introduce the flower into a recipient and add water. After that, we put these recipients into the freezer and after a few hours we will have our decoration.
- Flowers that change their color: we ask the student to bring some white flowers and colour ink. In the class, we get a few glasses and add water and few drops of ink. Each glass will have a different colour. Then we introduce the flower into the water and wait for few hours to see how the flower change its colour. (Related to the activity: *Colored cabbage*).

Incredible animals

Get ready!

With this activity we want to motivate students when studying the different types of animals, the ecosystems in which they live, the features of each one, their feeding and classification according to all those factors.

Go!

In nature outings you should collect natural elements such as sticks, small stones, fruits and leaves. Any element that we find will be useful to carry out the activity. It is important that the materials are varied both in shape and colour and if possible with a proportional size. With these materials we will create different animals using our imagination and trying not to repeat them.

We will create a fairly large collection of animals that will help us study them, observe their features and classify them.

Look back!

In different corners of the class, labels will be placed in order to place the animals under them according to their features.

In this way, the students can group them in:

- vertebrates and invertebrates
- Mammals, birds, reptiles etc.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 120 min.

AIM:
Learn about features and different classifications of animals in animal kingdom; develop manual skills using natural materials.

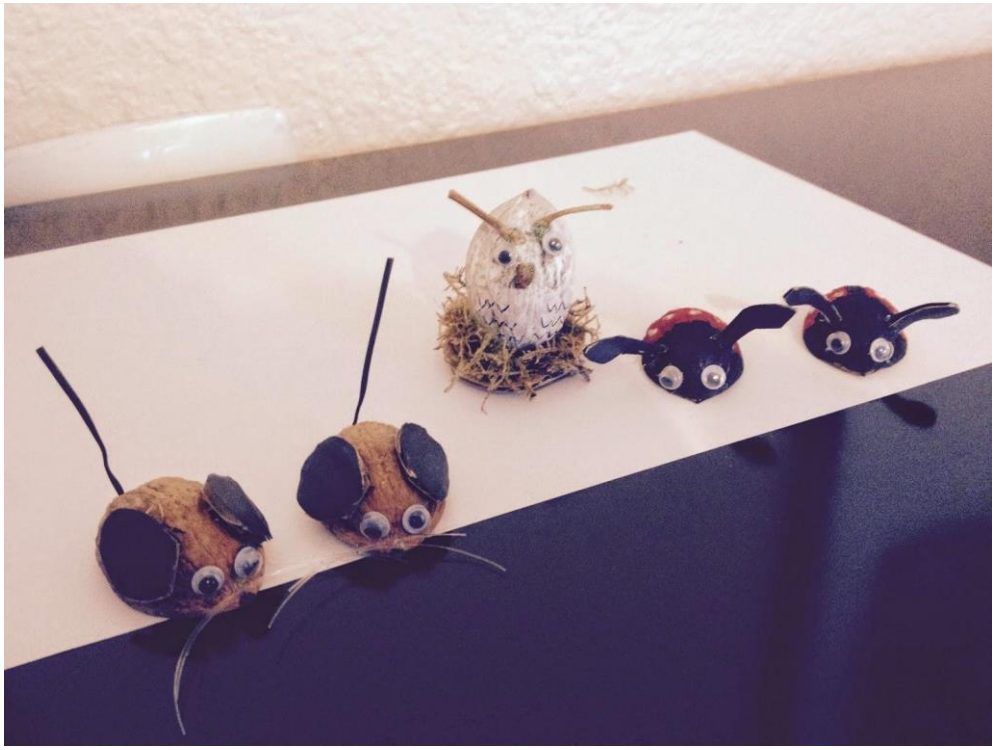
CLASS ORGANIZATION:
Groups, individual and the whole class

SUPPLIES:
Natural materials and glue.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

- Carnivores, herbivores and omnivores.
- If they belong to one ecosystem or another.
- Oviparous / viviparous.



Follow up!

- An exhibition can be created to share it with all the students of the school.

Bug hotel

Get ready

Take the class in the school garden and sit down next to one of the biggest trees. Explain the students the diversity of living things there can be around us, where they live - the different ecosystems there are on earth. Ask the children to identify and look for those living creatures that live in our little school yard ecosystem. Most of the creatures identified will be insects, arachnids, myriapods, mollusks (like the snail), different types of worms and birds. Let's try to attract the small animals to a special area in our garden, called the bug hotel.

Go!

To attract these small animals, children should fill the bug hotel in with different natural elements from the woods they collected before in one of our school nature trips (pine cones, leaves, sticks, stones). Then, let's ask them some questions like these ones: "What kinds of animals do you think are going to come to the bug hotel? When are they going to start living here?" Next, students will visit their bug hotel every day during the break to observe if there are some animals living there. Finally, when the hotel has its inhabitants, we are ready for sitting down next to this area and talk about it.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 2x45 min.

AIM:
Animal observation, classification of living things, their life processes and their ecosystems.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
The wooden bug hotel, pine cones, sticks, stones, leaves.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

Students can discuss what they have seen and felt. Encourage them to analyse the types of animals (insects, reptiles, birds, mammals etc.) that live in our bug hotel, how they breathe, eat or reproduce, that is, the three vital processes they have.

Encourage students to ask their partners/classmates questions about these animals, and partners/classmates who know the answer try to answer. (Ex: "How long does it live?, Is it oviparous or viviparous?, Can it swim?" Etc.)

Make children become aware of the importance of letting creatures live freely and undisturbed in their habitats.

Follow up!

- We can see a video about how to make a bugs´ hotel: https://www.youtube.com/watch?v=zaAIrXnjii0
- Another video shows the beneficial insects you want in the garden: https://www.youtube.com/watch?v=ai8XRf_wYjA

Garden bug hunt

Get ready

Bugs are everywhere. Different sizes, shapes and colours. There are many species of bugs and their number exceeds that of the people on earth. Often bugs are perceived as ugly and harmful. On the contrary bugs are extremely important for our ecological system and if we had a minimum knowledge of their great contribution to nature, we would probably be more respectful of them. Children can easily get hooked on bugs and although some might show some initial resistance, curiosity will soon capture even the more sceptic ones.

Go!

In the school garden, park or forest before you let the children free to explore, and hunt for bugs, form a circle, agree upon and refresh the basic rules of a natural exploration.

Adopt as first rule: respect life and avoid hurting in any ways the little creatures!

Divide the students into pairs. Each pair will receive a cardboard box and 2 magnifying glasses. Offer some housekeeping gloves to those who are more resistant and fear touching the bugs with their bare hands.

Children will find ways to pick the little invertebrates up; some will use their fingers,

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 90 min.

AIM:
Develop inquiry-based learning skills: observation, analysis, data collection and interpretation collaboration and communication.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Magnifying glass, copy of bugs' chart, small cardboard boxes.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

others will use a stick, a leaf, or a piece of cardboard.

Allow at least 30 minutes time to a free exploration of all the bugs they can find in the garden, or forest area; pupils need time to explore and discover.

Pupils will be eager to come over to the teacher to show what they have found, you might consider inviting them to participate in a small competition to see how far each child can carry a bug on a stick following a set itinerary.

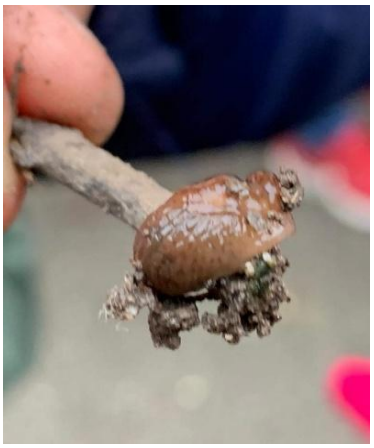
Children will greatly enjoy this activity, you can also suggest them to put bugs in little cardboard boxes that you prepared, so that you can carry out a more attentive observation later in class. Remember to set bugs free before the school day is over!

As a follow up activity in class distribute bugs template which you can find in this internet site http://www.bnhs.co.uk/youngnats/to-do/garden-bug-hunt/ and ask your students to check which bugs they have found during the bug hunt. This will be an excellent opportunity to learn the names of bugs in English, Latin and in mother tongue. Pupils will compare and study each bugs parts and characteristics. Invite pupils to pick a couple of bugs they particularly like, draw them, and describe them. Ask pupils what the role of bugs in nature is. "Are bugs here just to bug us, or are they contributing to the good health of our garden? When did bugs appear on Earth?"

If your pupils are interested in representing by drawing bugs introduce notions of scientific drawing, emphasizing its importance in popularizing the sciences and the contributions made to this field by some researchers and explorers. One hundred and fifty years ago there were no cameras. All scientific information was represented by drawing.

Look back!

Do not forget to ask your pupils whether they enjoyed the Bug hunt and what they learned through this activity. Make sure to organize a wide selection of Bug books and stories that your pupils will be able to consult and read. Check Eric Carle's books: *The Very Hungry Caterpillar, The Very Quiet Cricket, The Grouchy Ladybug, The Very Lonely Firefly, The Very Clumsy Click Beetle*, which are all also available on YouTube. The students were very interested in how the author managed to present through literature characteristic features of certain insects. The beautiful illustrations of these books also facilitated the formation of a bond between pupils and insects. It brings a fresh perspective.



Follow up!

- Check these sites:
  - http://www.bnhs.co.uk/youngnats/to-do/garden-bug-hunt/
  - http://northwoodsguides.com/Quiz/Quiz.php?QuizID=1
- Investigate life cycles of some of the bugs. All bugs go through a four-stage life cycle?
- Organize and consolidate information about bugs. What are the similarities and differences between insects, spiders and centipedes? How about snails and slugs?
- Using a digital microscope take photos of insects/bugs and parts of the body of insects/bugs.
- Invited to your class a gardener to talk to pupils about harmful insects but also about those considered "friends of gardeners". Another topic of interest would be the ecological methods of pest control.

A surprise guest

Get ready

Are you ready to capture what nature offers to you outside your classroom? Are you ready to interrupt the lesson you prepared to watch what is happening outside your windows? If you are ready to do this, then you can move on with this activity!

Let your students decide which would be the ideal classroom window to carry out the observation. Then, agree with your pupils on a set of rules the class needs to respect to carry out the observation. To start we suggest these rules:

- agree on a simple gesture (raising a hand) to signal that you need to stand up;
- keep absolutely quiet during the observation.

The teacher will prepare a series of binoculars and a camera that pupils will easily have access to, if needed.

Go!

Step 1: Children take turn to observe with binoculars the tree branches outside the classroom window. They try to spot birds, and when they see them, they observe their

CURRICULAR LINKS:

AGE GROUP: 8+

TIME:
14 h (Step 1: 2 hours; Step 2: 2 hours; Step 3: 2 hours; Step 4: 2 hours; Authentic task: 6 hours)

AIM:
Observation skills, curiosity about nature, wonder for creation, social competences, learning to learn abilities.

CLASS ORGANIZATION:
Groups and pair work

SUPPLIES:
Binoculars, camera, template sheet, ruler, weighing scale.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

behaviour. Allow enough time to each child to carry out his/her observation. In the meantime, the teacher encourages children to take pictures of the birds they managed to sight. If no classroom windows are facing trees, you can carry out the observation outside in the school garden or in a park during an outing.

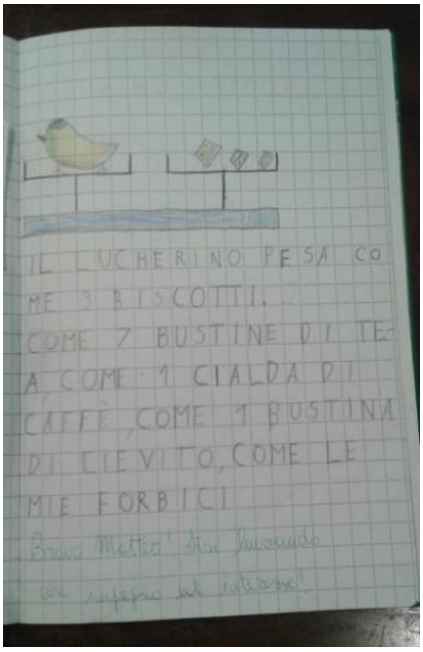
Finally, back in class using a smart board project the pictures that were taken and do an internet search about the birds that have been spotted more easily.

Step 2: After having found the name of the new bird friend, children look for the main information about the bird searching in Birds' Encyclopaedia, and specific magazines and internet sites. Children should look for answers to questions such as: "What does this bird feed on? How many eggs does it lay? Which physical characteristics help us discriminating between male and female specimen?"

Step 3: Children fill out the observation grid prepared by the teacher and draw the observed bird. (See Attachment 1)

Step 4: The teacher presents a measuring activity to the class:

- Length: using the ruler, children check how long exactly is the body of the bird, and then, they compare that measure to the one of other objects they have available on their desk, such as: a rubber, a magic marker, a pencil, a pen, a pencil case, etc.
- Weight: using a balancing scale, children should figure out how much the bird weighs, comparing the bird weight with the weight of common objects such as biscuits, pasta pieces, tea bags or candies.



Look back!

Authentic task:

1. In Pairs: children study the information of the template grid (make sure you pair up the children in a homogeneous way).
2. Open classes: in pairs, children go around other school classes and share all what they learned during this bird observing activity.
3. In class: during circle time, all children share information, feelings and curiosities about what they learned. Children might launch a research activity on another bird that has been sighted.
4. Individual evaluation.

Follow up!

- Children may decide to expand this research activity to cover different seasons. The teacher might distribute pictures of the birds which have been observed and ask the children to write next to it the correct name of the bird.

What makes a bird, a bird?

Get ready

You can find birds in the town and countryside, in forests, fields, or in your school backyard. Birds are seen at zoos, museums, city parks, and even in our homes as pets. Birds appear in movies like *Happy Feet, Madagascar* or *Rio*. They fascinate us with their variety of colours, patterns and songs, and they astonish us with their flight capacities or building techniques. Images and emblems of birds are historically important as icons of strength, resilience and freedom.

Watching and listening to birds can provide feelings of personal discovery and accomplishment, and a rewarding outdoor experience. Pupils observe local birds during previous activities: sparrows, crows, seagulls, common pigeons. They start this activity watching and feeding sparrows and pigeons in the city park. So, here are the lines for our guided observation.

Go!

"What are these? What kind of animals are these?" These are birds/pigeons.

"What makes a bird a bird? How can you recognize a bird? What makes birds special?

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 50 min.

AIM:
Practice and develop observation skills, develop vocabulary, develop critical thinking, gain knowledge related to birds, recognize and differentiate sounds emitted by birds.

CLASS ORGANIZATION:
Groups, whole class .

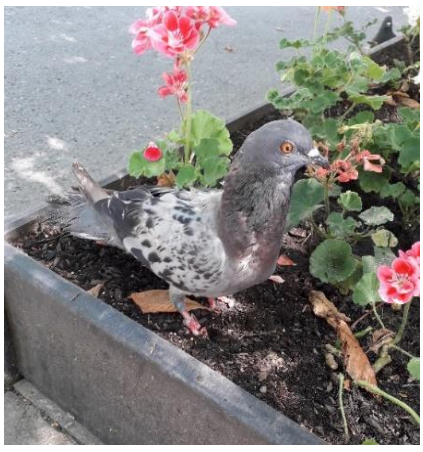
SUPPLIES:
Outdoor: Birds in their natural environment, feathers, pictures with birds, note books, pencils, coloured pencils, phones /tablets. Indoor: bird atlas or encyclopaedia, books, computer, internet.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Birds have feathers. They are the *only* animals on earth that have feathers. Most birds can fly, but not all of them. Penguins, ostriches, kiwi, and many domestic birds can't fly. Feathers come in many shapes, colors, patterns and sizes. Collect some feathers from the ground and look for the colors, patterns and compare the sizes.

How do they feel? Are they heavy or light? Do they look the same? Can you bend the feather? Is it elastic or rigid? The feathers are clean or dirty? Look, what do you think that the pigeon is doing right now? He is cleaning his feathers with the beak. What do you think, what is the role of the feathers? Birds take baths to keep their feathers clean. A bird taking a bath in a puddle is very active, fluffing up its feathers, dipping its head in the water, and then shaking off the water with great energy. Dust baths are also important to birds. Pigeons and sparrows can be seen fluffing their feathers and crouching down into fine sand to "dust" their feathers. This helps the birds to rid their feathers of parasites such as tiny lice or mites. Birds also oil their feathers. Oil from glands at the base of the tail is picked up with the beak and rubbed across the feathers when the bird is preening.



What are the parts of the bird's body? Help them to describe the head of the bird point to the shape and size of the beak, the position of the eyes, the nostrils. Is there any connection between the shape and the size of the beak and the food of the bird? Yes, there is. The shape and the size of the beak depend on the bird's diet: seeds, insects, bigger pray like other birds, mice, fish, snakes, frogs, rabbits or rats.

Look now at the bird's body shape. It is a special elongated form that favors flight; this form is called aerodynamics. The wings have different shapes and sizes. The arrangement of feathers on the wings also supports the flight - slipping the air past the bird's body, reducing friction forces or increasing friction forces when the bird lands. For more information about this topic see the activity *The Bird's Flight*. Watch attentively the position of the bird's wings in different situations. Also, the position of the tail. The birds use their tail for balance and to change direction of movement.

Now, look at the legs. How many legs has a bird got? Are they big or small? Thick or thin? Do they have fingers, claws? How many? Notice how birds move on the ground: is she walking, hopping? Can it easily change direction?

Encourage learners to communicate their observations and enrich the vocabulary introducing new words. Ask them to share their ideas with a colleague and then in small groups. In the last part of the activity concentrate pupils' attention to natural sounds, to bird sounds. Using a phone or a tablet pupils will watch & listen video files with bird songs. After a few sessions of practice can they recognize any birds after their way of singing?

Look back!

My students observed attentively the pigeons in the park, fed them, played a kind of "TAG" game and asked a lot of questions about pigeons and their life in our city. Although these birds have been living here for a long time for some of the children it was somehow an impactful first contact.

This activity can be continued with other sessions observing the social behaviour of birds, communication with other birds, their feeding mode and diet.

Safety note: pupils must wash their hands after touching feathers. They can also use disinfectant tissues or disinfectant gel. Ask children not to touch their face, eyes or mouth during feather or bird observation.

Follow up!

- Other related activities: *Bird' s Flight, Open your wings.*
- Some birds are amazing constructors. They build nests suitable for their size and number of chicks, using different materials and techniques. Plan an activity dedicated to this topic.
- There are many stories with birds as the main character: Andersen's *Nightingale*, *The Ugly Duckling* and *Wild Swans*. Read these wonderful stories.
- https://www.animalfunfacts.net/animal-species.html
- https://kids.britannica.com/kids/browse/animals/2173169

Eggs in bird nests

Get ready!

The purpose of this fun activity is for the pupils to investigate how birds make their nests, try to make some, and see if they are able to hold an egg when the students drop it from above. It is good to find a place that has a variety of natural materials for the children to use, such as soil, mud, leaves, pine needles, wood, etc.

Go!

Teacher shows the group an egg and asks questions like: "Which animals lay eggs? Where do they place them? Is it easy to make a nest that adequately protects the eggs?" Teacher then urges the team to think about how birds build their nests, what materials they need to use, how big they must be, what shapes they have etc.

The teacher explains to the children that they, in groups, will make their own nests with materials found in nature around them. The teacher determines how far students can look for materials and sets a specific time for the construction, making sure the time is enough to experiment and test the materials until students find what works best for them.

Finally, they split into smaller groups and begin to make their nests.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 90 min.

AIM:
Learn about nests and eggs

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Eggs, materials found outdoors

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

If the nests can be moved, after the construction is completed, the teams bring the nests into the group circle and present them. There we all look at them together and discuss things like: "Are they all the same? What differences can we find? In nature, do birds make the same nests? What are the factors that influence a nest? (materials available, bird size, predators, weather, etc.)".

Each group then selects a representative. The teacher hands the egg to be tested to this pupil. The students should throw the egg into the nest from the height of their shoulder. We all observe whether the egg remains in the nest, whether it breaks, or not. If possible, we can lay the egg in the nest and drop the whole nest from shoulder height.

If the nests created by the groups are not able to be moved, then we first do the experiment with the eggs and then we make a circle to discuss the properties of the nests.

Look back!

Discuss with the class: How easy was it to find the right materials for the nest? What difficulties did they encounter when they were building their nests? Is it easy for birds to make a nest? What do we do if we see a nest in a tree or shrub?

Follow up!

- This activity can become more complex by creating a store with non-natural items and giving the students the opportunity to think of other methods and ways to build nests for different types of birds. So, for example, a team might use its 10 stones to purchase a piece of string (3 stones), a piece of cloth (4 stones), masking tape (3 stones) and use all these in combination with natural materials to create the best nest!
- The nests can be used further during Math activities to create groups of eggs, compare them, estimate how many eggs can fit in a nest etc.

Make a nest

Get ready

During the unit on animals and their classification, we have a couple of minutes to think about words that relate to the topic. Once they have had enough time to think about few words, we sit down in a circle to brainstorm information about birds' characteristics, habitat, food and breeding.

Go!

The teacher will make different groups with the students. Once the groups are done, they will choose a bird name for the group. The teacher will give them a bag and a list with different elements that can be found in the nature and she will ask the children to go outside. List of elements that can be used for the nest: stones, flexible and hard sticks, sand/ earth, flowers, wood, leaves, water, moss, feather/ fur, seeds, dead insects, fruits, yard clippings, spider web, liana, pine cones, ferns.

The size and the amount of the different elements don't matter. The children will have a few minutes to find everything and come back to the place. Then, the time to make the nest will start.

At the same time that children are making the

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 90 min.

AIM:
Develop listening and speaking skills, empathy and expand vocabulary.

CLASS ORGANIZATION:
Small groups.

SUPPLIES:
List with different elements found in the nature.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

nest, they have to write how many elements are used (2 stones, 20 sticks, 3 flowers…). When they finish the nest, they will say the total number of elements used in the making of the nest.

Look back!

To finish the activity, they will have to write and describe the process of construction, how they found the elements and how they worked together to make it. Finally, the group will show the nest and they will explain which type of bird would live in the nest and why.

Follow up!

- Video how to make your nest: https://www.youtube.com/watch?v=y3KgsFdtgjo
- Video: Weaver bird's nest: https://www.youtube.com/watch?v=qbWM1QAVGzs
- After making the nest we can go out to do a bird watching day and compare the reality with the story that they imagined.

A special birdfeeder

Get ready

In Winter, nature falls asleep, and spending time outside can be troublesome. We can still find ways to get our children busy observing nature transformation and getting them involved in helping animals to survive rigid temperatures. With this activity children learn about what birds eat, have fun creating a birdfeeder which will be hanged outside on a tree branch. In this way, they will help birds to survive, and in the meantime, they have the chance to observe them.

Go!

Ask children whether they have seen any birds, and if they know what species of birds spend winter in your country. Enquire further about what birds eat during Winter. After a brief discussion, invite children to collect all useful information.

Divide children in groups of three and supply each group with:

- 1 bowl
- 1 wooden spoon
- 125 gr. of corn, grain or cereals
- 50 gr. of lard or peanut butter
- 1 - a piece of string

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 90 min.

AIM:
Observation skills, manual coordination, group work, develop relationships.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Peanut butter, wheat, cereals, corn, big pinecones, bowls, wooden spoon, string, kitchen scale, papers, pen.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

- 1 copy of the fact file (see below) and 1 pencil
- 1 big pinecone.

Each group chooses a name for their team and decides how to distribute tasks among them.

Fact file Instructions:

- put the grain inside the bowl and mix it with the wooden spoon;
- put soft lard or peanut butter in the bowl and mix it with grain (to soften the lard leave it on the radiator for two hours);
- using fingers, put the grain pie in the spaces between the scales of the pinecone;
- tie a piece of string to the top of the pinecone;
- hang the pinecone on a branch of a tree in the school garden.

Look back!

Invite pupils to check their pinecones along the way, and to replace them when needed.

Follow up!

- You can find plenty of pinecone feeder instructions on You Tube: https://www.youtube.com/watch?v=P9BFnTQR-L8

Title of the activity	
Necessary natural material	
Necessary material not available in nature	
How did you proceed to make the bird feeder?	…… …… …… …… …… …… …… …… .
In your opinion, which was the hardest thing to build a good bird feeder?	
Did you like this activity? Why?	

Metal investigation

Get ready

Organize a treasure hunt, outdoors. Have fun using a map, secret messages and/or riddles in finding the hidden objects. Place all the discovered objects in a special box. These objects are quite a strange lot: jewels made of copper, platinum, silver, inox, gold, different coins, a piece of aluminium foil, a safety pin, a tablespoon, a silver cup, calcium /magnesium/zinc pills, a can (from a soft drink), big salt crystals. What are these objects? What are used for?

Ask students to describe the objects. Emphasize metal-specific characteristics in children's responses. Except the pills, all the other objects look solid with a gray/silver/golden shinning.

Go!

What do these objects have in common? The answers can vary. Children's observations could be oriented on physical properties (shape, colour, size) or their utility. For example, the copper bracelet and the silver brooch are both jewels. Give them a clue by telling them that all these objects have something in common and asking the next question: "What are these objects made of?"

CURRICULAR LINKS:

AGE GROUP: 9+

TIME: 60 min.

AIM:
Identify properties and uses of some metal; use the appropriate vocabulary to describe the characteristics of metals.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
A box, metallic objects, zinc/ magnesium/calcium pills, salt crystals, sodium bicarbonate, aluminium foil, Metal quiz, Metal facts sheet, Metals ppt

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Children probably will identify the aluminium from the can, the iron/ inox from the tableware or the silver or gold of the jewels. Help them to associate a metal to each object and describe this metal. Example: "The cup is made of silver. The silver is grey and shiny. It produces a crystalline sound when it is hit. It feels cold when you touch it." Some of the observations are the same for the other objects except colours. Encourage your students to use descriptive words as much as possible for the metal objects under investigation: solid, rigid, soft, grey, shiny, whitish, dark, tarnished, rusty, silver, golden, brownish, heavy, light, cold, warm.

Introduce the new information related to the metals. Metals are solid, usually with a shiny surface. They can be melted, shaped; after cooling they become stiff. Introduce the melting temperature for each metal and compare the values. Once cold, metals become rigid. Metals are a large family of chemical elements. Reinforce the key words. Give them short information about metals like:

There is iron in our body (in our blood and liver). Iron atoms are a kind of postmen. They deliver oxygen from the lungs to the heart and brain and back. In contact with the air and moisture the iron rust. Planet Mars is called the Red Planet because its surface is very rich in rust and has a reddish colour. The core of our planet is a huge ball of iron. Iron is the most used metal on Earth. Iron is a dark grey, rigid and heavy metal.

The aluminium is a very light, silver-grey metal. Aluminium is the most widespread metal on Earth. Car rims, cans and airplanes are made of aluminum. Aluminum doesn't rust.

Introduce the melting temperatures for each metal and compare the values. The melting temperature of some metals influenced the course of human history. The Bronze Age (an alloy) was before the Iron age.

There are some special metals on Earth like zinc, calcium, magnesium or sodium. All these chemical elements are metals, a special class of metals. They are very important for our body but also for other living forms, like plants. Magnesium in the plants captures the sunlight needed for photosynthesis. Magnesium is light, rigid, shiny, white-silver. It burns in the air with a glowing flame.

Every adult human body contains one kilogram of calcium in bones, teeth etc. Calcium is a soft, whitish-silver metal. Calcium is the fifth element in abundance on Earth. It always combines with other chemical elements.

Sodium is also white-silver and very soft (you can cut it with a knife). Together with chlorine forms the salt (NaCl).

Look back!

Divide the class into small groups. Students must make a list of bodies in the environment in which metals are found and specify the type of metal used (or alloy). Students can write a paragraph about a metal specifying its characteristics, unusual properties, its uses or some historical information.

Follow up!

- In the treasure box there are silver and copper pieces of jewelry. Both metal objects are oxidized. Archeologist used some simple solutions to clean metal artefacts made of silver, bronze or copper discovered in archeological sites. Students can practice chemical reactions by doing these activities.

Yeast nutrition

Get ready

Put the students into groups of four or five. Ask: "What do you think yeast needs to carry out nutrition?" Let the students give their own ideas and answers.

Let them know it's time for experiments and show them the materials they are going to use:

- fresh yeast (15 g)
- warm water (200 ml)
- 2 spoonful of sugar
- 3 bottles
- 3 balloons

Go!

Every group label the plastic bottles:

A – water, sugar and yeast,

B – water and yeast,

C – sugar and yeast.

They add the following materials to each bottle:

• Bottle A: 100 ml warm water, 1 spoonful of sugar and 5 g of yeast.

• Bottle B: 100 ml warm water and 5 g of yeast.

• Bottle C: 1 spoonful of sugar and 5 g of yeast.

Then, they put a balloon over the neck of each bottle. Finally, they leave the bottles in a warm place for 20 minutes. Ask them: "What do you think it will happen?"

CURRICULAR LINKS:

AGE GROUP: 10+

TIME: 60 min

AIM:
See the result of an experiment; find out how yeast carries out the process of nutrition; understand that all living things carry out life processes.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
2 spoonful of sugar , 3 balloons , 3 plastic 1 l water bottles , 200 ml warm water, fresh yeast (about 15 g)

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

20 minutes later, the students describe what the three balloons look like.

Later, ask them the following questions:

1. "Which balloon has inflated the most?" The balloon on bottle A inflated the most.
2. "Yeast produces carbon dioxide as it carries out nutrition. Which combination produced carbon dioxide? " The combination of water, sugar and yeast produced carbon dioxide. "How do you know?" I know this because the balloon inflated.
3. What does yeast need to carry out nutrition? Yeast needs sugar and warm water to carry out nutrition.

Compare the hypothesis they said before and the end result; the students work with their groups to analyse the results of the experiment and draw conclusions.

Follow up!

- You can see the following videos about very interesting science experiments you can do in class or at home: https://sciencebob.com/category/experiments/
- Keep on being a young scientist!

Make your own yogurt!

Get ready

Today it's time to talk about healthy diet and the importance of the calcium for the bones in our body for children and teenagers.

You can gather the class in a circle and ask them questions like: "What food can you have to get calcium? Do you drink milk every day? What other dairy products can you have? Which food do you think it is heathier the one that we prepare ourselves or the one that we buy from the store? Give some reasons for your answer. Do you think you can make your own yogurt?"

Let's try to make your own yogurt: for this, kids only need these ingredients:

- 2 litres of raw milk
- 1 spoon of whole yogurt
- some sugar (if you want a sugary yoghurt)

Go!

Let's start the process:

STEP 1: Bring the 2 litres of raw milk into a boil. Start low temperature cooking and stir. Let it simmer for 15 minutes. Remove from heat.

STEP 2: Close the lid and let it cool.

CURRICULAR LINKS:

AGE GROUP: 9+

TIME: 60 min

AIM:
Be aware of the importance of having natural food, carry out a healthy diet, know the process of fermentation

CLASS ORGANIZATION:
Groups from 2 to 4 children

SUPPLIES:
Milk, yoghurt, sugar, pot, fridge, oven

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

STEP 3: Add 1 spoon of yoghurt when the milk temperature is 42-43º.

STEP 4: Keep it warm around 35-40º with some kitchen towels.

STEP 5: Let it still 8-10 hours.

STEP 6: Keep it in the fridge for a night.

STEP 7: Take it out from the fridge and move it. It's ready to taste it.

Look back!

Kids show their yoghurts to their classmates and they taste them. They describe the flavours difference between a natural yogurt and a factory yogurt. They can notice the importance of having other natural food, such as, natural orange juice, natural milk shakes, cakes made by ourselves,... to get a healthy diet.

Follow up!

- You can see the following video about how to make a yogurt at home https://www.youtube.com/watch?v=tyZ5mv8kyik.
- Another interesting video about fermentation is how to make cheese at home: https://www.youtube.com/watch?v=utyzDUrd2Bw

Exploring ice

Get ready

It's winter and nature is sleeping; it's cold, and the days are getting shorter and shorter. Often the sky is grey, sometimes it rains, and other times it snows. We might be lazy to spend time outside, for sure it is easier, and more comfortable to do activities inside our warm classrooms.

Should we give up going out, and breathing fresh air?

In winter, the outdoor offers plenty of opportunities to test your children's observation skills, their ability to endure difficulties, and solving problem strategies. While coming to school your pupils might have noticed that ice has covered the ground, the grass, and the tree branches. To create the right atmosphere you can consider reading to your children this entertaining story, *Ice Boy* by David Ezra Stein; you can find this story also online check this link: https://www.youtube.com/watch?v=M7dWQgeS3Ws.

Go!

On a freezing day prepare your class, make sure all pupils are dressed warmly and go outdoors. Let the children run and wander in the garden observing what surrounds them. If you planned a nice walk in a park or in a forest, give plenty of time to your children to explore the place, and collect any loose item they can pick up: loose twigs, nuts, acorns, pebbles, chestnuts, berries,

CURRICULAR LINKS:

AGE GROUP: 4-6

TIME:
40 min. intro in classroom; 45-60 min. outdoor walk; 30 min. indoor; 30 min. indoor.

AIM:
Developing concentration skills, listening and comprehension skills, observation skills, problem solving strategies, manual skills

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Outdoor: warm clothes, backpacks and bags to put natural elements; Indoor: ice trays, and ice cube molds, water, light box table or light panel.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

leaves, pine cones, seeds, pine needles, grass stems pebbles etc.

During the walk or the exploration make sure to collect your pupils' observations, questions, and comments. If you have an opportunity to stop, and gather your children in a circle, it could be easier for you to collect the different comments of your pupils. Asking questions such as: "Where does ice come from? What happens when ice captures nature? Where does ice come from? How does it get formed? Why does ice melt if you hold it in your hands? What happens when ice melts?"

Picture by Donata Crisci in Bibbiano Infant school RE

Back in class invite the children to put on the table all what they collected during the outdoor trip. Let them observe all the natural elements. Organize your pupils in groups of four or five children and give to each group an ice tray or ice cube mold. Invite children to pick the natural elements they are interested in, and to put them inside the ice tray, or distribute them inside the ice cube mold. Each group will decide how, and where to distribute the natural elements they collected, inside the different container you have given to them. Ask each group what needs to be done to obtain ice, is it sufficient to put the trays outside on the window sill or is it better to put them in the school freezer? Is it necessary to add or pour something to the ice trays? Will ice appear magically even if we do not add water? Take time to investigate with your children all possible situations.

Next each group will pour some water in each container, and section of the ice tray or cube mold. Do your pupils have an idea of how long the trays will need to sit in the fridge, so that water becomes ice? Invite children to make hypotheses.

Picture by Donata Crisci, Bibbiano Infant School (RE)

"In which trays water will be transformed into ice sooner? In the trays which are outside on the window sill or the ones in the freezer?" Listen to their suggestions. And record all the answers.

Picture by Donata Crisci, Bibbiano Infant School (RE)

Then, put some trays inside the school freezer, and put some trays on the window sill. When the ice is formed, show the ice trays and ice cube molds to your class, put them on the school table and invite your pupils to observe how ice has captured their natural elements.

Pictures by Dontata Crisci Bibbiano Infant School (RE)

If your school has a light panel, your children will be able to admire the magic of the light reflecting through each ice cube. Otherwise, distribute some mirrors, and flashlight and let your pupils observe the magical objects they have created.

Donata Crisci Bibbiano Infant School (RE)

Look back!

At the end of this ice exploration project children might request to listen to the story you read to them at the beginning once again. Children love repetition. Your class will also greatly enjoy the move and freeze dance activity song and music see the links below in the 'Follow up' section.

A special thanks to Donata Crisci of Istituto Comprensivo Montecchio, RE Bibbiano Infant School who shared with us this activity and contributed with wonderful pictures!

Follow up!

- https://www.youtube.com/watch?v=M7dWQgeS3Ws.
- Freeze songs: https://www.youtube.com/watch?v=2UcZWXvgMZE, https://www.youtube.com/watch?v=388Q44ReOWE

Water cycle

Get ready

Before explaining what a water cycle is, let's ask the students to draw a picture about it. Start showing several pictures, then we will ask questions like "Will we be able to create our own water cycle? Finally, we explain the experiment we are going to do.

Go!

Add a little liquid with dye in the bag, close and hook it with adhesive tape to a window where there is Sun. After a few hours we can see the result. While we wait for the result of the experiment we try together to formulate a hypothesis of what is going to happen. When the temperature inside the bag increases, some of the water begins to evaporate. This water vapour, accumulates on top, as it does in the atmosphere. After a few hours, these accumulations result in the condensation of the vapour in the form of drops, appearing on the walls of the bag.

Look back!

When we have our work done, we will show it to the rest of the students. We will discuss the initial hypothesis and students will compare their initial drawing to their last findings and make changes accordingly.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 90 min.

AIM:
Students must identify, classify and express orally the water cycle process.

CLASS ORGANIZATION:
Small groups.

SUPPLIES:
Water, zip closure bag, crayons, colourant and adhesive tape.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Fire snake

Get ready

The trigger of this activity was a salamander, not a snake. Children discovered a *Fire Salamandra* during one of our outdoor explorations. Intrigued by this fascinating life form, students dedicated an entire morning observing the salamander and its habitat and expressed interest in finding out more about it. In the next activity, inspired by the name of our new friend, we produced a spectacular chemical reaction, discovered more about mixtures and about irreversible processes.

Children work in small groups of 3-4. Each team has a metallic tray, a small bowl, a cup, sand, baking powder, powdered sugar and eye protectors (optional). First, reinforce the safety procedure. Children must follow the instructions. Only the teacher can handle matches, lighter, alcohol or ignition fluid. Under supervision, older students can use the long matches. Prepare an .extra amount of sand to extinguish the fire when needed.

Go!

Step 1. Mix in the cup 1 spoonful sodium bicarbonate (baking powder) with 4 spoons of powdered sugar (a mixture 1:4). Mix well.

CURRICULAR LINKS:

AGE GROUP: 8+

TIME: 50 min.

AIM:
Practice skills of measuring quantities, make mixtures of substances (in liquid, solid and gas state) in given proportions, observe irreversible processes and the effect of heat on some substances.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Sand, isopropanol alcohol, rubbing alcohol or lighter fluid, baking powder, powdered sugar, a heat proof surface, a bowl, matches or lighter, eye protectors.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Step 2. Put the sand in the bowl. Carefully sprinkle sand with isopropyl alcohol and/ or lighter fluid. You can try alcohol for medical use, too.

Step 3. Pour the mixture of sugar and sodium bicarbonate on top of the sand.

Step 4. Using a lighter or a long match, light the mixture.

When the baking soda gets hot, it makes carbon dioxide gas. The pressure from this gas pushes the carbonate from the burning sugar out, producing the *black snake*, which should continue growing for 20 minutes, give or take.

Look back!

Through this activity the students make a mixture of two solid substances, respecting a certain proportion, the combustion of this mixture and the effects of fire on substances. They experience an irreversible process-combustion. Although simple, the experiment depends on many variables: the type of sand, the type of burning liquid, the sugar (powder or crystals). Challenge your students to discover the safest and most spectacular *recipe*.

Follow up!

- This activity can be continued with a guided observation of the burning of liquid and solid substances. Carry out these experiments outdoor in order to protect children from irritating, unpleasant odors and smoke.

Storm

Get ready

Before explaining what a storm is, let's ask the students to draw a picture about it. Start showing several images of storms, then we will ask questions like "Have you ever seen a storm? What happens when there is a storm? What colour are the clouds when it is stormy?". We tell the children that we are going to make a storm in a glass! We explain the experiment we are going to do and ask the students if they think they will be able to make a storm with these materials.

Go!

The materials we are going to need per pair of children:

- A transparent, clean glass;
- Water;
- Shaving foam;
- Blue food colouring;
- Torch.

Place students in pairs or small groups, and give them a glass of water, after asking about different sources of water or where we see water.

Spray shaving cream in each glass so that it

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 90 min.

AIM:
Students identify, classify and express orally the storm parts.

CLASS ORGANIZATION:
Small groups.

SUPPLIES:
A glass, water, shaving foam, blue food colouring and torch.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

floats on the water in the glasses. We explain that the shaving cream is like the clouds in the sky.

Students add drops of blue food colouring to the shaving cream floating on the water. We ask them, "What do you think it is going to happen?" Let them express their ideas and ask them to give reasons to back these hypotheses. Students watch as the blue food colouring passes through the shaving cream and into the water giving the effect of falling rain. Use torches to make the lightning effect. Think of different ways to make the sound of thunder (clapping, storm background from You Tube, hitting a metal panel).

Look back!

Once the experiment has finished, we will leave time to discuss and think about things associated with the storm (thunder, lightning, hail, wind). We will ask students to take out their drawings they made at the beginning and we will discuss the differences between the drawings and our experiment. They will say what improvements they made on the drawing as a result of this activity.

Follow up!

- Start a discussion about fears raised by stormy weather. Reduce these fears by explaining the science behind the storm and by discussing safety during stormy weather.
- Link related to this activity: https://www.youtube.com/watch?v=UGWnwlIbJK4

Solar system

Get ready

In order to review the knowledge about the Solar system, you can choose one of the following activities:

1. Solar system craft.
2. Solar system with natural elements.

The first activity can be done both indoors and outdoors while the second is best to be done in the open air. For the Solar system craft you will need cardboard, crayons, scissors and a binder or a pushpin. It is best if you provide the students with a first model of circle with handle, the one you will need to draw the planet on.

Go!

Sit down in a circle and tell the students that their challenge is to remake the Solar system in groups.

Activity 1: Solar system craft:

First, they will prepare all the cards and begin to write the names of the planet and make the corresponding drawings. Once they have them coloured, they will classify them according to their distance from the Sun. If the planet is further from the Sun, the length of the cardboard handle will stay longer, if the planet

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 90 min.

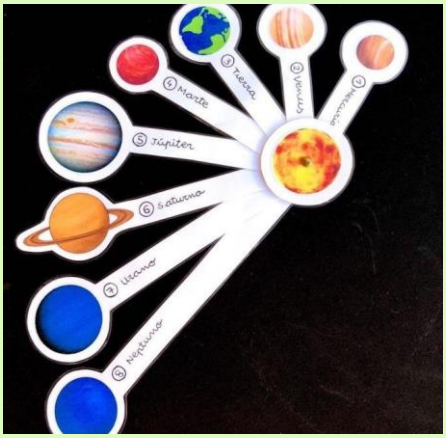
AIM:
Review information about planets in a special way; develop team work skills.

CLASS ORGANIZATION:
Small groups.

SUPPLIES:
Cardboard, crayons and scissors, sticky notes and natural materials.

OUTDOOR/INDOOR:

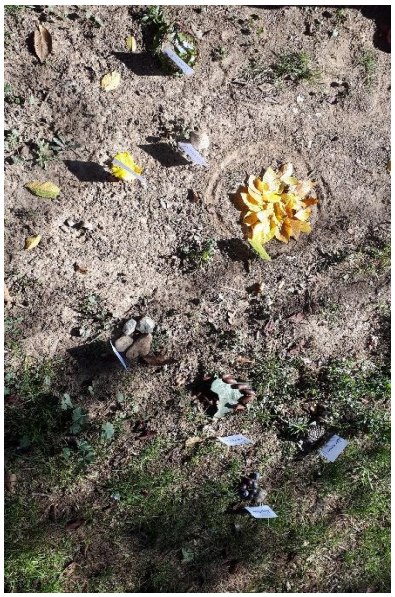
TEACHER/CHILD LED:



is closer to the Sun, the handle will be shortened. When they are in the right order, they get attached with a binder or a pushpin to the Sun. Now, you can move them around the Sun.

Activity 2: Solar system with natural elements:

Give each group 9 sticky notes to write the names of the 8 planets in the Solar system and the Sun. Then, ask them to gather natural materials to represent the Solar system and then place each sticky note on the right planet. Let the groups decide for themselves how they want make the representation: linear or around the sun. Do the materials chosen represent the colour, the special features of the planet (rings, or no rings), the mass of the planet (gas planet or solid)? Are they positioned at the right distance from the Sun and from each other (Mars is more than twice further away from the Earth than Venus) etc.



Look back!

Sit down with the students in a circle and discuss which representation was more challenging or fun. Which one needed more cooperation and stirred more discussions?

Follow up!

- Students can see some ideas in this video: https://www.youtube.com/watch?v=pS7p6FfU4bE
- Make a simple sun clock by pushing a stick in the ground and marking the shadow it casts at different hours. The next day, check if the clock is accurate.

A new friend

Get ready

A new friend moved to our Outdoor Center: a creature like no other with unique features and character. The children will think of the best home to suit the looks and personality of this new friend.

This is a place-based lesson that combines communication, writing and STEM. First, a cute creature is needed. Try to purchase one that, even if it has some animal features, it does not look like any definite animal.

Go!

Children will meet our new friend, the new inhabitant of the Outdoor Center. One by one, they can touch, smell and observe the toy. By analysing it, they come with ideas of how the creature lives (big eyes and small nose means that it relies rather on vision than on hearing, short fur means that it is a warm-blooded mammal, which lives in a temperate or hot area, the color of the fur means that it cannot rely on camouflage, the short legs show that it can probably roll or bounce rather than walk or jump. Children can also discuss the place of the creature in the food chain, or, considering the life-cycle, if it is a baby or an adult).

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 90 min.

AIM:
To evaluate scientific evidence and draw conclusions; develop problems solving skills and use nature as a valuable resource.

CLASS ORGANIZATION:
Groups, whole class .

SUPPLIES:
Creature, writing pads, Fact file and pencil for every group.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Next, they are presented the worksheet Fact File where they will invent the story of this new creature: name, place of origin, abilities, likes, allergies, fears, friends and reasons to move here. The students complete the fact file within 10 minutes then, they have a new task:

The task is to build a home for this creature. Success criteria: build a home that suits the creatures' looks and personality described in the fact file. The material used are the ones in the nearby environment. The children will need at least another twenty minutes to plan and build the home. It's best if they work in groups of 4-5 students. When ready, each group will present the fact file and the home, and will give reasons for their decisions. After every presentation, the other children can ask questions or give suggestions. Some well-placed questions can give food for thought.

Look back!

Appreciate every group project and ask them to talk about how they worked together as a team. For our lesson, we had a volunteer parent attending who was an architect. At the end of each presentation, she made very nice connections with real life by telling children about the advantages and disadvantages of homes built under the ground or the ones made of stones or wood.

Follow up!

- Continue the story of this special friend with his experiences in the children-built homes and why not, new adventures.

Sustainability

Get ready

"Sustainability", such a big word! Abstract concepts are difficult for the children to grasp and they need more than a definition to understand them. We, nature lovers, want "sustainability" to be more than a big word for our children. So, we took the children outdoors in an area where they can feel the forest, the meadow, the orchard, the wetland and they can see a rivulet and a waterfall.

Go!

Make a circle and let the children know that they are going to take a walk in silence. During this walk they are asked to think of pleasant memories that connect them to the natural environment and to enjoy the walk with all their senses. Also, they are asked to look around carefully and think which of the natural things they are most attached to and they would really like them to last so that they could play with children of their own then they grow up.

Once the tour is ready, give them clipboards with paper and felt pens to draw the things they would like to preserve for the future and also write 3 ways of how we can ensure their

CURRICULAR LINKS:

AGE GROUP: 8+

TIME: 45 min.

AIM:
To understand the concept of sustainability; to connect emotionally with the local environment; to find ways to conserve nature and raise awareness of the need for a sustainable living.

CLASS ORGANIZATION:
Groups of 8-10 learners.

SUPPLIES:
Clipboards, paper, felt-pens.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

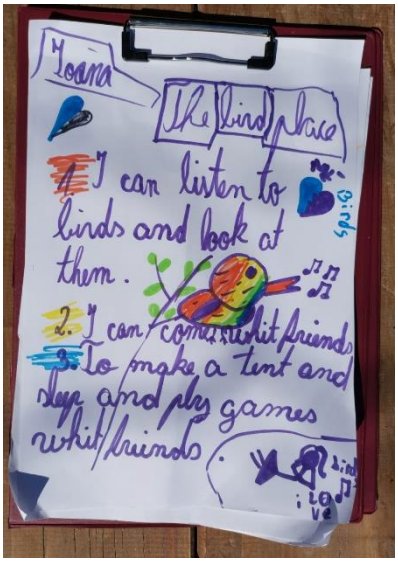
survival on a long term.

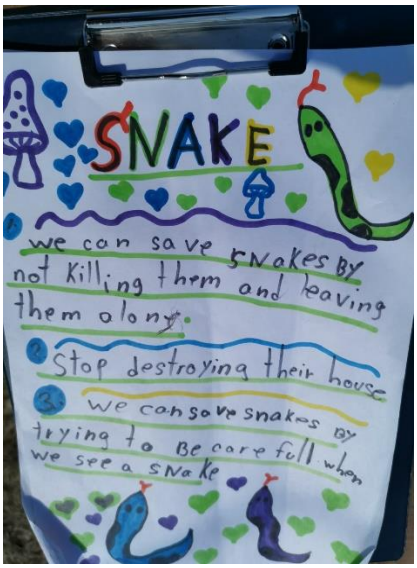
Once the students are ready, they take turns in presenting their points of view.

Look back!

Get the children together and keep a moment of silence. Then tell them that "preserving resources and using them in a balanced way so that the future generations can enjoy them, too" could be a definition of "sustainability". What they just did was thinking of measures to ensure the sustainability of the things they love. Point out that some children want to preserve the forest, others want to keep the rivulet clean so that they can enjoy salamanders with children of their own, others want to save local birds or snakes etc. All these endeavors, put together, can help us achieve a sustainable development and a greener society. Each of us can be a change-maker and working together can really make a difference. Paraphrasing Andre Malraux' famous words, we could say that "the future will be sustainable or won't be" at all!

These are some the works of 3rd graders as they wrote them:





Follow up!

- See which of the measures listed could be already put into practice and make them into a class project!

Decomposition game

Get ready

Each student chooses an object from the materials prepared (and included in the list). The students are invited to identify the object and to specify if the object is natural or man-made. What characteristics of that material (plastic, glass, rubber, metal) do they know? Encourage them to talk about these materials, to listen to each other and to analyse the accuracy of the information provided in each case. "What do you know about the impact of using these materials on the environment? Are these materials friendly with the nature? Is the manufacturing process friendly with nature? What is the decomposition rate?" The teacher will introduce new information starting from students' knowledge and interests.

Go!

Split the class in teams. The first task is to make a list of the items they chose and to write the presumed decomposition rate for each item. The second task is to order along the line (traced with chalk or sticky tape) these items according to the rate of decomposition.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 40 - 50 min.

AIM:
Identification of natural or man-made materials; describing these materials underlying some characteristics and the impact on the environment; grouping and ordering these materials according to the decomposition rate.

CLASS ORGANIZATION:
Whole class, teams

SUPPLIES:
Natural and man-made materials, (from the list), Decomposition Rate List, chalk or sticky tape

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

In the last part, using the *Decomposition Rates List* the students are invited to check their line and to re-order the items if necessary.
Finally, each team introduces its line specifying the nature of the materials and the rate of decomposition.

Look back!

This activity can be a trigger for debating different problems like: Glass has an undetermined decomposition rate. Glass objects can "live for ever". On the other hand, glass is a versatile material, it is made from a natural cheap element (sand), it can be easily reused and also recycled. So, good or bad?

Decomposition Rates List:

Banana peel 4 weeks	Cotton 5 months	Leather shoes 40 years
Paper towel 4 weeks	Orange peel 6 months	Polystyrene cup 50 years
Toilet roll 1 month	Plywood 3 years	Tin can 50 years
Paper bag 1 month	Milk carton 5 years	Drinks can 200 years
Newspaper 6 weeks	Cigarette ends 5 years	Plastic bottle 450 years
Cardboard box 2 months	Wool 5 years	Nappies 450 years
Apple core 2 months	Plastic bag 20 years	Glass bottle undetermined

Follow up!

- Solve Math exercises like: 1. A plastic bottle lives around 450 years. If a generation means around 75 years, how many generations will have that bottle "in the picture"? 2. How old I'll be when today's milk box will completely decomposed? How about the polystyrene cup?
- Investigate the formation and use of compost.

Geography primary school activities:

- Rocks and minerals
- Rock formation
- Flag painting
- Cardinal directions
- Mental maps
- Romania
- Active natural map
- Treasure hunting
- Sky gazing
- Map with natural loose parts
- Follow the stars

Geography

Rocks and minerals

Get ready

The teacher introduces the topic with some videos and some images. Afterwards, she/he will explain the students that almost everything around us is made of minerals and rocks. Moreover, the teacher will explain the differences between minerals and rocks, their characteristics and properties.

The teacher advices children to go outside with their families and to come to the class with a few rocks which can be found in the street or in the outdoor area. The size, colour, or the quantity don't matter.

Once they know something about rocks and minerals, they can bring a few things made of rocks or minerals that they can find around.

Go!

We make a circle with all the children. First of all, we study the name, the characteristics and the properties of the rocks and minerals that the laboratory of the school has offered us. After that we compare the rocks that they have brought to the class and we discover if it is a rock or a mineral and its name.

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 90 min.

AIM:
Develop listening and speaking skills, empathy and expand vocabulary about rocks and minerals.

CLASS ORGANIZATION:
Small or large groups.

SUPPLIES:
Stones and minerals from the science lab and stones and minerals that students find in their environment.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Finally, we study the objects, how they are made and which rocks or minerals they are made with. To do that we can go to the computer room and do a research in couples. All the information will be written in a "research book". This information will be available to the class to look for answers to questions.

Look back!

Discuss how important the rocks and minerals are in our life. What are their properties and their characteristics? Where can we find rocks and minerals? What happens if all the rocks and minerals disappear?

Follow up!

- Check out this video on types of rocks: https://www.youtube.com/watch?v=CeuYx-AbZdo
- Other lessons on rocks are *Types of rocks* and *Introduction to rocks.*

Rock formation

Get ready

Understanding rock formation and rock cycle is easy with a sweet activity like the next one. How can chocolate and jelly make students understand what sedimentary, metamorphic and igneous rocks are? Here you are!

Go!

Rocks get to be weathered into smaller particles, heated, cooled and compressed. Chocolate can, too!

1. Sedimentary rocks: look at the blocks of chocolate. They look quite hard. Scrape shavings from the blocks of white and dark chocolate on an aluminum foil. All these represent sand grains or pebbles that form because of weather and erosion. Cover the shavings with the foil and press as hard as you can. Rocks get compacted by pressure in millions of years. After about 5 minutes, open the foil carefully

CURRICULAR LINKS:

AGE GROUP: 11+

TIME: 50 min.

AIM:
To understand rock cycle and how rocks change from sedimentary in metamorphic and then igneous. .

CLASS ORGANIZATION:
Groups, whole class.

SUPPLIES:
Dark and white chocolate, fruit jelly, aluminium foil or plastic bags, hot water.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

and observe how the chocolate forms a conglomerate made of small bits and parts.

2. Metamorphic rocks: place the sedimentary chocolate in a plastic bag. Press with your hand and use the warmth of your body to make metamorphic rocks. Metamorphic rocks are a result of intense heat and pressure within the Earth's crust. The two colors of chocolate become even more combined but you can see the *banded/ foliated* texture which is also visible in many of these rocks.

3. Igneous rocks: now, the class can work in two teams: one will work with chocolate, the other with jelly. Pour some really hot water in a bigger cup. Please, be very careful and ask the students to handle the bag with care so that they do not get into contact with the hot water. Place the bag with the chocolate in the hot water. Keep it in the water for 1 minute. Check to see if the chocolate has melted. By now, all the different colored chocolate has melted together.

   The second group places colorful jelly in a plastic bag. Prepare a cup with hot water for this group, too, and discuss the safety measures. You can even tie a knot on the bag to make sure the content is not getting wet. Float the bag on the hot water and observe from time to time how the jelly melts and the different colors mix. Just like in the hot magma, the mixture of chocolate and jelly liquefies. The rock that is formed of this cooled magma is called igneous rock. Let the chocolate and jelly cool off to form a new, solid formation. (You can use ice to fasten the process). Erosion and weather will transform in a long time this type of rock into sedimentary rocks.

Look back!

Sit in a circle and discuss how the rock cycle is a continuing process that occurs throughout a very long period. One type of rock can become another if we watch its evolution during geological time. Most rocks have undergone a number of such changes in the rock cycle! Finally, it is time of a tasty treat!

Follow up!

- Bring several types of rocks and ask the students to identify what types of rocks these are.
- Ask the students to have protection glasses and a hammer and let them explore rock formations. Don't forget: safety comes first!
- Explore fossils that you can find in your area!

Flag painting

Get ready

Previously in Social Sciences class, we introduce the unit of the European Union. In this class we talk about the habits, flags, currencies and languages that differentiate one country from another. Then we start a discussion to find out what they know about the flags, for instance: what colours they have, how many types of flags there are or what they are used for.

Go!

The previous days to the activity, they look for natural materials such as branches, leaves, flowers and others such as pulses, pasta or rice. In groups of six children, they are ready to glue the different natural elements on the cardboard, with the flag already drawn.

Once all the materials are glued on the cardboard, we let them dry and finally we paint each strip of the flag of the appropriate colour.

Look back!

This activity allows us to know what is the flag of each country and to be able to differentiate them.

We sit in a circle to talk about the following questions:

CURRICULAR LINKS:

AGE GROUP: 8+

TIME: 90 min.

AIM:
To differentiate the flags of the European Union in a funny way, know the different aspects (habits, currency, languages) of the European countries

CLASS ORGANIZATION:
Groups of six or whole class

SUPPLIES:
Cardboard, acrylic paints, brushes, pulses, rice, leaves and branches.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

- What kind of material have you used for each colour?
- Do you know the flag of our country?
- Do you know the flags of the neighbouring countries?
- Has it been an easy way to learn which flag belongs to which country?
- Can you show the countries on the map?
- What does the flag of European Union look like?

Follow up!

- In class, we can play a visual attention skill game to see if they know how to differentiate the flags of each country: https://www.youtube.com/watch?v=SYXjA0kFUAQ

Cardinal directions

Get ready

The teacher introduces the topic with the question "What are the cardinal directions?" After that she/he will ask "why is important to know them?". While the students say their ideas, the teacher will write everything on the blackboard. The teacher will play an introductory video about Cardinal directions, followed by a song.

After watching the videos and listening to the students' opinions, the teacher asks: "What is the instrument that is mentioned in the video?" (The compass rose). "What would happen if we got lost and we didn't have a compass rose? How can we discover the cardinal Directions?"

To show the students how to do it, we explain them that it will depend on the moment of the day (night or day). If we get lost at night we can find the NORTH looking at the stars.

Locate the constellation of the Big Dipper. The outer edge is composed of 2 stars. These 2 stars are known as "pointer stars", as they literally point towards the North Star. The North Star is the most extreme point of the Little Bear and is the brightest star in that constellation. When you are facing the North Star, then you will have the true north in front of you.

How to find the North Star: http://survivaltopics.com/how-to-find-the-north-star/

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 90 min.

AIM:
Develop listening and speaking skills, empathy and knowing the cardinal directions and how find them without a compass rose.

CLASS ORGANIZATION:
Small or large group

SUPPLIES:
Video player, compass rose, activity sheet.

OUTDOOR/INDOOR:

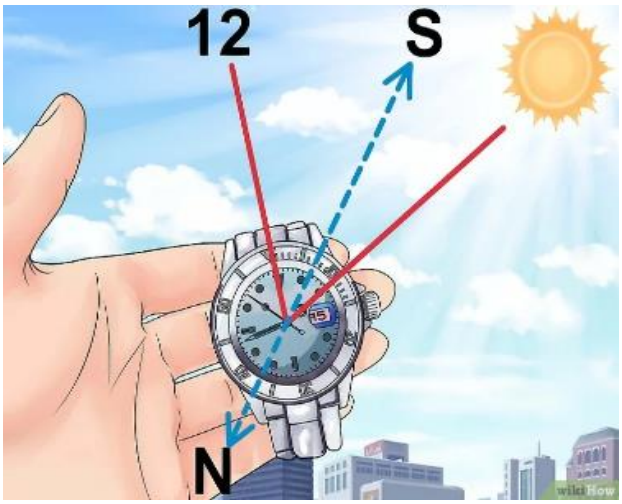
TEACHER/CHILD LED:

If you are lost in the forest during the day you have other options:

1. Search for moss. It usually grows north-facing (because it is usually the darkest and wettest) at the base of trees or stones. Tree branches develop more in the southern part.
2. If you don't have a compass but you have a clock with hands, you can use it to find the north. With the clock horizontal, or on the ground, you have to point the hour hand towards the sun. Now you have to look at the angle between the hour hand and 12 o'clock. The line that divides that angle into two, points to the north direction (in the northern hemisphere).
3. Search for spider webs. They tend to appear on the south side of the trees.
4. Contemplate the sun, which rises (more or less) in the east and sets (more or less) in the west. However, the exact position of the sun varies by season and latitude.

Go!

Once we finish the explanation, we divide the class into small groups (4-5 students) and we give them a sheet and a pencil. We ask them to draw a school in the middle. Then we draw a compass rose in the right-hand corner. Next, we draw symbols for North (N), South (S), East (E) and West (W) on the edges of the paper. We have to find these cardinal directions and to take a picture of something on the north, south, east and west of the school. Once they finish, we take a compass and we use it to see if the answers are right.



Look back!

To finish this activity, we sit in a circle and we ask them how they found the different cardinal directions, what way they used, the difficulties and facilities that they had and how they solve them.

Follow up!

- Useful activity: https://www.youtube.com/watch?v=yOv_6yyuJJg
- Introductory video: https://www.youtube.com/watch?v=2dDOhSvZE-U
- Song: https://www.youtube.com/watch?v=f2I81_BFb-s

Mental maps

Get ready

Mental maps are a useful tool to organize information when we travel. We can create mental maps using drawings, pictures, words related to sounds, scents and emotions. Encouraging children to collect mental pictures of what they see, hear, smell and feel when they take a trip, is a smart way to train them to focus and collect data during their journey. This activity can be presented to the class before any school excursion. Each child will be encouraged to collect any significant sensory stimulus during the school trip, so that s/he will be able elaborate and construct his/her own mental map later on, in class.

Go!

Before a school trip, distribute little notebooks and pencils and a little paper bag to each child, inform the class they can take notes of what they see, hear, smell and feel during the trip. Children can also collect little objects on the way such as: park entrance tickets, postcards, leaflets, leaves, seeds, stones, flowers, pinecones, shells etc. Encourage them to collect meaningful information, all what they consider particularly striking and peculiar. Give clear examples, such as "You could write the

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 90 min

AIM:
Concentration, collection of data, reorganization of data; sense of direction.

CLASS ORGANIZATION:
Individual, groups, whole class

SUPPLIES:
Small block notes, pencil, paper or tissue bag.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

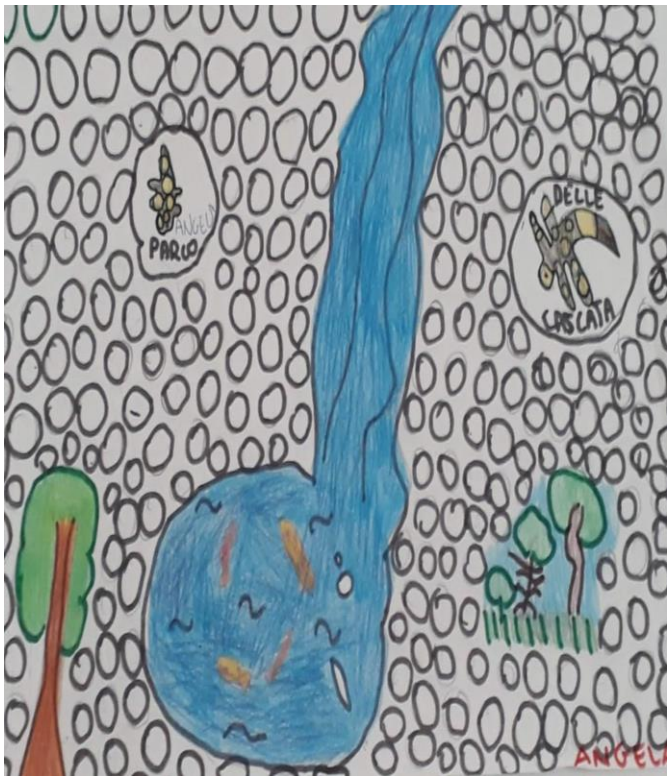
sound of a loud noise that you heard, such as the noise of a waterfall, or an animal's cry, draw a curious shape of a tree, or a bright colourful bird, write how happy you have been when we reached the very top of the mountain, or how disappointed you have been when rain began to fall etc.".

During the trip keep reminding children, they need to take notes of the most interesting experience.

Back in class, make a circle and let children share and discuss about what they have collected during the excursion. Leave at least 20 minutes for this phase, then distribute drawing sheets and ask each pupil to recreate a mental map of the trip.

Children are free to represent their experience. When everyone is ready, put together all children' mental maps to form a unique class mental map of the school trip.

Before the school trip, the teacher can also decide to divide the class in groups and give a specific assignment to each group, one group will collect visual data, another group sound data, another, scents data and finally, data on feelings and emotions. In this case, each group will create a common mental map of their specific collection and later everything will be gathered to form a unique class mental map.



Look back!

Once the work is done, ask the children whether they liked the activity, and whether and how they think creating a mental map on a specific curricular topic could be help them recalling information and memorizing the main details more easily.

Follow up!

- Visit the internet site for more details about mental maps https://www.thoughtco.com/mental-map-definition-1434793.

Map with natural loose parts

Get ready

Choose a location with a variety of natural materials, such as sticks, leaves, stones, bark etc. Split the group into teams of up to 5 children and assign one area (200-500m2) for each team. Explain that they will have 20 minutes to create a 3D map of their area using natural materials.

Go!

Each team chooses a flat and clear spot to create their map. They then set out to explore their area and to decide which features need to be included in their map. Encourage each child to use a variety of materials to better depict their area. Pose questions about distance and positions. Give them a warning 2 minutes before time is up.

When time is up, all teams together visit the maps of each team making comments and asking questions.

Look back!

After visiting all the maps, all children return to the circle and we discuss the activity. How did you choose which features to include in the map? Would the map look different if you were standing on the other side of the same area? Were all maps the same size? Perhaps you can introduce to the children the concept of proportion/ scale.

CURRICULAR LINKS:

AGE GROUP: 8+

TIME: 40 min.

AIM:
Develop teamwork, map building, sense of space and distance.

CLASS ORGANIZATION:
Groups of up to 5 children.

SUPPLIES:
Natural elements

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Romania

Get ready

First, we revise the information about the geographical regions, key topographical features (hill, mountains, coasts and rivers) and neighbours of our country.

I let the children know that the next class will take place in the outdoors and aims at revising and deepen knowledge about the above mentioned subjects.

Go!

Form groups of 4 students and discuss the materials necessary to make the map: leaves, sticks and markers to write.

Let the students establish the cardinal points and the legend or key of the map that explains the symbols used. They also establish the neighbours and the main geographical regions: (a student is in charged in representing the boundaries and the positioning of the neighbouring countries, and other three students will represent each key topographical features: mountains, hills and the plains.)

The lively exchange of information and debates lead to a conscious observation of all the elements that form the physical

CURRICULAR LINKS:

AGE GROUP: 9+

TIME: 60 min.

AIM:
To revise knowledge about the neighbours and geographical regions of the country.

CLASS ORGANIZATION:
Small groups.

SUPPLIES:
A large piece of cardboard, leaves of different colours, sticks, glue, markers.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

geographical map of Romania and reaching all the objectives of this lesson: characteristics of a map, neighbouring countries, the description of the key topographical regions.

Look back!

The activity is dynamic, the students get involved in preparing the materials and making of the map, they share with each other lessons learnt at school and personal experiences. At the end of the activity, each team shows its achievements. They will also talk about new findings, how they felt, how they appreciate the teamwork and their personal contribution.

Follow up!

- The maps can be displayed in the classroom and further used during geography lessons.
- Another option is to make the physical map in clay.
- Make a map of the country with personal memories: children draw on small pieces of paper their experiences in different parts of the country (visit to the Dinosaur Park in Râșnov or of the Botanical Gardens in Cluj Napoca) and place them in the right location on the map.

Active natural map

Get ready

Students receive a cube with the following words: rivers, mountains, coniferous and deciduous forests, the Black Sea, plains and lowlands. They discuss the meaning of the words and the objects and remind the main geographical places in the country. They are divided into 3 teams and each team receives a contour / natural / map of Bulgaria and a set of natural materials. They name them and explain where these materials grow or can be found.

Go!

Each team has the right to roll the dice twice. Depending on the information read on the upper side of the dice, the respective team with the help of natural materials marks the geographical object on the contour / natural / map and makes a legend. Then the team tells about a geographical object /e.g. Danube/.

Look back!

Students learn:

- How to make a map with natural materials.
- How to make a legend on a map.
- How to identify and locate geographic features on a map.

CURRICULAR LINKS:

AGE GROUP: 9+

TIME: 40 min.

AIM:
To make a map of Bulgaria and a legend with the help of natural materials.

CLASS ORGANIZATION:
Groups

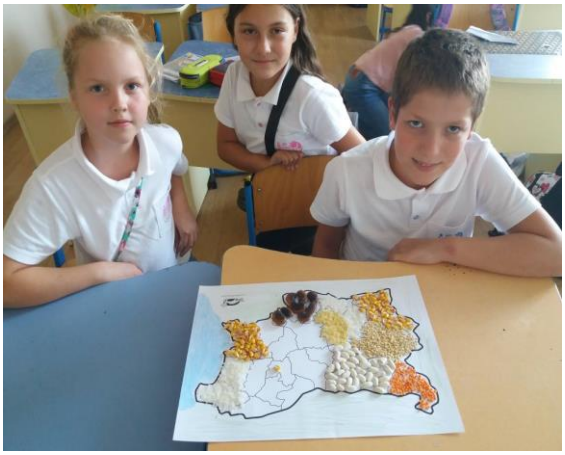
SUPPLIES:
Set of natural materials, contour map, pencils, cube unfolding

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

- How to work in teams.
- How to present their product.

They gather in a circle and express what was difficult for them, what was of great interest, what did they learn, how do they feel working on the taskand give ideas for upgrading this activity.



Follow up!

- Students can use seeds to make out the geographical map of the country. They can discuss the names of the seeds and the use of different seeds.
- Students can use natural materials to build up historical places or places of cultural heritage. Before that they search information about the places.
- Template of the map of Bulgaria: https://www.thinglink.com/scene/1103659426801254402

Treasure hunting

Get ready!

Diving among old books in the library we have found a letter more than one hundred years old! A pirate wrote to his nephew telling him where he had hidden an important treasure. The route that describes the letter goes through different buildings and emblematic places that now no longer exist, so we must superimpose the old map to the current map to find out which route to follow. On this route we are invited to go through the library, the pool, the hospital, the post office, the museum or the police station.

The first step is to create the most common symbols of the map (and indicated in the letter) with natural elements such as stones, branches, leaves or anything we find and that may be useful. These symbols will be placed as indicated on the treasure map on the place we are doing the activity.

Go!

It is time to re-read the letter with the indications of the itinerary. The route goes through different streets that existed in that area before. Therefore, you should imagine the way by connecting the points marked by the symbols on the map with those that we

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 90 min.

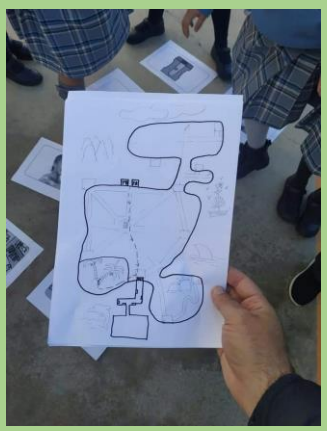
AIM:
To know map symbols, develop orientation, improve reading fluency and promote reading comprehension.

CLASS ORGANIZATION:
Small groups

SUPPLIES:
Any natural element, map created by the teacher

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

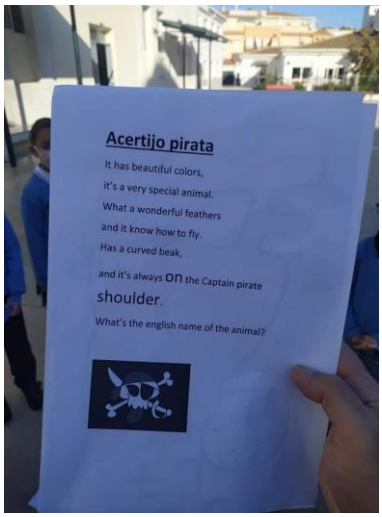


have created with natural elements and that we have previously placed on their place. Students should "read the map" and follow the itinerary to reach the final point where a pirate, member of the crew, is located. He/ She will invite them to solve a puzzle related to the unit we are studying.

The final treasure can be anything we can think of, for example, a small chest full of chocolate coins or candies.

Look back!

As a final review of the unit, you can make identification games of the symbols that we have learned (mimicry, visual tests, hanged ...)



Follow up!

- Different versions can be made using vocabulary instead of map icons.

Sky gazing

Get ready

"How much does the sky above our head influence our life? Can we see stars during daylight? And what exactly are stars? Can you recognize any constellations? Do you know any stories about a constellation? How do we differentiate the light of a star from the light of a planet? What is a shooting star?" These are just a few of the numberless questions your students might ask during the introductory phase of a lesson about astronomy. This activity aims at making children aware of the beauty and mysteries of our sky. Children share their astronomical knowledge but can also find creative ways to memorize star positions inventing their own constellation, and constellation story.

Go!

In a circle, the class observes the sky in the position that suits them best outside, this can be done at any time of the day, not necessarily at night. Discuss with your class and find out what your pupils know about stars and planets. Invite them to close their eyes and imagine their own sky*:* "What colour is it? Is it daylight sky or a night sky, is it cloudy, foggy Or clear? How do you exactly imagine the sky? Is it flat or deep and

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 90 min.

AIM:
Knowledge of basic astronomical concepts: the sky, its objects, natural lights, differences between planets and stars.

CLASS ORGANIZATION:
Circle time and individual work

SUPPLIES:
White, blue and black A4 cardboard, natural material such as lemon or grapefruit peel, white and yellow flowers, white pebbles.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

endless? How often do you observe the sky at night? Is it flat or is it deep and endless? Do stars move or do they stand sit in the same place?"

Leave at least 15 minutes for this preparatory phase. Pass out a grid, for each group of three to four children, on the right they will write what sky objects can be seen during the day, on the left what can be seen during the night. Back in class share the content of each grid, then distribute white, blue and black cardboards and invite each child to create his/her own starry sky.

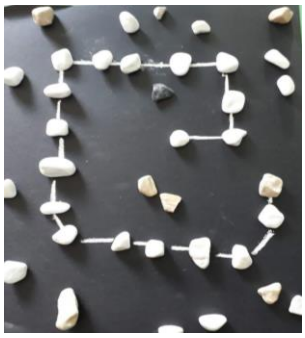
Children can choose to represent stars using whatever material they wish. Initially, we let the children practice creating their own sky with pebbles.

Later, we encouraged them to recreate their own sky using either lemon/grapefruit peel, or acacia flowers. We picked acacia flowers from our school garden, owing to a cold storm they had all dropped on the ground.

You can invite one group of children to just poke holes in the black cardboard, once you have pierced enough wholes ask children to hold the cardboard up high and see what is the effect of the flashlight rays passing through the cardboard holes. Ask children to choose what is the representation of the starry sky they prefer and why.

Look back!

In a circle everyone shows their own sky and shares what they have learned during the activity, and what another astronomical topic they would like to explore.



Follow up!

- See ESA Paxi videos on different astronomy topics:
  https://www.youtube.com/watch?v=mibxJwpennU
  https://www.youtube.com/watch?v=4AvjKwi9RqA
  https://www.youtube.com/watch?v=8oe6UzVs7_Y
- Look for the Cassiopeia activity!

Follow the stars

Get ready

Today we rely on GPS and google maps. We can determine our position accurately and easily find the shortest and safest route to the planned destination.

In the past, there was no GPS just the Sun and the stars. Great navigators like the ancient Greeks, and the Vikings used the Sun and the stars to find their way on sea. How did they do it?

In the Northern Hemisphere, a star seems to have a fixed position in the sky. All the other stars appear to rotate around this one, tracing a complete circle in the sky every day. We call it the North Star or Polaris (*Steaua Polară*).

In fact, the stars are not rotating at all; the Earth does. The way it looks to us is the same as if the stars were spinning around Earth. Where can we find this star?

Go!

The North Star was a great discovery because it's located directly over the North Pole (actually, almost directly). It is easy to find it in the sky following just a few directions. Once you know how to do it, you will always be able to find the North without any instrument. There is only one problem- a cloudy night sky.

CURRICULAR LINKS:

AGE GROUP: 8+

TIME: 50 min.

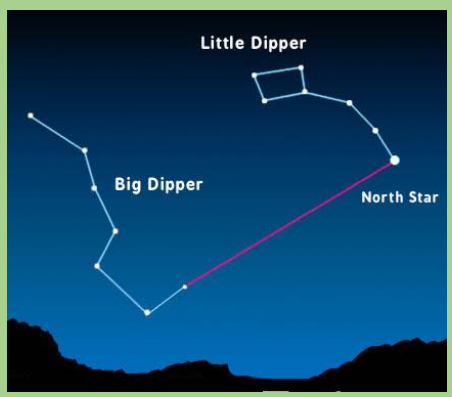
AIM:
Locate at least 2 constellations (Big Dipper and Little Dipper) and the North Star/Polaris.
Compare the direction indicated by Polaris with the direction indicated by the compass
Use an app on different devices

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Compass, a simple map of the two constellations, pupil's eyes and a clear night sky. Optional: telescope, binoculars

OUTDOOR/INDOOR:

TEACHER/CHILD LED:



The North Star is the brightest star of a constellation - The Little Dipper (Ursa Minnor or in Romanian, Carul Mic). Together with its sister, the constellation The Big Dipper (Ursa Major or in Romanian, Carul Mare) there are the most well-known constellations of the night sky.

Using a compass face the North. Look closely at the sky. Using the picture, first, locate the Big Dipper in the sky. Find the two stars on the front of the dipper. Follow the imaginary line traced between those two stars. The first bright star you come to is the North Star. Double check: the North Star is the bright star at the end of the handle of the Little Dipper.

Once you are familiar with the location of constellations in the sky, you can connect Big Dipper to another constellation quite easy to recognize, Cassiopeia. The stars from Cassiopeia form a wide M. See the image bellow.

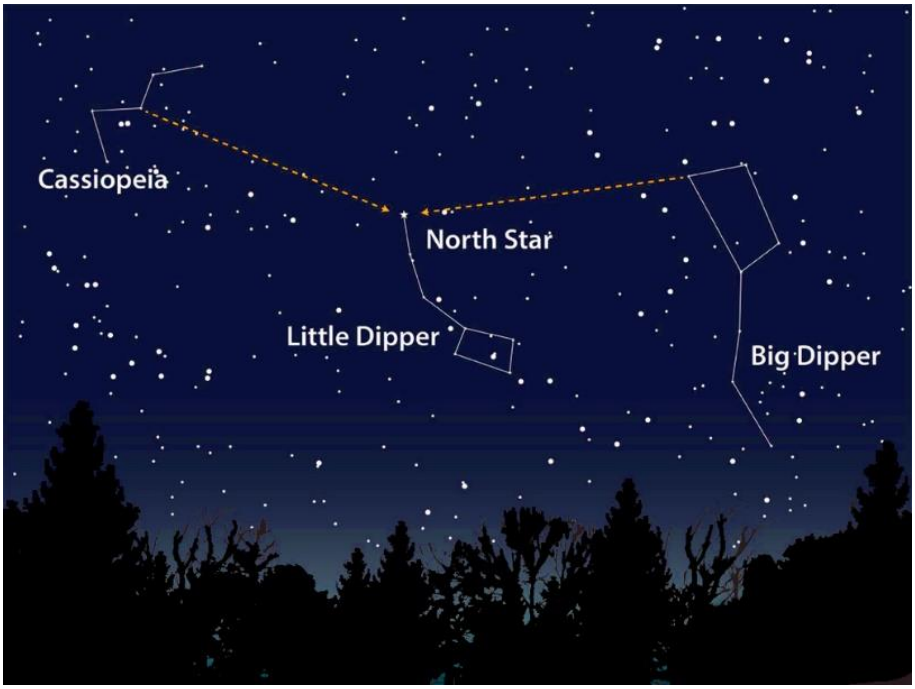
Look back!

Using *Stellarium astronomy software*, in the classroom, students can observe once again the position of the constellations, and of the North Star. They can also locate some planets using Polaris as reference point. The use of this software has several advantages. The dance of celestial bodies in the night sky can be observed regardless of the time and weather.

What other constellations can pupils observe? How about planets? What planets are visible now? Even if the connection between constellations and our birth month is not scientifically proved, children like to observe their birth sign on the sky. Help them to use *stellarium* to locate their birth sign/ constellation on the sky.

Polaris Star can be seen as a spiritual symbol too. It points the right direction of our life. The North Star is visible only in the Northern Hemisphere! If you are traveling in Australia or New Zeeland, you have to find another guiding star.

For thousands of years people all over the world have used the stars to tell stories. Stories about how the stars got there, or about things that happened on Earth or in the sky. Life lessons, full of wisdom.



Follow up!

- Connect this activity with *Show me the right direction* (the compass).
- Humans, restless travelers and explorers, discovered the sunstone, the magnetic needle and invented special devices like sundial, compass, astrolabe or the quadrant. What are these? How do they work? Make an outdoor sundial!
- Look for the most interesting legends or stories related to stars.

History

History primary school activities:

- Tree-eye witness
- Walking with dinosaurs
- Cabin building
- The game of food colectors
- Prehistoric hunters
- Cairn
- Papyrus paper
- Historic battles
- The myth of Cassiopeia
- The Romans, our ancestors
- The magic of folk costumes

Tree-eyewitness

Get ready

This is a lesson that helps us introduce elements of history in a very touchy way: children are asked to tell or write the life story of a particular tree. This work can be done collectively, because children should find not only a suitable tree, whose age would be no less than 100 - 150 years (older is better), but they should also select the appropriate materials of local history.

Before the lesson, you should find that particular tree that by the way it looks already tells a story.

Go!

Take the children to this particular tree. First look at it and say what type of tree it is. Say where it is and what can it *see* from where it stands. (Maybe it is a tree in a park and it witnessed the beginning of a revolution or it is on the top of a heel and it could watch the people defending a castle in war). Then look closely at the tree. Look at the bark and the signs it bears: maybe a lighting struck the tree in a terrible storm, look at the shape of the branches and imagine who could pick its flowers or who could eat its fruit. Children should be explained that their story should

CURRICULAR LINKS:

AGE GROUP: 6-7+

TIME: 60 min.

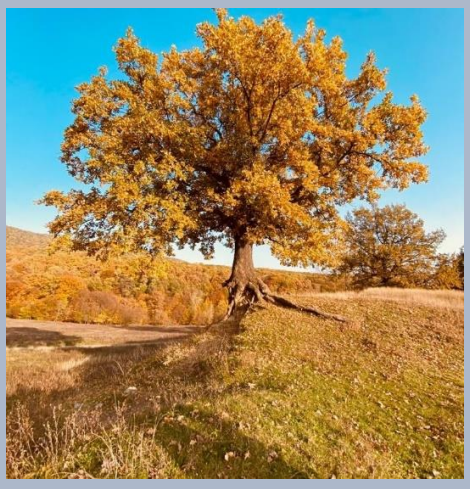
AIM:
To develop a sense of history, to describe events from the past to tell a story in a team

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Large, old tree

OUTDOOR/INDOOR:

TEACHER/CHILD LED:



not be a simple listing of major (and very large) historical events. The whole story should be told by a tree for which a great drought or fire is much more significant event than, for example, the revolution or a war. To describe the stories happened to the tree children can use the following tricks: arriving birds constantly talk about events in the neighbouring forest; the wind, touching the branches, tells about what is happening, for example, in a neighbouring country; a drop of rain tells the tree about events on another continent, etc.

Look back!

In the end, have a final reflection on what new children learnt. Who knows? Maybe the tree will remember a group of garrulous children coming and telling beautiful stories of what this majestic tree could have seen and felt.

Follow up!

- Plant a tree that will *record* history from now on and, when something out of the ordinary happens you can talk about this around this new tree.
- Ask a history or a geography teacher to tell the children the story of your local region. Maybe millions and millions of years ago it was the bottom of a sea, or 70 million years ago dinosaurs used to roam here. What did this world look like for the first people? What could the hunters-gatherers eat? Where could they hide when the weather got too cold?

Walking with dinosaurs

Get ready!

Dinosaurs stimulate children's curiosity, interest and wonder. These prehistoric animals can prompt all sorts of questions, such as: "Why and how did they get extinguish? Why some dinosaurs were huge, and others where tiny? What did dinosaurs eat? Did all dinosaurs have feathers? How did dinosaurs move around, and how much distance did they cover in one day?" These are just few of the numerous questions, which could start the lab on dinosaurs.

Children will also enjoy watching a documentary or a movie about dinosaurs ("Walking with dinosaurs", "Ice Age"). Then children can create a diorama using natural material. In the school garden or during a forest walk, children collect all kind of natural material you could use in the diorama such as: leaves, sticks, dirt, grass, flowers, acorns, feathers etc. The teacher can decide whether to have the students work in pairs or in small groups of three or four students.

Go!

1st Step: Draw and paint the natural background in the inner part of the box and

CURRICULAR LINKS:

AGE GROUP: 8+

TIME:
1st step 60 min.; 2nd step 60 min.; 3rd step 60 min.

AIM:
Lexicon expansion, fine motor skills, teamwork skills, creative use of natural material, concentration.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Cardboard boxes, magic markers, vinyl glue, natural material (sticks, pebbles, sand, leaves, etc.), DAS modelling clay

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

let it dry. Decorate the background with the natural elements that were collected.

2nd Step: Children model the different parts of the dinosaur body. If they work in pairs or in groups, they decide which part of the dinosaur's body each child models. When all the parts of the body are ready, the children proceed to assemble each part to create the dinosaur. Use wooden sticks to strengthen the dinosaur's body. Let the dinosaur's body dry.

3rd Step: Paint the dinosaur; when it is dry, stick the dinosaur inside the box you previously prepared.

Look back!

When all dioramas are ready, you can organize an exhibition for everyone to enjoy.

Follow up!

- Use the dioramas to role-play presentations with the title *If I Were.* During these presentations, the children could imagine that they are a certain type of dinosaur and talk in 1st person singular about its life on Earth. These presentations could be sent individually to the families to enjoy.
- Organize a movie afternoon in the classroom! Children could enjoy one of the dinosaur blockbusters next to a bag of popcorn and a cup of hot chocolate.

Cabin building

Get ready

Studying the subject of history, we also study prehistory (2.5 million years ago - 10,000 B.C.) and we watch images in class of how and where prehistoric people lived, what they ate and their customs. The teacher explains what their lifestyle was like and the teacher introduces the next question: "Would you be able to live as they did?"

Go!

The teacher will make different groups with the students. Each group will have to look for all the materials that they can find in nature such as sticks, branches, leaves, stones etc.

When they already have all the materials needed, they will build their own cabin. Once they have finished building the cabin, they will go inside and imagine how our ancestors lived in prehistory. As in those times the first humans lived as hunters and gatherers. In order to hunt, they used tools made of stones and bones. "Could you find a stone/ bone fit to be used as a tool? Could you make an axe with a stone, a stick and some twine?

CURRICULAR LINKS:

AGE GROUP: 8+

TIME: 30 min.

AIM:
To know about our ancestors and to live a different experience.

CLASS ORGANIZATION:
Groups of five

SUPPLIES:
Sticks, branches, leaves and stones.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

What game would be available for you to hunt? Could you build a trap just with natural materials that you can find around? What happened to the mammoths or bison that they used to hunt? Where would you make your fire? What food would be available to forage? What edible fruit, nut, mushrooms, berries, and plants do you think they ate? Which plants from here are poisonous or dangerous to humans? How do you think our relationship changed with the animals and plants as compared to those times?"

Look back!

To finish the activity, they will say how the experience has been, and if we could live as our ancestors did.

Follow up!

- To learn more about the way of life our ancestors, in class we can watch the following video:
  https://www.youtube.com/watch?v=rLFGra2TiTE
- See also the following lessons Prehistoric Hunters and The Game of Food Collectors

The game of food collectors

Get ready!

Discuss with your students about food collection as a means for human survival during the Paleolithic era. Emphasize the absence of communication and their constant move in order to collect food as well as the use of stones as primitive tools. With the use of stones, aboriginal people dug the land so as to find food. They also used sharper stones in order to defend against wild animals while they steadily learnt how to give them shape and create sharper tools.

Hide some sweet potatoes, almonds, walnuts and chestnuts with their shells in various places on the ground where the kids are meant to play the game. The aim of the game is for the students to serve as food collectors and research for their food. Therefore, make sure you define the limits of the space you will be using for the game and be clear about it so that your students start searching in the right places. The students can complete the activity in groups or individually depending on their preference. There is no need for you to decide for them or appoint them in teams beforehand as during the game, they will need to cooperate either way. Therefore, they can either research for their food individually or

CURRICULAR LINKS:

AGE GROUP: 8+

TIME: 45 min.

AIM:
Description of the way humans lived during the Paleolithic period and how food was collected during this time.

CLASS ORGANIZATION:
Individually or in teams

SUPPLIES:
Sweet potatoes, almonds, walnuts, chestnuts, stones/ small rocks, musical instruments of your choice.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

with the help of their classmates. Make sure to emphasize at the start that they should not be talking to each other. Hence, they should find another way to communicate with their classmates. You should use a significant sound coming out from a musical instrument you have chosen which will signify the start and end of the game along with the pauses in between (if any). For instance, if a student overpasses the limits you have set for the game you may pause. Finally, you should have a colleague of yours as a food collector who will be playing and assisting the students.

Go!

Gather the students of the class and show them the limits you have placed concerning the space and explain the meaning and use of the musical sound. Then, ask them to close their eyes. In continuation, start with a narration of the following story: "Close your eyes and travel back in time. Let's go back 2.500.000 years in an era where it is cold and people do not use words to communicate yet. We are inside a cave, listening to various sounds outside which make us worry and hungry… slowly at your own time open your eyes". The students open their eyes and your assistant/ teacher with the role of the food collector approaches the children holding one sweet potato. Without talking, they motivate the children to look out for food. The children should research within the restricted space in order to discover the hidden food (sweet potatoes and nuts). Once they find them, they can eat them while breaking their shells with a stone. The teacher-food collector should urge the children to find sharp stones, always using signs

and not words. After all of the hidden food gets collected, the musical sound needs to be heard in order for the children to return into their circle.

Look back!

Gather your group in a circle: Discuss about the game. Did they face any difficulties? If they lived during the Paleolithic period and they were food collectors, what would challenge them mostly? What advancement would assist them in that challenge? Motivate the children to express and discuss their feelings and thoughts.

Follow up!

- Organize a prehistoric fair where students can organize their own bartering and can swap little toys or food.
- Represent on a time-line the main eras (Prehistory, Classical, Middle Ages, Early Modern, and Modern) so that the students understand better the length of each. Use natural materials: a string for the timeline, a stone, a piece of bronze and a piece of iron can represent the Stone, Bronze and Iron age in the Prehistoric area, a stone fort can represent the Middle Ages etc.

Prehistoric hunters

Get ready

Discuss with the children about the changes brought about by the fall in global temperatures in prehistoric times: how a great many animals died from the cold but humans managed to survive by moving to the hottest parts of the earth, living in caves and discovering ways to light a fire, around which they began to say their first words.

The purpose of the game is for children to be primitive hunters, to build stone tools, to build a shelter and to hunt. Before starting the game, agree on what words will be allowed to be heard between the team members so as to communicate. Choose a total of 10 words that children will suggest and will be used exclusively during the game (e.g. "stone, build, fire, tools, shelter, help, me, search, woods, hunting").

Children will work individually and / or in groups, depending on what they choose each time. You don't have to define it from the beginning. In the course of the game the need for cooperation will spontaneously arise. That is, they can build their own tools themselves, but at some point, they will ask for help in building the shelter.

CURRICULAR LINKS:

AGE GROUP: 8+

TIME: 50 min.

AIM:
Learn about life in the Paleolithic times.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Musical instrument, a burlap sack, ropes, materials from nature like (twigs, stones, wood bark, etc.), scissors.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Make sure you clearly show what the boundaries of game space are, so that children do not go too far away. Use a musical instrument to set an audible signal that marks the start, the interruption - if needed, - if, for example, someone goes out of the game - and the end of the game.

In addition to the game coordinator, an extra teacher in the role of primitive hunter is needed to play alongside the children. The rest of the adults help the kids to make the tools.

Go!

The coordinator teacher brings the children together, shows the boundaries of the game and explains the use of the audio signal. He/ She asks questions about the lives of human hunters and explain to the children that they will become the same primitive people who will build tools, hunt and create a shelter. The game begins after the beep sound and the other teacher, the primitive hunter, says the word "tools". The kids start looking for stones and wood to make axes. Extra teachers help assemble them by providing bits of twine. After providing enough time for the children to make their tools, the hunter teacher shouts the word "shelter" so that the children can find the materials they need to set up their shelter. Throughout the building time, the teacher-hunter encourages the class to use the chosen words by telling them. In the end, after the shelter has been built, the hunter-master says "hunting" to mark the beginning of the last activity. The prey, a bison or a crocodile, actually a burlap sack, is tied to a rope. The teacher-hunter runs dragging the “prey”, while the children chase it and eventually "kill" it with their tools. The teacher- hunter then shouts the word 'fire', the children dig a pit, throw pine needles, pine cones and twigs, make fire using stones and 'roast' the meat. When the meat is roasted, the instrument sounds and everyone returns to the present.

Look back!

The whole team gathers to discuss the game. How did it feel to play this game? Did the words they used help them? How would today's hunting be represented as a cave painting?

Compare the worries the people had in those times to the ones we face today! What were the benefits of living in Prehistoric times? Let the children express their feelings and thoughts.

Follow up!

- This activity can be seen as a continuation of the *Food Collectors Activity*. Here the human species has evolved more, uses more complex tools and has began to use language.

Cairn

Get ready!

"Did you ever get lost? Are you afraid of getting lost in the forest? What is the best way to avoid getting lost? How are trails marked? Do you know what is a cairn? Have you ever sees one?"

A cairn is a pile of four or five rocks that look like a little man. Cairns have been used since prehistoric times to mark trails. Cairns can also be bigger constructions that can be found as landmarks for different purposes, such as hunting or burial places.

This activity will make us travel back to a time when there were no cell phones, maps or even compasses, we will learn about the fascinating history of cairn, and will have a chance to mark a trail with them.

Go!

Choose a large enough area in the forest, beach or field. Make sure there are plenty of stones that can be used nearby. Divide children in groups of four or five, invite each group to pick a geographer and a top engineer.

Geographers will need to decide on the itinerary of the trail which will be marked by the cairns. Explain that the trail does not necessarily need to be too long and complicated. Geographers will also agree on where exactly cairns need to be placed. Each group will then proceed to create the cairn needed

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 90 min.

AIM:
Arts and crafts, orientation skills, logical thinking, teamwork.

CLASS ORGANIZATION:
Groups

SUPPLIES:
Plenty of stones of different dimensions

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

to mark the trail. Since each cairn needs to be strong enough to resist to natural events such as wind, heavy rain, and snow, remind children that they need to figure out which is the best way to build strong and sturdy cairn on their own. Depending upon the number of teams, allow enough time for the trail to be completed. Once the trail is completed, each team will take turns in following the trail.

Look back!

Invite all teams to sit in a circle and collect comments about the activity, ask if they think that cairn can be an efficient way to mark trails, and if they could help when one happens to get lost in the woods. What is the best way to make a cairn stable and sturdy? In class as a recap activity, you can ask each child to draw a cairn and create a story about it.

Follow up!

- For more information about the cairn: https://en.wikipedia.org/wiki/Cairn
- The cairn festival in Italy: https://lagazuoi.it/IT/Eventi-Cairn-Festival-page14-Lagazuoi-Cairn-Festival-2018

Papyrus paper

Get ready

Since ancient times, human beings have felt the need to 'fix' their thoughts, their ideas, and their words. To do this, our ancestors started to use different materials according to what they could find in the natural habitat which surrounded them: pieces of bones, woods, clay etc…. Some of these ancient materials used as paper are incredibly similar to paper. We can see this, not so much if we examine the physical and chemical constitution of these materials, but if we look at the way these ancient surfaces were used to convey written messages. Papyrus is certainly the best example of ancient writing surfaces. This activity includes outdoor and indoor moments, it includes individual and pair work.

Go!

1st STEP: bring a papyrus plant in class and invite pupils to carefully observe all its features: encourage children to learn about the origin of the plan, habitat, characteristics, properties and how it is used. This is a class collective activity that can be carried out in the open air, in the school garden or courtyard. It is important to bring a real papyrus plant, so that children can see, touch and directly observe the plant. After the direct observation of the plant, the teacher can present the different steps the ancient Egyptians went through to create papyrus writing surfaces. There are different internet sites that present the procedure.

(https://www.wikihow.com/Make-Papyrus)

CURRICULAR LINKS:

AGE GROUP: 9+

TIME:
1st Step: 60 min.; 2nd Step: 60 min.; 3rd Step: 30/60 min.

AIM:
Knowledge about ancient writing techniques and River civilizations**;** plant observation; knowledge about the papyrus plant characteristics; fine motor skills, creative way of natural material use; team / pair work skills;

CLASS ORGANIZATION:
Individual and pair work

SUPPLIES:
White Bristol cardboard, cotton gauzes, rounded scissors, 2 magic markers, solution of vinyl glue and water, solution of water and coffee, crayons.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

2nd STEP: This is a procedure to reproduce a papyrus sheet, using a similar natural material which can be easily gathered. Papyrus fibres can be replaced with cotton gauzes. The use of cotton gauzes allows us to follow a similar technique to get a written surface similar to a papyrus sheet.
Sheet preparation: cut the cotton gauzes. Using a brush, spread the vinyl glue and water solution on the Bristol cardboard. Stick the first layer of cotton gauze on it in a vertical way; dab a second layer of vinyl and water solution on it and apply a second layer of gauze in horizontal way. Once again, dab the second gauze layer with vinyl and water solution, and continue applying a third vertical gauze, the water and vinyl solution and the final fourth horizonal cotton gauze with the final layer of glue. When everything is dry, to make your papyrus surface look ancient, apply a layer of coffee and water solution using a brush. These operations are better done in pairs. Let the artefacts dry out.

3rd STEP: once the 'papyrus' sheets are dry, invite children to draw Egyptians Ancient gods and other symbols using crayons. Besides drawing gods, pyramids, cats and the Sphinx, the children can also have fun trying to reproduce the most common hieroglyphs. This is an individual activity.

Look back!

Once all the class artifacts are ready you can organize an Egyptian exhibition including all kind of information about the history of Ancient Egypt, maps and research papers.

Follow up!

- You can expand this activity by presenting *Thoth* the Egyptian God of Writing; children will love to draw and colour the figure of this peculiar ancient God.
  - https://www.ancient.eu/Thoth/
  - Thoth – Ancient History Encyclopedia
  - https://www.ancient.eu/Thoth/

Historic battles

Get ready

Discuss with your students about interesting historical battles and the phases of each battle which shaped history. Make sure to mention the importance of strategies followed in these battles and what impact they had on history or even the geographical impact concerning today's borders. The aim of the activity is for the students to understand how wars and battles between armies influence the flow of historical facts and what role the strategies chosen back then affected that flow.

The students should be divided into groups of 3-5 people. Each group is given a historical battle to recreate using natural elements in the area you have chosen.

Show with detail the limits of the area in which the students will complete the activity. Determine a specific sound with a musical instrument of your choice which will signal the start, pauses (if any- for instance if someone moves out of the limits you have placed) and end of the game.

Apart from the teacher who coordinates the activity/ game it is advised that other students are engaged in the activity to assist the students with any clarifications needed while they recreate the battles.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 30 min.

AIM:
Analyzing the role of historic battles in history.

CLASS ORGANIZATION:
Groups

SUPPLIES:
Summaries of historical battles, up to date pictures of the battlefields, mind maps of different parts of the battles, natural elements, pen and paper, photographic camera

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Go!

The coordinator of the game gathers the students so as to show them the restrictions within the area and explain the meaning of the musical instrument sound as a signal. Remind the students of the battles they have been studying and discussed.

In continuation divide the group in teams and hand them out the following material:

1. A summary of the historic battle.
2. Pictures of the battlefield today.
3. Mind maps and diagrams of 2 or 3 phases of the battle.

Give your students some time to process the material and information. Each team chooses a space within the restricted area to recreate the battlefield and army troops by using natural elements such as small rocks, sticks, oaks, pinecones etc. Finally, they follow the instructions of the mind maps and diagram to create each phase of the battle and take a photo of it.

The students can use small pieces of paper to take notes and write labels of important places in the battlefield or label the army troops for battle. For instance, label the archers, label the military camps of each opponent or a river on the map. The activity/ game ends with each team presenting to the whole group their recreation and interpretation of the battle (if the battles were different for each group).

Look back!

Gather your group in a circle: discuss about the activity. Was there something challenging for them? Which phase of each battle do they believe is most important? How would they describe the battles in their own words? Allow the children to discuss and express their emotions and thoughts.

The myth of Cassiopeia

Get ready

Ideally, it is better to present this activity after having worked with your class in the 'Star Gazing' activity which can also be found in our *Guides of Good Practices*, or anyway after having done some introductory projects about the sky, and sky observations.

Start sitting in a circle preferably outside; ask your class if anyone is familiar with the story of the Queen Cassiopeia. Is anyone familiar with this name? If yes, what is this name related to? Depending upon the answers that you will collect formulate other questions and then, invite your children to close their eyes and listen to the story of the myth of Cassiopeia.

Choose an easy and clear version of the myth; at the beginning of the reading you might present the names of all the protagonists of the story, describing them briefly, so that your pupils will be able to follow the events more easily. When the story is over, to help your children visualize the story, you might decide to show them how the Italian artist Caprarola represented the characters of this myth on the ceiling of the Map and Globe room of the Farnese Palace in Viterbo. (see picture below)

Go!

See if your students can recognize how all the characters of the story have been represented and

CURRICULAR LINKS:

AGE GROUP: 9-10

TIME: 90 min.

AIM:
Develop listening and concentration skills, motor skills, abilities to compare characters of different stories; drawing connections between the mythological figures and its astronomical representation; motor and coordination skills; team work abilities

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
tennis balls, white and dark drawing paper, pastels or crayons; peppercorn, pinecones, pebbles, vinyl glue, Stellarium online site;

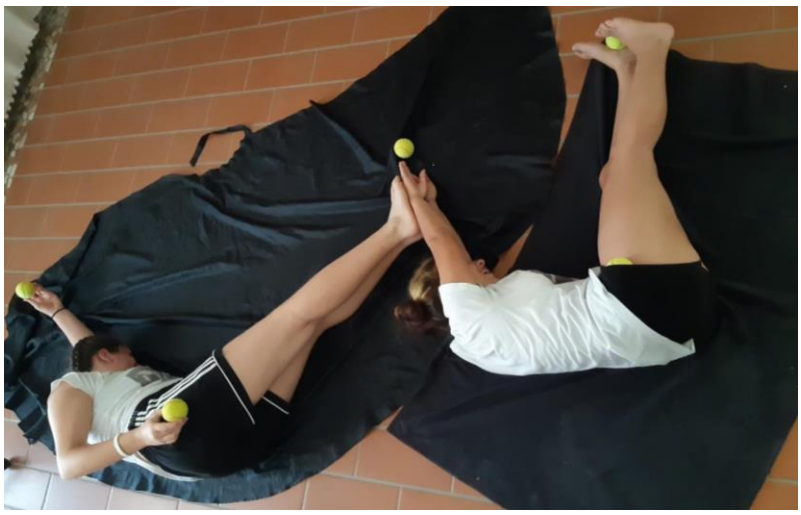
OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Sara Gilligan: Seeing Stars. Phaedon Press. 2018

then, ask your children if they liked it, and if they are familiar with this constellation. What do they think of the punishment that was inflicted to the Ethiopian Queen? Do you think she was rightly punished? Does Cassiopeia reminds you of another character in a very famous fairy tale? If yes, what are their similarities and what are their differences? Can you see any relationship between Cassiopeia's vanity, her desire to be above the Nymphs, and the popular contemporary desire to be famous and collect a lot of digital 'likes'? etc.

Activity # 1a: Form groups of five to six students; distribute the patterns of the constellation which are protagonists of the myth. Invite the children to use their bodies to represent these constellations. They can freely pick which constellation they would like to represent, but encourage them to try out every single constellation, and then choose which is the easiest to represent. Tell the children to focus on the different ways they can use their bodies to create the star formations.



Activity # 1b: invite each group of children to use tennis balls to put together all the stars in each constellation regarding the myth. If you would like your children to work on their fine motor skills, substitute the tennis balls with round white pepper seeds or small white pebbles to be glued on black sheets of paper or cardboard.

Activity # 2 Using Stellarium show the constellations and the visual representation of each character: Cassiopeia, King Cepheius, Poseidon, Andromeda and Perseus. Then, show some paintings related to the Cassiopeia myth and invite children to draw the protagonists of the story.

Activity # 3 Distribute a simplified version of the story with dialogue in English. Rewrite the dialogue according to the level of Language knowledge, and understanding of your pupils. You might consider writing down the play with the dialogue together with your pupils. Have fun reading aloud the dialogue together with the whole class. Show your pupils how to differentiate the different lines of the dialogue, working on voice intonation and expression. Then, invite each group of students to act out the myth. Once each group is ready, they will represent the play to the rest of their classmates, or maybe to a larger audience of schoolchildren.

Look back!

Grant your students an opportunity to evaluate and reflect on the different activities you have decided to involve them in. Which one did they enjoy the most? What kind of connections and conclusion can they draw from the myth of Cassiopeia, and its Astronomical picture? If they are interested on the topic of constellations you can suggest them further ideas to explore other constellations and their myths. Invite them to use the online version of *Stellarium*, and make sure you inform them that if they are interested in downloading the *Stellarium* program in their computer, this program is free of any charges.

Follow up!

- https://stellarium-web.org/ This is the web version of Stellarium, in case you have not downloaded Stellarium on your school computer;
- https://en.wikipedia.org/wiki/Cassiopeia_(constellation);
- https://www.ilturista.info/ugc/immagini/caprarola/lazio/54274/
- To see how Cassiopea turns ahttps://www.ilturista.info/ugc/immagini/caprarola/lazio/54274/round the Polar Circle check this site: https://www.astronomia.com/2011/05/20/la-costellazione-di-cassiopea/#immagini1
- https://earthsky.org/tonight/cassiopeia-high-in-the-north-on-winter-evenings
- Sara Gillingham: Seeing Stars: A complete Guide to the 88 Constellations. Phaidon Press 2018.

The Romans, our ancestors

Get ready

Ask the students to revise information on the Romans and encourage them to expend school knowledge through reading of both printed and online resources.

Inform the students that the next history class is going to take place outdoors and the aim is to develop knowledge about Romans and the making of the plan of Arutela Roman fort.

Each child is encouraged to collect relevant sensorial stimuli that would help them create a mind-map of the trip back in the classroom.

Go!

Each child got a clipboard with A4 paper and pencils. We established the cardinal points with the help of the Sun and the Olt river that flows next to the fort. The cardinal points are marked on the paper on which we will draw the map of the area and the plan of the fort. We observed the geography of the place, the materials used to build the Arutela fort, the size and the structure of the building. We discussed the purpose of the structure, the way Romans lived and the strategic importance of this place.

CURRICULAR LINKS:

AGE GROUP: 9+

TIME: 60 min.

AIM:
To use tools and procedures to investigate the environment; to make a map of the area and a plan of the Arutela Roman fort (Călimănești, Vâlcea, România).

CLASS ORGANIZATION:
Groups or whole class.

SUPPLIES:
Clipboards, A4 paper,pencils, paints and paintbrushses.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

We also talked about what the students could hear, smell or feel. They collected small objects from the area: leaves, seeds, stones and information of special or strange things.

Look back!

The students had the opportunity to share knowledge that they learnt at school or discovered on their own and the activity became dynamic. The active sharing of information and the debates lead to a conscious and careful observation of all the elements that make the Arutela fort and the map of the area.

Back in the classroom, in a circle, the students show and tell the collected item and present their plan and map made on site.

Follow up!

- Make a replica of the Roman roads in chocolate, biscuits, vanilla cream and chocolate.
- Ask the students to make a digital presentation of the Roman times and present it to the class.
- Connect Arutela fort with other Roman artifacts located on the territory of the county and even abroad.

The magic of folk costumes

Get ready

The familiar plant, animal and geometric elements of nature and the colors of different natural objects (sun, earth, sky, seasons) become a means of learning and creating ornaments by the Bulgarian folk embroidery and costume.

Go!

The students are divided into three groups. After viewing and researching the presentation "Bulgarian folk costumes", its colors and the elements of nature, the students of each group receive a task. Students have to work out, draw or applicate typical costumes:

- The first group presents folk costumes in which they include animal ornaments.
- The second group offers folk costumes with ornaments symbolizing plants (flowers, cereals, vines, etc.).
- Third group - folk costumes with the motif of sun or family (tribal) signs.

Look back!

Students gather in a circle and discuss what was interesting for them, what was difficult to do, how did they feel in a team, what they have learned.

CURRICULAR LINKS:

AGE GROUP: 8+

TIME: 90 min

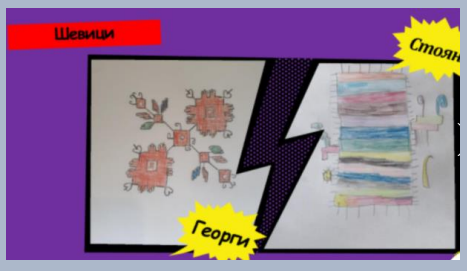
AIM:
Making a flipbook from folk costumes and embroideries; to create interest in students to the Bulgarian traditions, customs and culture and their connection with nature.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Presentation, white sheets and colouring pencils.

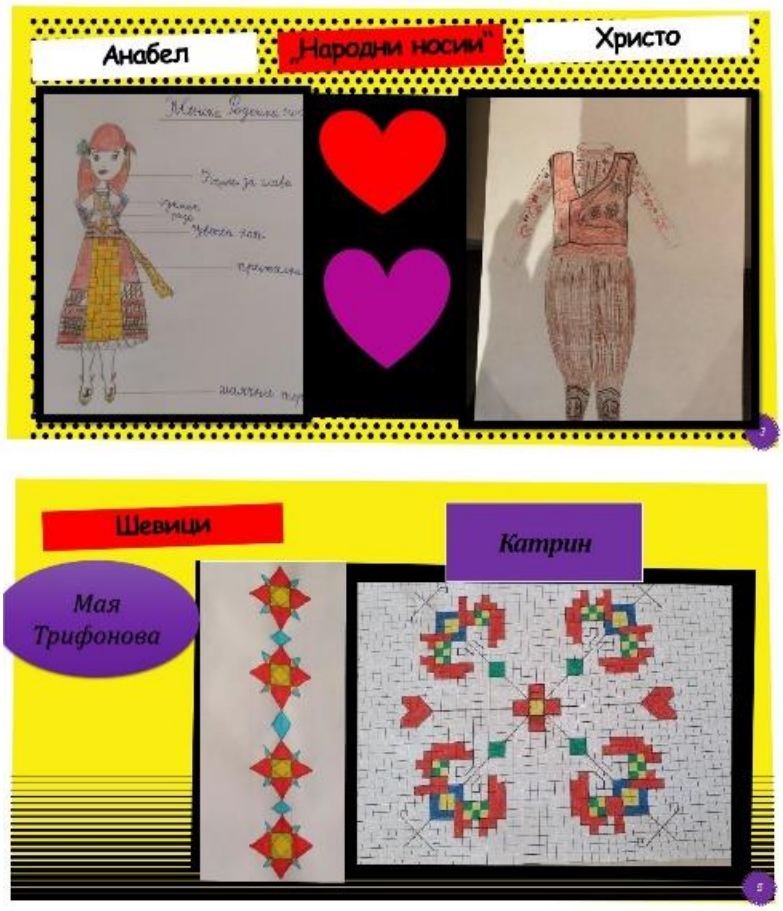
OUTDOOR/INDOOR:

TEACHER/CHILD LED:



- Students learn about the power of colors and symbolism in Bulgarian folk costumes decorated with various embroideries.
- Students get acquainted with the application of animal, plant, family ornaments in the Bulgarian folk costumes.
- As a final product a flipbook from the pictures is made.

Flip book "Folk costumes" https://online.fliphtml5.com/bmfzs/fdok/



Follow up!

- Students can make a power point presentation with their works.
- Students can exhibit their works and learn folk songs about the natural elements used in the folk costumes.
- Students can find out folk costumes and play traditional folk dances wearing them.
- Students can count the geometrical figures used in the embroideries and try to create similar figures and propose them for the folk costumes.
- Flip book with students' drawings: https://online.fliphtml5.com/bmfzs/fdok.

Physical education

Physical education preschool activities:

- Ability race
- Obstable course
- Pinecone sports
- Planets and spaceships
- Run with me
- Run like an animal
- Nature path
- Leaf harvesting relay
- Fun fitness
- Move like a bug
- Two animal games
- Find the object
- Bowling

Physical education primary school activities:

- Balance circuit
- Anthill
- Feeling nature with your feet (summer)
- Feeling nature with your feet (winter)
- Heads or tails
- Tangled
- Catch the gecko's tail
- Corn basketball
- From invertebrates to vertebrates

Ability race

Get ready

In order to run this race you will have to prepare a course with: a spider web made with ropes, wood slices and smaller and thinner logs, which can stand up for bowling. You will also need a ball for bowling and one for golf, a basket, a spoon and smaller rocks that you can fit in the spoon. Find several sticks that would work as golf clubs and make a hole big enough for the golf ball to fit in. You will also need a bunch of thin and long sticks to build tracks.

After studying the different basic skills in physical education, we divide the whole class into small groups of 4-5 children.

Go!

Once the groups are divided we start the activity. One by one they have to do all the sections:

- Pass through a tunnel with the spider web made with ropes.
- Jump from one wood slice to another.
- Kick a ball to throw down the sticks (bowling).
- Score pinecones in a basket.
- Put a stone on a spoon and hold the

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 45 min

AIM:
Develop physical skills, respect to the others, team work, listening and speaking skills.

CLASS ORGANIZATION:
Groups.

SUPPLIES:
Basket, natural elements, rope, spoon

OUTDOOR/INDOOR

TEACHER/CHILD LED:

spoon with the mouth from one side to another.

- Hit a ball with a stick to put it in a hole (golf).
- "Monkey" activity.
- Pass through a wooden line without touching the ground with the feet.
- Run in a wooden zig-zag.

The goal of the activity is that the 4-5 members of the team have to do the circuit as fast as they can due to the fact that they have to compete with the rest of the team.

Look back!

Once the race is finished, we can discuss with the teams how they communicated and cooperated with the rest of the members to do the course as fast as they can. If we introduce the version proposed, we can ask how they felt being in a team with other people and how they managed to achieve their goals. Finally, we can discuss with them how important the basic abilities in Physical Education are in our daily life.

Follow up!

- Versions: going in pairs holding hands.
- Ask the children to use their imagination and build other ability races.
- You can try to play some games blindfolded with help from the team.

Obstacle course

Get ready

Scatter the natural materials around the area you are going to use.

Sit in a circle with the children. Observe your surroundings for both what it provides and its restrictions.

Ask the children about the texture of the ground, if it is smooth or uneven, if it has up/down hills, the density of nature. Let them walk around an agreed space so as to explore all the above.

Once they are familiar with the space, come back to the circle. Introduce them to the idea of an obstacle course. What kind of obstacles can we find in nature? How do we overcome them? Explain that we are going to make an obstacle course.

Go!

Split the children in three groups according to their interest. One group designs the obstacle course, one group gathers the supplies and one group builds it. Once the obstacle course is ready, the whole group has a trial go, walking the route and getting familiar with the obstacles. Once the group is set, the obstacle course may begin! Once you had one or two

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 45 min

AIM:
Create an obstacle route with natural obstacles. Experience Body awareness. Spatial awareness. Body coordination (eye-hand, eye leg, balance). Basic mobility skills (walk, run, jump) and body control. Physical conditioning (stamina and flexibility). To have fun!

CLASS ORGANIZATION:
Groups, whole class.

SUPPLIES:
Natural materials provided by the outdoor surroundings: sticks, fallen branches, trunks, rocks, leaves.

OUTDOOR/INDOOR

TEACHER/CHILD LED:

rounds, you can ask the children if they want to make changes to the obstacle course to make more or less challenging.

Look back!

Ask the children how their experience was. Why did they choose to make those particular changes and what was the effect on the difficulty of the course? What was their favorite part? Discuss and take notes of their ideas on what they would do differently next time. How does it feel to overcome an obstacle? Was there any other obstacle they had to overcome in life and they did it successfully?

Make sure to be respectful to the surrounding area. Children should learn how to re-use and invent other applications of natural resources. Swap the groups from time to time so every child can participate in all three stages of the preparation (design, gather, construct). Adjust the challenge according to your group needs. Maybe keep a track of record of their best effort, or observe how each one did to compare their progress in the long run.

Follow up!

- You can ask the classes to build obstacle courses for each other and turn it into a school event.
- You can compare the obstacles big/ small, long/short, difficult / easy.

Pinecone sports

Get ready

Warm up the different parts of your body as you usually do. Introduce the pinecones, ask the children to tell you as many things as they can about the pinecones.

Go!

First, you can play the following attention game called *Right-Left Pine-Cone.* The children are standing in a circle, one of them with a pinecone in his/her hand. When you shout *Left*, the child gives the cone he/she is holding to the neighbour on the left until you shout another word. When you shout *Right* the pinecone goes to the child on the right, again till you shout another word. After you have practiced this for a while, you can introduce the third call: *Pinecones*, when they hear this, the children have to turn around. If the children are older, you can try calling out other words and children should not react to these.

Now the children's arms and torso's are exercised, it is time for moving our legs a bit. Ask one or two children to lie down on the ground. Place a pinecone is at his/her feet and a box/bucket at his/her head. Sitting down, the child will take one pinecone between his

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 30 min

AIM:
Develop large and small muscle groups, learn to work with a pair and work in teams.

CLASS ORGANIZATION:
Whole class and groups.

SUPPLIES:
Pinecones, 4 boxes or buckets, 2 sticks, circles made of ropes, stings.

OUTDOOR/INDOOR

TEACHER/CHILD LED:

feet, then lying down, lifts both legs up and pushes them over the head so that he/she can place the pinecone in the box or bucket. If she/he does not succeed, she/he can try again and if the attempt is successful, another child can take his/her place. You can even turn this exercise into a pair or group competition.

Now, you can try the *Squirrel Race*: make 2-3 smaller groups of children. Each group should have 3-5 circles made of string placed on the ground in front of the group. The line of circles ends with a box. Did you know that actually squirrels eat pinecones? Today our little squirrels will take the pinecones into their home. Did you know that squirrels either build a nest called dray or look for holes in the trees? Therefore, at your signal, the children who are first in the line jump from one circle to the other, place the pinecone in the nest and then return jumping and do high 5 with the next squirrel. The group that finishes first to take their pinecones in the nest are the winners. While the exercises and the race is taking place, please pay attention to the dynamic of the group and how they deal with winning and losing.

Look back!

Once every race is finished stop and talk over your observation on how the group or individuals reacted to winning or losing. Explain that whatever the result, everybody won because the main thing you can gain is physical strength and a healthy living.

Follow up!

- Ask the children what other games could they play using pinecones.
- Ask the children to replace the pinecones with some other natural materials that they could use during physical education activities.

Planets and spaceships

Get ready

Few things ignite the children's fantasy as much as space exploration. They are eager to learn about the planets in our Solar System or about the deep space, so this is a game that they will love to play.

We are outside. The teacher gathers anyone who wants to run to a space free of obstacles. The starting point becomes the ignition point and we become spaceships. Three children become planets and scatter around away from each other. The planets have to stay still while the spaceships run towards them. We make very clear the limits of the area we are going to play in. (until the fence, until the fallen log, until the tree trunk etc).

Go!

The children that are the planets go to their spots. The rest of the group goes to the ignition point and we all start the countdown (3,2,1, ignition). The spaceships have their bodies curled and when the countdown starts they open their arms towards the sky and run to orbit around the planets. We swap the children that become planets regularly.

Variation: we can start naming the planets: they can be three of the rocky planets in our

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 20 min

AIM:
Have fun, spatial awareness.

CLASS ORGANIZATION:
Groups, whole class.

SUPPLIES:
None.

OUTDOOR/INDOOR

TEACHER/CHILD LED:

Solar System, or three of the gas planets, three of the smallest or biggest planets, three planets that are closest to the Earth, three planets that the children like the most or three fantasy planets that the children can name and describe according to their imagination.

Look back!

In a circle we discuss if it was easy to run all of us together, if there was something that we found difficult. What does the word orbit, ignition, mean? What was your favourite role?

Follow up!

- You can count the planets and give each one a number from 1 to 3.
- You can ask the children to pick natural elements that would be space robots and put them next to the correct number.
- Find real or fantasy names for the planets.

Run with me

Get ready

Find a place in an outdoor area where there are two trees looking at each other with at least 2 meters of distance between them. The size doesn't matter. Make sure that there is space for running in front of them. Check the area for obstacles. Avoid an area where there is an ant hill or plants that may be destroyed during the game.

We make 2 groups of equal size. Explain the rules of the game. Each group stands in front of one of the trees 2 meters away from it. Make a mark on the group where the start will be. The groups stand behind the mark.

Go!

Give the signal for starting the game. The first person of the group runs towards the tree, circles it goes back to their line and holds the hand of the second person in the line. They run together the same trail as before, always holding hands. When they go back to their group the second person holds the hand of the third person and the three of them run the trail again. This continues until the whole group runs together. Whoever finishes first, sits down (so we acknowledge they have finished).

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 20 min

AIM:
Spatial awareness, to have fun.

CLASS ORGANIZATION:
Whole group

SUPPLIES:
None.

OUTDOOR/INDOOR

TEACHER/CHILD LED:

Look back!

We sit in a circle. We talk about how we liked the game. Were they always careful to hold hands? Was it easy for them to do so? How was it for the persons that ran all the trails? When they ran in groups of three, who ran the longest distance: the child who was the closest to the tree or the child who was the furthest from the tree? Let the children express their thoughts and feelings.

Follow up!

- You can talk about what plants and trees need to grow and how we can take care of them. Then you can ask all the children to give a big hug to the trees because they also need love to grow.

Run like an animal

Get ready

It´s spring and flowers are growing outside. We need to move our body outdoor in nature to see what beautiful things we can find.Let´s collect some different kinds of flowers and leaves (roses, daisies, tulips …) and let's put each kind of flower or leaf in a specific stone circle. We will make four stone circles in total. It´s time to play in a funny way!

Go!

Let´s move our body and let´s run! Let´s divide the class into two groups and let´s start a race!

The teacher says: "Run like a monkey/ grasshopper/ horse/…"

One member of each group will run miming the animal suggested until he/she arrives at the stone circle. The first child arriving the stone circle, will take the flower or leaf to create a beautiful bouquet of flowers.

When all the kids of the two groups finish running, let´s invite them to sit down and make a circle. We´ll look at the two big bouquets of flowers created by each group and talk about them.

CURRICULAR LINKS:

AGE GROUP: 3+

TIME: 30 min

AIM:
To work the balance, coordination and motor skills.

CLASS ORGANIZATION:
Class in two groups.

SUPPLIES:
Flowers, sticks, stones and leaves.

OUTDOOR/INDOOR

TEACHER/CHILD LED:

Look back!

Still sitting on the floor, we will encourage the kids to talk about the different animals they mimed running (if they are herbivores, carnivores, omnivores, what they eat, how they breathe...) and the different flowers or leaves they took (colour, size, smell...)

What a funny way of doing gym outdoor!

Follow up!

- We can read and/or watch *Cock-a-Moo-Moo,* so that the children understand the story and revise the different kinds of animals.
- https://www.youtube.com/watch?v=kSHvq-CH7u4 .
- We can sing the song of flowers: https://www.youtube.com/watch?v=gAcDUEgMgmY.

Nature path

Get ready

"Nature path" activity is meant for outdoor lessons and it can be done all year round. Begin by establishing the safety rules and explain clearly how the games is played. Tasks are relying on children's personal knowledge of nature.

The teacher informs the children that this activity is meant to test their attention and teamwork, also they will find out about the importance of camouflage for animals.

Children can work individually or in groups of 2-3 children.

Go!

Choose a path with a length of 10-15 meters and place on the path or near it different artificial, manufactured objects (10-15 pieces). Some of them should be immediately noticeable (electric light bulbs, balloons). Other objects should be not so noticeable to make it harder to be found (different leaves like oak and maple tree, acorns or nuts). Keep the number of items secret from children. They will walk along the path, trying to find and count (without lifting) as many objects as possible. When each child reaches the end of

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 90 min

AIM:
To develop creativity, personality, language skills, working individually or in team.

CLASS ORGANIZATION:
Groups, whole class.

SUPPLIES:
10-15 man-made objects.

OUTDOOR/INDOOR

TEACHER/CHILD LED:

the path, he tells how many objects he/she noticed. If no one has found all the objects, then let them know which is the largest number of objects discovered, and tell the children that the real number is even bigger. Invite the children to walk the path again to find all the objects paying more attention and focus on the given task.

Look back!

In the end of the game ask the children how difficult/easy was to find colorful objects/objects with the same colour as the area. After that have final discussion about how camouflage helps animals hide and give examples from local wildlife. Then children may be invited to look for small animals with a characteristic protective coloration (insects, lizards, spiders, etc.).

Follow up!

- You can exercise the even and odd numbers counting.
- If the next activity is in the same area ask the children to wear camouflage clothes then start a hide-and-seek game.
- Talk about strong colours (red, yellow, blue) in nature and their meaning.

Leaf harvesting relay

Get ready

"Leaf harvesting relay" activity is meant for outdoor lessons in order to make leaf cleaning more interesting for children and have some fun. We are in the classroom and we start talking about the season we are in. We realize that outside there are many leaves on the ground and we need to pick them up. The teacher asks a child to tell the rules for outdoor activities. There should be at least three rules (use your walking feet, be kind and have fun). Outside we gather the children in a circle and we ask them to look around and start picking leaves as fast as they can.

Go!

The child's mission – is to make a big pile of leaves. The leaves should be delivered one leaf at a time. The winner is the one whose pile is bigger. The children should pick only the leaves on the ground and put them on an indicated place. The teacher should tell them how many minutes they have to make the largest pile. When the time is up the teacher announces the winner and gives him/her a medal made from leaves. The children can then put the leaves together, jump in the piles and have fun.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 25 min

AIM:
Focus on physical skill development, to motivate children to take care of nature.

CLASS ORGANIZATION:
Groups, whole class.

SUPPLIES:
None

OUTDOOR/INDOOR

TEACHER/CHILD LED:

Look back!

In the end, gather the children in a circle again and have a discussion about how they felt, doing the task and after it. Is it better to work alone or in a team? We discuss about the texture, about the size and the colour of the leaves. Are the dead leaves still helping the tree in any way? Yes, they keep the ground warm for the roots and in time they became food for the tree.

Follow up!

- You can ask them to make three piles of leaves, a green one, an orange one and a brown one.
- You can use some tools, a rake, a broom or a bag.
- They can make crafts out of leaves: animals, flowers, faces etc.

Fun fitness

Get ready

Fun fitness activity is a lesson suitable for both outdoor and indoor classes. This activity should have short instruction times, there is offered a free time to practise, and focus on fun. We suggest doing this activity within a theme on animal world since some of the tasks can rely on knowledge of animal behaviour. We need sticks with tasks wrote on them. The task is to mime different animals. We pick an appropriate place and we start the game. The best class organization for this game is small groups of 4-5 kids.

Go!

Begin by remind the children the weekly theme on animals (if the theme is wild animals, we will write names of wild animals on the sticks). Let them name some of the animals they like the most. Next, the children choose the sticks with the task and read it. If at least one child can guess the animal, the others repeat. Then, each child will read his/her task and mime their animals one by one. If the task is s correctly done, ask the children to repeat the task together for each animal. They should also say the name of the

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 30 min

AIM:
Focus on physical skill development, motivate children to exercise, they'll be happier, healthier and more focused and work in teams.

CLASS ORGANIZATION:
Groups, whole class.

SUPPLIES:
Sticks

OUTDOOR/INDOOR

TEACHER/CHILD LED:

animal. They could also say if it is a wild or a farm animal (if this is the theme of the week) and an interesting fact about it. Probably, after each animal miming with the whole group, you will need to calm them down a bit and refocus their attention on the tasks.

Look back!

The children learn to communicate with other team participants, can discuss the task and how they worked together in a team. ”What other animals do you know from the same group? Talk about their habitats. Why is this particular animal important and what can we, humans do to ensure its future?”

Follow up!

- https://www.730sagestreet.com/spell-your-name-workout/
- You can talk about what we can use from the animals, are they wild or domestic, herbivores or carnivores.
- Ask the children to present and compare their bodies using their personal knowledge.

Move like a bug

Get ready

Ladybugs, spiders, and worms make for a fun learning experience for kids. Do you know what can make it even more fun and spice things up? How about trying to incorporate yoga into our lesson? The great thing is we are incorporating movement into learning!

Go!

Go outside with the children and ask them to find and have a look at the insects that live around. Observe together how they move. Make a circle and discuss what children have found and share with the others.

Think of how great it would feel to have all of your insect, bugs, and creepy crawlers yoga created for you! Teach the children some movements and yoga poses for the well-known insects.

Bee Pose: Start in tall kneeling. Reach out to the side with both arms. Lean side to side like a bee flying. Add: BUZZZZ if you like!

Grasshopper Pose: Start standing with your feet slightly wider than shoulder width apart. Lower down into a squat position and hold. Return to standing position or jump! Repeat!

Worm Pose: Lay flat on your back with your legs squeezed together. Point to your toes.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 30 min

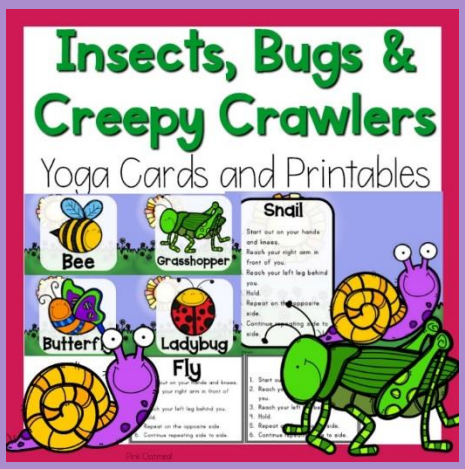
AIM:
To make learning about insects fun using movement and yoga; physical and psychological development of children.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Cards of insects' yoga poses

OUTDOOR/INDOOR

TEACHER/CHILD LED:



Prop yourself on your elbows keeping your hands on the floor. Lift your belly and chest off the ground. Let your head rest back (it can gently touch the floor). Hold and breathe.

Dragonfly Pose: Lay down on your tummy. Place your hands under your shoulders. Lift up one leg into the air. Use your opposite foot to try to get your leg even higher by placing it on the thigh of your leg that is in the air. Repeat on the opposite side.

Spider Pose: Sit on your bottom with your legs crossed in front of you. Make sure your spine is long and you are sitting tall. Move your arms to the side like a spider.

Look back!

Sit in a circle and discuss: Was it fun to make insects' poses and movements? Was it difficult? Can you think of a song about insects? Can you propose a music for a dance of insects? At the end, all students can dance by making the insects movements.

Follow up!

- Versions, connections to other activities in the Guide of Good Practices, links related to this activity, songs, online resources

  https://www.youtube.com/watch?v=qIT-9Nnlvn0

Two animal games

Get ready

These games are fun and they can be played indoors or outdoors. However, playing them outside is always much more fun. The focus of these games is on perception: auditory or visual. Try them, they are a lot of fun!

Go!

Explain to the players that only the quietest animals can eat this harsh winter. If the prey hears them, they will not see food this winter. One player is sitting on the ground blindfolded. This is "booty." On the ground between his legs there are sticks. All other players are "predators" who should grab "prey" (sticks on the ground).

If the prey heard the approaching predator, it shows the direction from which it heard the sound. The predator returns and starts all over again. The game ends when all the sticks are stolen or when some sticks are stolen. Most children want to *guard* the pray so one turn shouldn't last too long.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 30 min

AIM:
To develop creativity, to help understand animal behaviour.

CLASS ORGANIZATION:
Groups, whole class.

SUPPLIES:
Sticks.

OUTDOOR/INDOOR

TEACHER/CHILD LED:

Variation: You can play this game like this. The pray is not blindfolded but she/he is standing with his back to the other children who are forming a line at about 5 meters from the pray. The pray listens attentively. If he/she hears the slightest noise he/she turns around. That very moment, the predators stop. If the pray sees any of them moving, the predator that is seen has to turn back to the starting line. The predators that are not caught moving can continue approaching and trying to steal a stick when the pray turns around again.

Look back!

Sit in a circle and talk about the games. How important is it not to be heard or seen in the animal world? What would our live be if we were not the top of the food chain?

Follow up!

- You can talk about animals and divide them into carnivores and herbivores.
- Ask the children to play a game making animals sounds and guess the animal.

Find the object

Get ready

You can do this lesson both indoors and outdoors. If you choose to be outdoors, take the children on a short hike and ask them to find something that like and that they can carry with them (something not bigger than their hand). Encourage them to look around and choose a large variety of objects (if 5 children choose sticks, this can make the game quite difficult). If the class is too large, make two or more groups. So *Find the object* on your way: a piece of bark, a pine-cone, a leaf, a twig, a nut, some moss or lichens. If it is stones, then they must be approximately identical in size. Encourage children to take things that are already on the ground.

Go!

Back in the circle, decide if you work in groups or with the whole class. Each game participant has his own object in his hand, which he/she should study well by touch, closing his/her eyes. You should ask the children to tell how the object feels and encourage them to use a rich sensorial vocabulary: moss can be moist or spongy, resin can be gooey (like honey), a piece of

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 90 min

AIM:
To develop children's tactile skills.

CLASS ORGANIZATION:
Groups, whole class.

SUPPLIES:
Pieces of bark, pine cones, leaves, twigs, nuts.

OUTDOOR/INDOOR

TEACHER/CHILD LED:

rotten wood can be slimy, a leaf – silky, some threads of wool can be fluffy, and bark is rough and so on.

Then all participants close their eyes and each item is transferred in a circle until it returns to its owner. The transfer of objects occurs with eyes closed. You might need to have a signal when the objects are transferred and we suggest that the children place the object in front of the next classmate and not try to give it in their hands.

Look back!

The children learn to communicate, can discuss the task and use the new vocabulary they have learnt.

Follow up!

- In the following lesson, reuse the objects gathered. Make some labels with adjectives and ask the children to match the objects to the labels.
- *Touch and Learn, Shaping and Sun, Develop your senses or Sensory board* are other lessons in the Guide on the sense of touch.

Bowling

Get ready

According to Encyclopaedia Britannica, bowling dates back to ancient Egypt and has grown ever since into a very popular game all over the world. This ecological bowling activity is meant for both outdoor and indoor lessons. This activity should have short instruction times. Also offer free time to practise and focus on fun.

Instead of bowling pins, children can use bottles half filled with water. They can use paint to make the bottles look different.

Go!

Children are divided into two teams. The game consists of three rounds. More rounds can be tiring for children.

First, all players of the first team throw the ball, then all players of the second team do the same. Each player uses three attempts, after which the total number of pins knocked down is calculated. Children could learn that most bowlers take four steps to the foul line and roll the ball. You can also vary the distance between the child that throws the ball and the pins after the first round. Please make sure that all the children keep a safe distance from the thrower and there is plenty

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 40 min

AIM:
The children learn to communicate, to support each other, to work in a team.

CLASS ORGANIZATION:
Groups, whole class.

SUPPLIES:
Bottles half filled with water, ball.

OUTDOOR/INDOOR

TEACHER/CHILD LED:

of time to place back the bottles before the next throw.

Look back!

The children learn to communicate, to support each other, to work in a team. Do not forget to prepare prizes for the winning team. Ask the children if they liked the game and what do they think about playing again but changing the rules? How did they feel?

Follow up!

- You can ask the children to do different calculations on a piece of paper (for example the number of red and blue bottles knocked down out of the total number of bottles).

Balance circuit

Get ready

In the physical education class, the teacher explains the balance and its importance, thus, we are going to play games of skill and dexterity. To work the balance, we are going to make a circuit with wooden trunks of different sizes, ropes and stilts.

Go!

In the field we prepare several games that are part of a circuit. These games are going to be done in a progression regarding to the difficulty, from the easiest to the most difficult. In this way, the children will follow the order of the games.

The first game will consist of a long and wide trunk through which students can cross over.

The second game will be another trunk as long as the previous one, but narrower.

In the third game, the students will have to jump on small trunks, one behind the other, placed in zig zag. Finally, they will have to walk with wooden stilts for two meters.

Once the circuit is completed, if you want, you can start over. In this activity there is no competition, it simply consists in enjoying the moment.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 30 min.

AIM:
To work the balance, coordination and motor skills.

CLASS ORGANIZATION:
Individual, whole class

SUPPLIES:
Trunks, ropes and stilts

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

We all sit in a circle and discuss which game raised the most problems and how each of us tried to solve them. "What force pulls us to the ground? How can we beat gravity and what helps us find our balance? If you have a problem in life and you feel like you are losing your balance, what do you do?"

Follow up!

- We can relate this activity with Maths. You can build up to algebraic thinking by exploring this balance tool using shapes of unknown weight. Challenge yourself to find the weight of each shape in one of six built-in sets or a random set.
- In class we can work the balance with the following song: https://www.youtube.com/watch?v=aQ2Vco_giiE.

Anthill

Get ready

Find an open, outdoor space with various sizes of rocks.

Divide your group into teams of 5-6 people who take the role of ants. Each team should choose a place which will be their own anthill. The aim of the game is for each team to fill the anthill with supplies for the upcoming winter.

Each student needs to find their food (in the form of small rocks) and as such, each child has at least one in their hand. Once this has been done, the students return back to their teams with the aim to form a line. Hence, each student gets behind the other. The next step is to ask them to place their rock on the floor and step on it. The coordinator of the game places one more rock behind the last student of each team.

Go!

The coordinator of the game gives the following instructions to the students: each student needs to stand on top of their rock at all times. However, they need to think of an effective and clever way to get their food (rock) inside the anthill. They might come up with a variety of ideas, which may be

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 30 min.

AIM:
Develop teamwork skills, critical and communication skills.

CLASS ORGANIZATION:
Groups of 5-6 people

SUPPLIES:
Natural elements

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

contradictory within the group. Either way in the end, all groups should decide upon a common idea to move their rocks into the anthill. For this to happen, the coordinator and the rest of the teachers should assist the students as the best way to move the small rocks into the anthill is the following:

The last member of the team gives the "lonely" rock placed behind them to the person standing in front of them. This process gets repeated until the first member of the group places this rock in front of them. Finally, they need to take a step forward on the rock they just placed on the ground. In continuation, each member of the group steps forward on the rock placed in front of them and as such, there is always one "lonely" rock empty behind the last person of the line. Each team repeats this process until one by one all of the "food" gets inside the anthill.

Look back!

Gather your group in a circle: discuss about the activity and reflect on how everything went. Did everyone work together well? Was there good communication within the groups? Was there anything challenging for them? Allow the students to express their feelings and thoughts on the activity.

Follow up!

- You can continue this lesson for other personal development activities that help children connect and develop team work skills.

Feeling nature with your feet (summer)

Get ready

Feet are a very important part of our body. However, we often forget about them. The majority of our school activities focus on senses centered in our head and hands. Yet, the role of our feet is in no way, secondary to the role of our hands. Most physical activities give a relevant role to this part of our body, but we are often not aware of this. The fact that our feet are trapped in footwear for most of the school year, lead people to forget that this part of human body is capable of perceiving differences in temperature and surface textures. For this activity, you will need to be in an outdoor place where you can walk on different kinds of grounds.

Go!

Circle time, can be carried out inside a gymnasium or outside on a grass field. Start with a guessing game, let your class figure out on which part of the body your gym class will focus. Then, proceed asking questions such as: "What is the role of our feet?, Do you like to walk bare footed? And

CURRICULAR LINKS:

AGE GROUP: 4-10

TIME:
Circle time 30 min.; first exercise: 30 min.; second exercise: 50 min.

AIM:
Enhance feet sensibility, concentration skills, coordination, body parts perception, team work strategy, problem solving; overcoming fears.

CLASS ORGANIZATION:
Whole class, team group of 3/4

SUPPLIES:
Any school objects like: pen, rubbers, little balls, sand, gravel, grass, hay, water, cork, wooden sticks, pebbles.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

how often do you walk without shoes? On which surfaces do you prefer to walk with your bare feet? Can you guess what objects or surfaces your feet are touching?"

Exercise one: Invite your children to take off their shoes and socks, observe their feet and massage them. Show different massaging techniques they can apply to stretch and relax their feet. Ask them to stretch their toes, and bend them, to point and flatten alternatively their feet, to circle them holding toes and ankles, to pinch and slap the sole part of their feet. Next distribute some objects such as: wooden sticks, pine

cones, walnuts, a plastic bottle, a plastic cup, but also school objects: like: pens, rubbers, pencil cases, books, tennis balls etc. Are they able to pick up these objects? And if yes, which is the easiest object they manage to pick up? Usually children really enjoy this exercise. Leave enough time for them to practice!

Exercise two: it is now time to practice walking on different surfaces. You need to be in an area where your children can experience walking on a variety of surfaces: such as: grass, hay, gravel, pavement, sand, dried leaves, pebbles, rocks of different dimensions, mud, logs, pinecones, wooden sticks, water etc. Children can be involved in preparing the different sections of the sensory path. Arrange all materials needed to create the sensory course. Divide them into small groups of three, each group is free to choose the different natural elements, and arrange them as they please. Let each team try out walking on the paths the other teams created. Make sure children have plenty of time to experiment and enjoy this activity.

Look back!

Conclusion: back in the circle, invite the children to sit, exchange feelings, and thoughts about this activity. "How do they feel now about their feet?, Which surface did they prefer walking on? Would they like to repeat this exercise? Do they think it is useful to practice walking on different surfaces? How do they feel about walking bare footed, which was the sensory course they enjoyed the most? Did they discover something about their feet they were not aware of, before?" Pupils might found out walking on gravel and pebbles is a relaxing activity which helps concentrating, some children might overcome the fear of walking bare footed in a stream of water, other

can enjoy walking through mud or tall grass. If sand is available, then your class will get busy and have fun in multiple ways: leaving different footprints, guessing who left those footprints, drawing letters with toes, writing words, examining footprints to detect different gaits etc.

Follow up!

- For feet massage ideas check these YouTube sites:
  https://www.youtube.com/watch?v=emmi7DoPpiw
  https://www.youtube.com/watch?v=MqaPK3YIJNU

Feeling nature with your feet (winter)

CURRICULAR LINKS:

AGE GROUP: 5+

TIME:
20 min. circle time; 20 min. maths drills; 20 min. walking styles exercises; 20 min. log exercises;

AIM:
Enhance coordination skills, mental calculation skills, ambidextrous versatility, dexterity, and muscular flexibility.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Wooden logs

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Get ready

Our pupils need to be reminded about the important role of our feet during the winter season, too. The fact that this part of the body is hidden in socks and big boots, and shoes when it is freezing cold outside, does not necessarily mean we can forget about them. These set of activities can suit well both pre-primary school and primary school children. Teachers will adjust the activities according to the children's age. To prepare your class ask children to come to school with unmatched socks the following day. Pupils will greatly enjoy taking off their shoes and experience what it is like to concentrate on their feet and focus on different ways feet can move, and walk.

Go!

Lead your class to the gymnasium and invite pupils to take off their shoes, sit in a circle and place their hands on their legs. Start with some easy maths questions, such as: "How many hands can you see? How many fingers?, How many toes? Are there more hands or more fingers?, More toes or more fingers?" Etc. You can also make them practice "left and right", inviting them to lift the right

hand, and the left foot, then switch side; bend fingers of the right hand, while they are bending toes of their left foot, etc. Next, move on with a brief history lesson ask you children to practice and show how primitive men probably used to walk. Listen to their suggestions; did anyone guess how primitive human beings moved from being quadrupeds to acquiring a bipedal gait? Next, show them how human beings used to walk during medieval and Renaissance time. Back then, people used to walk placing their toes on the ground first followed by their heels. Let your pupils practice these different walking gaits. Invite them to walk just on their toes, then just on their heels, on the inner side of their feet and then on the outer side of their feet. What about walking using just the left toes and the right heel, and then, alternating to right toes and left heel? Allow enough time for pupils to get a feeling of what they are doing, invite them to focus on the movements of their feet.

For the following exercises you will need log circles; arrange them randomly on the gymnasium floor. When all logs are on the floor you can invite children to walk circling around the logs without stepping on them, then they can walk forward stepping on the logs imagining they are crossing a river infested by crocodiles! Next

what about walking backward always stepping just on the logs? Children should do these exercises wearing just their socks, in this way they will be able to have a better perception of the log surfaces. Invite your children to create their own short path, and

explore different ways to walk using the floor and the logs. How is it like to walk placing one foot on the ground and one on the log? What about zig zagging through the logs? Or jumping over them. Invite your class to be creative.

Look back!

Gather your children back sitting in a circle and ask them why they think you asked them to come to school wearing mismatched socks. What could be the reason behind wearing a pair of different coloured and patterned socks? Is it in some way connected to the different walking gaits they have experienced during the lesson? Do people all have the same walking style? Can we identify a person from the way he/she walks?
Did they enjoy wearing mismatched socks? Could wearing mismatched socks help us in learning we should accept the fact that people are all different, but we need to treat all with due respect, and kindness? Once again, in carrying out these activities consider the age of your pupils, and adjust the presentation to suit your class. With primary school children you might consider to show them the YouTube video that shows how medieval people used to walk.

Follow up!

- http://gurneyjourney.blogspot.com/2017/09/did-medieval-people-walk-way-we-do.html
- https://www.youtube.com/watch?v=EszwYNvvCjQ
- https://www.patreon.com/posts/13655286

Heads or tails

Get ready

This lesson combines Sports and Mathematics. You will need a rather flat surface of at least 20 m^2, so it is the best to take it out in the outdoors. Make sure that you check the surface for broken glass or litter.

This lesson is mostly recommended for students aged 6 as most children of this age still mix left and right. Another reason is that children aged 6 can make mental calculation fast and well with numbers 0-10.

A rule for this lesson would be: "I take care of myselft and the others" as the students might collide into each other if they are not aware of each other. The success criteria for this lesson are: I make the right number of steps and I walk the steps correctly.

Go!

After the regular warming-up exercises that pupils do in physical education classes, show them the heads and tails of a coin and how to flip the coin. Also tell the children how the game is played: the students will form a line in front of you, each making sure that he/she is at least one arm distance from the classmate standing in front of him/her.

CURRICULAR LINKS:

AGE GROUP: 8+

TIME: 90 min.

AIM:
To practice left and right and types of walking in physical education; to practice mental calculation with numbers 0-10.

CLASS ORGANIZATION:
Whole class or large groups.

SUPPLIES:
Coin

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Each child will take turn to toss the coin. It the side that the coin is showing when it lands is "heads", the line of child will move to the right and if it is "tails", the line will move to the left. After practicing left-right a few times, it is time to add some types of walking: "Go in the right direction with dwarf steps!", "Roll in the right direction three times!"

Now it is time to add some Brain Power with some Maths exercices: "The coin, shows heads which means that you are going to the …. ("right" say the children in the line) nine minus five GIANT steps". Each child makes the calculation in his/ her mind and when you say "Go!" will make 4 GIANT steps to the right. You will soon notice that the students who do not make the correct calculations will not stand in a line with the rest of the children anymore. It is much funnier if the child who flips the coin says the exercises to be done. So, you can ask them to make the calculations again.

The types of walking that are recommended for this leason are: walking on toes, walking on heels, walking with a long stride (giant steps), latteral haft and full squat walking (dwarf steps), elephant walk (with straight knees and palms on the ground), backward walking etc. The children find it funny to roll or do the cart-wheel but you need to make sure they keep the right distance from each other.

Look back!

After the relaxation exercises which end any sports lesson, get the children in a circle and ask them when do we toss the coin and how do we count with steps in everyday life. This class gave answers like: "we toss the coin to choose the team that starts a football match" or "I saw dad measuring the length of the room with steps". You can also add that different types of walking engage different types of muscles. Also appreciate engament and safety awareness.

Follow up!

- With older students, you can practice multiplication and division or any types of exercises that they can calculate in their minds.

Tangled

Get ready

Before we start the activity we can review the name of our body parts and how we name them in our mother language and in english. To get ready we can go little by little stretching every part of the body while we name them. On a walk through the forest we also need to collect some sticks with different length. We will explain them that the stick is going to be an extension of our body during the game.

Go!

The students will be divided into two groups of at least 5 children. Each group has to choose one member who will go away for some minutes without looking at his group.

The rest of the children will make a circle holding sticks with their hands, after this they will start tangling each other but always holding their sticks. They have to mix themselves as much as they can. They must be holding their sticks during all the activity.

Now it's time to untangle their group, so the chosen students have to come back and move the children of their group trying to untangle them. The first group reaching the circle position will be the winner.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 60 min.

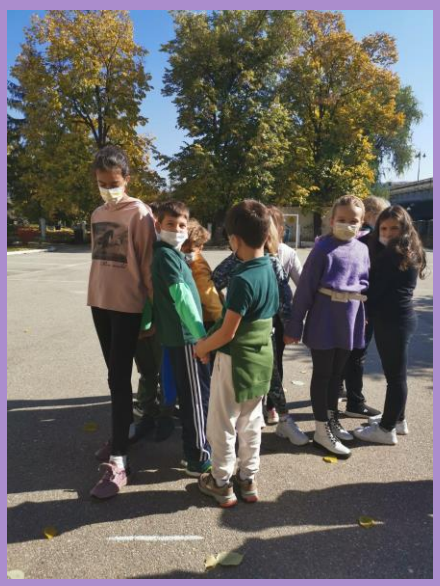
AIM:
Learn vocabulary about body parts, develop gross and fine motor skills, team work, listening and speaking skills.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
One stick for each student, our body

OUTDOOR/INDOOR:

TEACHER/CHILD LED:



Look back!

After the activity we should talk about difficulties and positive aspects we found during the game. Was it easy? did we speak enough to solve the tangled?

Follow up!

- We can have some variations of the game holding different objects like sticks, big stones, a rope, etc.
- The time can be another variation, less/more time depending on the ability of the group.

Catch the gecko's tail

Get ready

We presented this activity to wind up our Science activity on small reptiles such as gecko and lizards. One of the most striking characteristics of these reptiles is that they can grow back their tails once they lose it. This characteristic inspired us to create this game that involves fun and movement.

While playing, the children have the opportunity to identify themselves with these little creatures and reinforce the fact that some reptiles can grow back their tails. For this game you need a wide-open space, each player needs to have two tails.

To represent these tails, you can use: scarves, ribbons or long and narrow strips of cloth. Your pupils can help you to collect this material, and maybe decorate it, so that they resemble the gecko's tails.

Go!

In the open, invite pupils to stand in circle, the teacher explains the rules of the game, and find a funny way to pair them up and select the 'catchers' depending upon which version of the game you decide to play.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 45 min.

AIM:
Strengthen speed in movements, and ability to play in pairs and groups, be loyal and respect rules.

CLASS ORGANIZATION:
Whole class and pairs.

SUPPLIES:
Scarves, ribbons, stripes of cloth, magic markers to decorate, or colour paints.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Version A

Once you have paired up the children, the pairs spread in the open-air space you have at your disposal. Each child tucks the 'tails' inside his/her belt, and stands in front of his/her classmate, then the teacher can signal the start of the game. The aim of this game is to steal the adversary's tails one after the other in the set time. Do not leave more than 10 minutes for the action.

When a player loses his/her tails, the two children sit and wait for the other pairs to finish up. When the time is over, the pairs can switch their roles, and get ready to repeat the game two or three times.

Version B

To select who is predator first you can launch a Maths drill. Knowing that this time there will be one predator for each five or six players, pupils should calculate how many predators are needed. Then, reviewing Science, you can ask your pupils who are Gecko's predators, and once you collect the answer you can assign these names to the predators. When the groups of geckos are ready, the teachers signal the start of the game, and the predators have to chase the geckos' tails. Those who lose their tails, become predators on their turns. Leave fifteen minutes for the chase and then signal the end of the game and count how many geckos are left.

Look back!

Once the game is over, invite your children to come back to the circle, allow the students to relax and breathe quietly, and then ask them if they had a good time, and if they did not enjoy the game, ask them why. In conclusion, the teachers have to remind the pupils that we should always respect animals, even if they are small and look strange or irrelevant. Teachers should stress that aggressive behaviour towards animals are not acceptable.

Corn basketball

Get ready!

In nature outings, corn are collected, if possible we will look for a large size and opened corns so that their weight is low and handling is favored. It is important that the corn have the same size for a correct development of the activity. The search and the challenge of achieving these requirements will turn the preparation of the activity into something exciting for the students.

Go!

We are going to play different games:

- A basket is placed and by turns they have 15 seconds to score as many corns as possible in the basket.
- Throwing 10 corn should make the best score they can.
- A basketball court is delimited and they must make plays keeping static in their position. They have to pass the corn to all team members that should receive and finally make it. If the corn falls to the ground, possession will pass to the opposite team. The same will happen when a basket shot is made.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 90 min.

AIM:
Development of psychomotor skills, balance and distance calculation; development of manual skills using natural materials.

CLASS ORGANIZATION:
Groups, individual

SUPPLIES:
Corns and a basket or container that works for it

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

The score will be recorded by students who are not playing and then perform calculations such as the average number of hits (for older age groups), total count, number of pitches.

Follow up!

- There are many different games that can be done such as measuring the longest distance from which you have managed to score and take it as a record to beat, and even that this game is part of a set of games that make up some Olympics at school.

From invertebrates to vertebrates

Get ready

This is a fun and concrete physical activity to help your students understand the different stages of body movements that animal life on earth experienced, starting from the first small invertebrates to the different vertebrates.

You can present this activity either in a large dry open field or in your school gymnasium. Make sure your pupils will be able to lie down on the ground without getting wet, or excessively dirty.

Go!

Invite your students to close their eyes, focus on what you will tell them. In a short lapse of time, they will travel millions of years. At the start, they should imagine to be invertebrates immersed in waters, and thus they will move as invertebrates all around the space which has been assigned for the activity. Your pupils will be able to be sponges, water worms, starfish, mussels, octopuses, squids, and jellyfish. Let your pupils imagine what kind of invertebrate they choose to be, and feel free to interpret the animal they have chosen. Allow at least ten to fifteen minutes for this

CURRICULAR LINKS:

AGE GROUP: 8+

TIME: 90 min.

AIM:
Physical coordination, motor skills, development of creativity, and imagination, interdisciplinary connections.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
T-shirt, and sweatpants and proper shoes

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

first part of the exercise. If you realize that some children are confused about what kind of movements they can do, help them out, suggesting the name of an invertebrate.

(invertebrates)

(Waterworms)

(Star fish)

After this first phase of invertebrates' movements in water, you will introduce a set of physical exercises that will gradually allow your children to figure out how amphibians developed the capacity to walk on the ground.

Invite the students to lie down prone with their forehead on crossed hands in a big circle. Invite them to stretch in turns one arm straight in front of them, and to stretch the opposite leg, (right arm/left leg -left arm/right leg). Let them repeat this exercise, but this time invite them to lift their right arm and left leg, and then lift the left arm and right leg for at least five to six times. Finally, students can experiment lift up in turns both arms, and both legs. Let them rest.

Picture A

Picture B

Picture C

For the next set of exercises ask pupils to bend alternatively their arm and pull the elbow down to their side, bend their leg and bring their knee up towards their elbow. Let pupils repeat the exercise several times till they can understand that this movement can help them advance gradually.

Picture D

Invite students to try out different gaits: walking sideways like a crab, walking and jumping like a frog, walking like a crocodile, walking like a cat, walking like an elephant, a monkey and a gorilla.

Jumping frogs

Walking Elephants

Look back!

Back in the circle ask your students if they liked the lesson and ask what they have learned. "What is the gait they have found the most interesting, and entertaining? Did they enjoy more to move as an invertebrate, or as a vertebrate?"

Follow up!

- http://www.differencebetween.net/science/nature/difference-between-vertebrates-and-invertebrates/

Personal development

Personal development preschool activities:

- Do you know yourself?
- How do you feel?
- What makes you smile?
- Hiding together
- Memory game
- Treasure hunter
- Nature bingo
- Home
- Shoe lacing
- Cooking time

Personal development primary school activities:

- A symbol of hope-the salty rainbow
- Superheroes
- Who is afraid of the big, bad wolf?
- Teamwork
- The maze
- The power of more

Do you know yourself?

Get ready

First of all we go outside and have the students seated as in a meeting in order to work on emotions and self-knowing. We are representing the faces in a very special way by using recycled nature elements. We speak about our feelings and emotions, guiding them to think about how they feel and why and then we make them explain their feeling to the others. Then, in pairs, they will describe themselves: what they look like, their age, the colour of their hair...

Go!

Step 1. Going outside and describing the surroundings

Step 2. Spending a few minutes collecting small tree branches, pine tree if possible, to represent each student's face.

Step 3: Giving them paper and crayons, along with the nature elements they picked up, they will paint their faces.

Look back!

Once they have finished their drawings, we get the big group together and show our paintings. Each student will explain which

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 60 min

AIM:
Knowing yourself and learning how to express yourself.

CLASS ORGANIZATION:
In pairs

SUPPLIES:
Sheets of paper, pines, sticks, grass, flowers, colours and glue.

OUTDOOR/INDOOR

TEACHER/CHILD LED:

parts of the face they found the most difficult to represent and which one was the easiest. Next thing, back to the pairs we created before, we will show our faces and ask our partner if the drawing looks like our face.

Follow up!

- The sticks, pine needles, leaves, branches left can be used as paintbrushes for a new work of art.

How do you feel?

Get ready

Today it's time for our orchard workshop. It's February and spring is near.

Four months ago, exactly in October our children went to our school orchard to plant onions and broad beans. During these months, our kids have observed the growth of their onions in the breaks or when they passed next to the school orchard.

It's time to collect our onions!

Go!

Kids go to the school orchard guided by the teacher or the person in charge of it and sit down around the tree.

Let's explain to them the different types of onions, their several layers, where we use them, the period of planting or harvesting, how special they smell, their importance for cooking....

It's time everyone stands up and collects his/ her onion. How funny!!

Kids are in contact with the soil and they will need to shake their onions to clean them and then they will need to wash up their hands.

Let's invite them to come back to the class.

CURRICULAR LINKS:

AGE GROUP: 3+

TIME: 60 min

AIM:
Know different aspects of the crops, learn to collect our seeds, express our feeling, oral communication

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Only their hands

OUTDOOR/INDOOR

TEACHER/CHILD LED:

Look back!

In the classroom, let's encourage kids to talk about how they felt collecting the onions in the school orchard and let's invite them to create different faces expressing feelings using the onions (Ex: happy, excited, nervous...)

Follow up!

- We can do similar a activity when they collect the beans and the garlic in May, the lettuce in March or at other times, depending on the seeds we sow in our orchard, school yard or garden.

What makes you smile?

Get ready

Not the best day? The little ones look grumpy and moody? You know them! Do something and bring a smile on their face. Celebrate their smiles. Hooray, for beautiful smiles!

Go!

What is a smile? Why are you smiling? When are you smiling? Do you smile when you see somebody or something you like?

How do you feel when you smile? Do you feel happy? Do you feel joy? Are you ok? Does anything or anybody make you feel comfortable? Is there anything that makes you always smile, instantly?

Encourage your students to share their ideas and feelings. There are no wrong answers. We, human beings, have many things in common but also there are many differences between us: height, age, color of the eyes, and of the hair. We can have different ideas, needs, dreams and it is ok. Some children smile when they see their pet doing something funny, some children laugh when they read a story, go to circus or to the theatre. So, what makes you smile? Make sure that all children have their say. Give time to the more timid

CURRICULAR L INKS:

AGE GROUP: 5+

TIME: 90 min

AIM:
This activity contributes to self-discovery, to the identification of needs and is also an exercise in mental and emotional balance.

CLASS ORGANIZATION:
Whole class, groups of children, individual

SUPPLIES:
Pencils and paper. Older students can use their phones or tablets to take pictures

OUTDOOR/INDOOR

TEACHER/CHILD LED:

children to clarify their ideas and express themselves. In our lives we have an ally, a trustworthy friend- nature. Nature can help us find balance, it brings a smile to our face and the feeling of peace and gratitude.

Challenge your students to explore the area nearby, carefully delimitated (depending on student's age and the characteristics of the terrain) and to find a natural element which makes them smile. There is no need to bring that element with them, just to observe it carefully. It could be a tree, a flower, an insect, a log, a simple leaf, the sun, a bird flying up in the sky, a fluffy cloud, a little stone, some dew drops, a spring, etc. They can observe, draw or take a picture. Back in group they are invited to talk about this element.

Look back!

The simple fact that they talk about this brings the smile on their faces. They were challenged to walk in a natural area, to spend a few precious moments with themselves, breathing fresh air, reconnecting with nature and paying attention to their thoughts and needs. They had a moment of introspection.

Follow up!

- This activity is connected with *The flower that makes kids smile.* In Romania**,** *păpădia* **-**the d*andelion* is a common plant and it has a beautiful legend.

Hiding together

Get ready

A different kind of hide and seek game. Decide the area the game is going to take place and give clear instructions to the group about the limits of it (until the tall tree with the green leaves, until the fence etc.). Explain the rules of the game step by step. In the beginning, the children start by playing individually but in the process they need to cooperate and become a team. Use both your words and your body language to explain that they will need to hide in small and narrow spaces along with their friends. In the beginning, the children might need the encouragement of the rest of the adults into following the instructions.

Ask the group to decide among themselves who is going to hide first and where the place the rest of the group is going to count will be.

Go!

The game begins where the whole group starts counting (up to... according to their ability). The person who is hiding goes to the hiding place. When counting finishes everyone tries to find the hiding person. Whoever finds him/her, hides with them. In the end there will be only one person looking for everyone else.

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 30 min

AIM:
To encourage flexibility and alertness, spatial awareness, groups dynamics, have fun.

CLASS ORGANIZATION:
Whole class

SUPPLIES:
None

OUTDOOR/INDOOR

TEACHER/CHILD LED:

Look back!

In a circle, we discuss how we liked the game. Did we cooperate with each other? Did the children find useful places to hide, enough for the whole group? Was the game easy or difficult to play? If it was difficult which part did they find difficult?

Follow up!

- Little children love the idea of a *jail* where the found people are taken. Choose 2-3 seekers to do this. There is a catch, though: the hiding children who were not found can *free* the people in jail if they touch them without being spotted by the seekers.
- Play a game of regular *Hide and Seek*. Reflect on the differences and preferences of each child.

Memory game

Get ready

"Memory game" activity is meant for outdoor lessons. Activity can be used all year round. "Memory game" should have short instruction times. Tasks are relying on children's memory personal experience and knowledge of nature. Children can work individually or in group of 3 children.

Go!

Before the start of the game fifteen (the amount of the ribbons may differ) ribbons are hung in the forest/park/garden on different natural objects. Then the children are invited to find these ribbons.

The child's mission is to remember the natural objects on which the coloured ribbons are hanged, and then to name them. They are not allowed to remove the ribbons from their places so that everyone can find them.

Look back!

In the end, have a final reflection on what kind of nature objects children found. Children can discuss the task and how they liked it, what was difficult or easy for them.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 30 min

AIM:
To promote children's attention and memory development

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
coloured ribbons

OUTDOOR/INDOOR

TEACHER/CHILD LED:

Follow up!

- A new task could be to match the colour of the ribbon with a new natural element. If the ribbon was green on a rock then move it to a green bush or on the grass, if the ribbon was red then move it to a red flower. Find out how many ribbons were matched to natural elements and how close was the match.

Treasure hunter

Get ready

"Treasure hunter" activity is meant for outdoor and indoor lessons. Activity can be used all year round.

"Treasure hunter" should have short instruction times. Tasks are relying on children's personal knowledge of nature.

Children can work individually or in groups of 3 children.

Go!

The child's mission – is to find all nature elements listed in the given sheet of paper. Then, that all nature elements are found or when time is up, each child or a group of 3 children present nature elements found. Others can follow, if the task is correctly done and repeat the task together.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 15 - 30 min.

AIM:
To develop creativity, personality, language skills, working individually or in teams

CLASS ORGANIZATION:
Groups, individual

SUPPLIES:
Sheets of paper with list of nature elements, bag or basket to store collected items

OUTDOOR/INDOOR

TEACHER/CHILD LED:

Look back!

In the end, have a final reflection on what kind of nature elements children found, what new nature elements they have learnt. Children can discuss the task and how they worked together in a team.

Follow up!

- Now that they have collected all the items on the list challenge the children to create something new using all elements.
- A new task could be expressing their feelings about the hunt through a representation using all elements collected.

Nature bingo

Get ready

Nature bingo is meant for outdoor lessons. This activity can be used all year round. Nature bingo should have short instruction times.

Children can work individually or in groups of 3 children. Play a simple game to divide the kids in groups.

In preparation talk to the kids about what kinds of objects they will find outside. Discuss where it is more likely to find some elements (leaves on the trees or bushes, rocks near the path, sticks under the trees…).

Explain the rules for playing bingo. Make sure all the children have something to write with.

Go!

Before going outside, children are given bingo cards with the names of forest natural objects instead of numbers. Kids have to find these objects in the garden/ park/forest and play bingo (crossing out horizontal, vertical line or diagonal, and possibly the entire card).

This is a competitive game that requires the children to work in teams and find all the elements on the bingo card. This may lead to some frustration in the children who do not find the elements as quickly as the others.

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 30 min

AIM:
To develop creativity, personality, language skills, working individually or in team

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Bingo cards and pens

OUTDOOR/INDOOR

TEACHER/CHILD LED:

Help them develop resilience and learn how to enjoy playing a game not to win but just for the joy of playing.

Look back!

In the end, have a final reflection on what kind of nature objects children found, playing "Nature bingo". Ask questions about how much they enjoyed the game. Spend time discussing why it is important to know how to lose a game and not be upset. Reflect on what you can do better next time you play bingo with your class.

Follow up!

- Add all the natural elements to see how many you have altogether.
- Organize all the natural elements collected by beginning sounds and see if you can make words.

Home

Get ready

Who as a child has not role-played a family at home? I still remember how we arranged our little houses in the garden, under a table or in the attic. I remember how the cucumber was the meat that we "cooked" for the family, how strict rules applied to our household. During these role-plays, children empathize with their parents and siblings by putting themselves in their shoes and also make sense of real-life situations. Please take into consideration to display the necessary materials in advance!

Go!

Start in a circle talking about the things that we cherish the most in life. Family is top of the list! Talk about family members and if there are specific chores that the children have to do in the house. Next, introduces the 5 role-play centres that have been already prepared in advance:

1.House building centre. Here, with the help of a parent volunteer / teacher assistant, the children build a tarp hut like this: they tie three longer sticks at the top, wrap the tarp around the 3 sticks and fix the margins with clothes pins. Once this *house* is ready, (it does not take more than 5 minutes) the children can go

CURRICULAR LINKS:

AGE GROUP: 3+

TIME: 45 min

AIM:
Develop empathy and social skills.

CLASS ORGANIZATION:
Whole class or groups of children.

SUPPLIES:
Washing line or a string, clothes pins, tarp, pots and pans, mud kitchen.

OUTDOOR/INDOOR

TEACHER/CHILD LED:

in and out the house, bring in pillows to pretend they go to sleep, add decorations as a hanger or a scent jar, receive guests etc.

2. Clothes-washing centre. Here the children "wash" doll clothes in a waterless plastic wash basin and pin them with clothes-pins to the washing line. The children can thus develop hand-eye coordination and smaller muscles through object manipulation.

3. Mud-kitchen centre with plenty of pots and pans as well as plenty of mud. The children can pick edible vegetables and herbs from the garden nearby, or just pick some materials from the ground and cook. A stick can be a yummy sausage, a nut can be an avocado, a leaf can be lettuce. There is no limit to imagination.

During play, please monitor the communication, develop language skills, allow for experimentation, Develop social skills and collaboration. Don't forget to ask open ended questions and play along.

Look back!

After the children tried out all the centres they were interested in, sit down and talk about how did they feel performing things usually done by parents, if they think they could help them in daily chores.

Follow up!

- Add a car-wash center: provide toy cars to be washed with soapy water and sponges and then driven on a steep dusty slope to get dirty again.
- Role-play conversations can tell you a lot about the children's family relationships. Be aware of any situations that require further interventions!

Shoe lacing

Get ready

Tying shoe laces proves to be one of the big challenges in our children's lives. More and more children learn how to do it only by the age on 7, 8 or above. Turn this rather disagreeable activity into a fun one by taking it outdoors.

We need to prepare in advance enough shoe laces (one per child). If shoe laces are a problem, string will do, too. Begin in a circle by showing them the laces and asking them what they think the lesson is about. Yes, we will learn in a fun way how to tie our shoe laces. Tell the children a basic rule: shoe laces are to be tied around the tree branches and not around our or other children's body. First let them feel and notice the length of the shoe laces. Also try to identify the children who already know how to tie their shoe laces. They can act as teacher helpers or experts and teach other children to do it.

Go!

Together, you can learn this well-known poem to remember how to tie the shoelaces:

Bunny ears, bunny ears, / Playing by a tree./
Criss-crossed the tree,/ Trying to catch me./

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 30 min

AIM:
Learning how to do knots and tie shoe laces; gain independence in daily tasks.

CLASS ORGANIZATION:
Groups/ whole class

SUPPLIES:
Laces or strings

OUTDOOR/INDOOR

TEACHER/CHILD LED:

Bunny ears, bunny ears,/ Jumped into the hole./

Popped out the other side,/ Beautiful and bold.

While practicing the poem, practice by tying knots and bows on tree branches (the ones that are a bit thicker than your thumb will do). Some children may find it difficult yet and may need individual support and encouragement. Ask the kids who already master this skill, to act as teacher assistants and show another child how to do it. They will be happy to help! The children that master well the technique on the branches can also try with real shoes.

Look back!

Get back in the circle and ask the children how they feel now about shoe lacing. Don't expect them to master this skill in one class. If, by the end of the lesson two-three more children can tie their shoelaces, you are already winners!

Follow up!

- Share this activity with the parents and ask them to further practice the skill at home.
- You can use shoe-laces to practice different knots.
- Show the children how people mimicked nature when inventing shoe-laces or Velcro by watching the vine tendrils or the thistles.

Cooking time

Get ready

In an area outside where there is a table or a bench we have gathered lots of different natural elements such as: leaves, sticks of different sizes, rocks, pebbles, pine cones and pine needles.

Go!

The teacher becomes the cook and starts making lots of nice food with the pinecones, the leaves, the pebbles. The sticks transform into spoons, bigger stones into the plates. She pretends to taste the food and adds some salt (sand) to it to make it taste better.

She invites the children to join and either cook together, or order their favourite food. When the children engage in the activity, the teacher withdraws and lets them cook on their own.

Look back!

Back in the circle, the teacher asks the children if they enjoy cooking. What was the food that they cooked and what their favourite dish was.

Follow up!

You can add pots and pans in the activity and if you want to have messy play, you can add dirt and water for mud soups and mud pies.

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 30 min

AIM:
To expand imagination, to make links with the natural world, exchange experiences with others and have fun.

CLASS ORGANIZATION:
Individually

SUPPLIES:
Natural elements

OUTDOOR/INDOOR

TEACHER/CHILD LED:

A symbol of hope - the salty rainbow

Get ready

The rainbow is a symbol for hope in the bible, a metaphor for new beginnings, for promises that must be kept. After the Flood, God promises Noah that He will never destroy mankind again. In fact, if we think of the present situation, there is no need for any divine intervention. Giving people free will, God made us able to destroy ourselves. The entire world faces now a challenging situation. The humankind is forced to re-evaluate its position in relation with nature and the path to go in the future. The rainbow becomes these days a symbol- *Everything will be alright!* It is up to all of us for these words to translate into reality.

Go!

Children draw, paint and make a lot of rainbows crafts. Here is a different type of rainbow, with a scientific touch.

Following the instructions, students can easily make this art experiment by themselves. Please note that the experiment has two parts, coloring the salt and placing it in colored layers in the jar, in the right order.

Instructions:

- Put 5 tablespoons of salt in a paper cup

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 50 min.

AIM:
Supporting children in maintaining an emotional balance in a difficult period of time; combining elements of art, science and spirituality.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Salt with big crystals, food coloring (Easter egg dye, or simple painting colours), jars or paper cups for each colour of the rainbow, spoons, paper plates optional (the salt will dry more rapidly on plates), water, a nice bottle or tall jar, ribbons.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

- Add 3-4 drops of food coloring. The quantity of food coloring or dye depends on the quantity of salt and the intensity of the color. Add some water. Just to mix well the salt with the food colouring.
- Do the same thing for all the colors.
- Leave the salt to dry for 2-3 days. It helps if, from time to time, you mix again.
- When the colored salt is dry, pour it in the nice bottle or jar in the order of the colors of the rainbow: red, orange, yellow, green, blue, purple, violet. You can prepare only a violet or mauve salt (so, six colors, not seven).
- Decorate with a ribbon or/and add a message on a label.

The science behind this experiment will be approached according to your students' age and previous knowledge:

- Salt is a solid. With larger or smaller crystals or finely ground, salt is a substance with a very wide range of uses. The teacher can introduce here information about crystals, about the importance of salt and uses in our daily life.
- Salt dissolves in water. We can talk about the salinity of the sea waters, concentration, solutions and saturated solutions. We also have a mixture of water, salt and food coloring (liquid or powder).
- Water evaporates during drying of the salty water. After evaporation of the water only colored salt remains in the cups. If you put the wet colored salt on paper plates the evaporation will be faster because the rate of evaporation depends on the free surface.
- Pupils practice measurements: number of spoons, number of drops related to weights and volumes
- Tackle the art side: if you have at your disposal only three colors: red, yellow and blue, can you make the rainbow? Yes, green, orange and different shades of violet can be obtained by mixing two primary colors.
- And finally, what is a rainbow? The teacher can enrich pupils' knowledge about light introducing phenomena like reflection, refraction and dispersion of light.

A spiritual touch can be added to this activity introducing the story of Noah and the Great Flood and talking about the promises and the importance of respecting the given word.

Look back!

At the end of my activity one of the students concluded that the result of the experiment "*is a salty rainbow*", hence the title of the activity. Along with the ribbons students attached a label in all the languages of the partnership:

Curcubeul- simbolul sperantei- Totul va fi bine!
Un arcobaleno come simbolo di speranza- Andra tutto bene!
Arco iris -un símbolo de esperanza- Todo estará bien!
Ουράνιο τόξο-σύμβολο της ελπίδας. Όλα θα πάνε καλά!
Rainbow-simbols cerību. Viss būs labi!
Символ на надеждата. Всичко ще е наред!

Follow up!

- Challenge your students to identify other symbols of hope.
- Invite them to make drawings, paintings or other crafts inspired by rainbow.
- Identify natural items with the colors of the rainbow.

Superheroes

Get ready

At the beginning of the class, each student takes on the role of a superhero. Examples from literature, history or cinema are used. With the help of the teacher they analyse their strengths and weaknesses. They choose 3 superpowers they want to have and 3 weaknesses they want to overcome. Students offer ideas on how to overcome weaknesses so that the character can achieve his goals.

Go!

The students are divided into two teams. First they write the name of a specific superhero. Representatives of the teams take turns to describe the character, pointing out his strengths and weaknesses (Example: Spiderman – he is brave, quick and very strong, he serves the Law and wants to do justice. At the same time he is shy and cannot show his love, he is afraid that he might loose his beloved ones, he gets to be lonely). The team that first guesses the superhero wins a point. The second stage of the game is for the team representatives to describe the superpowers of the characters, and for the other team to find out what natural phenomenon they are connected with and to tell about it.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 40 min.

AIM:
Students to reflect on their own strengths and weaknesses and assess their progress in their personal development using familiar characters who go through a process of personal growth.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
A data sheet – Superpowers and weaknesses
A data sheet – strong and weak sides of the superheroes from Uniks club
Self-assessment card

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Look back!

Students fill in the data sheets.

Data sheet – Superpower and weaknesses:

Superpowers	Weaknesses
Braveness	Shyness
Quickness	Loneliness
Strength	Fear of darkness

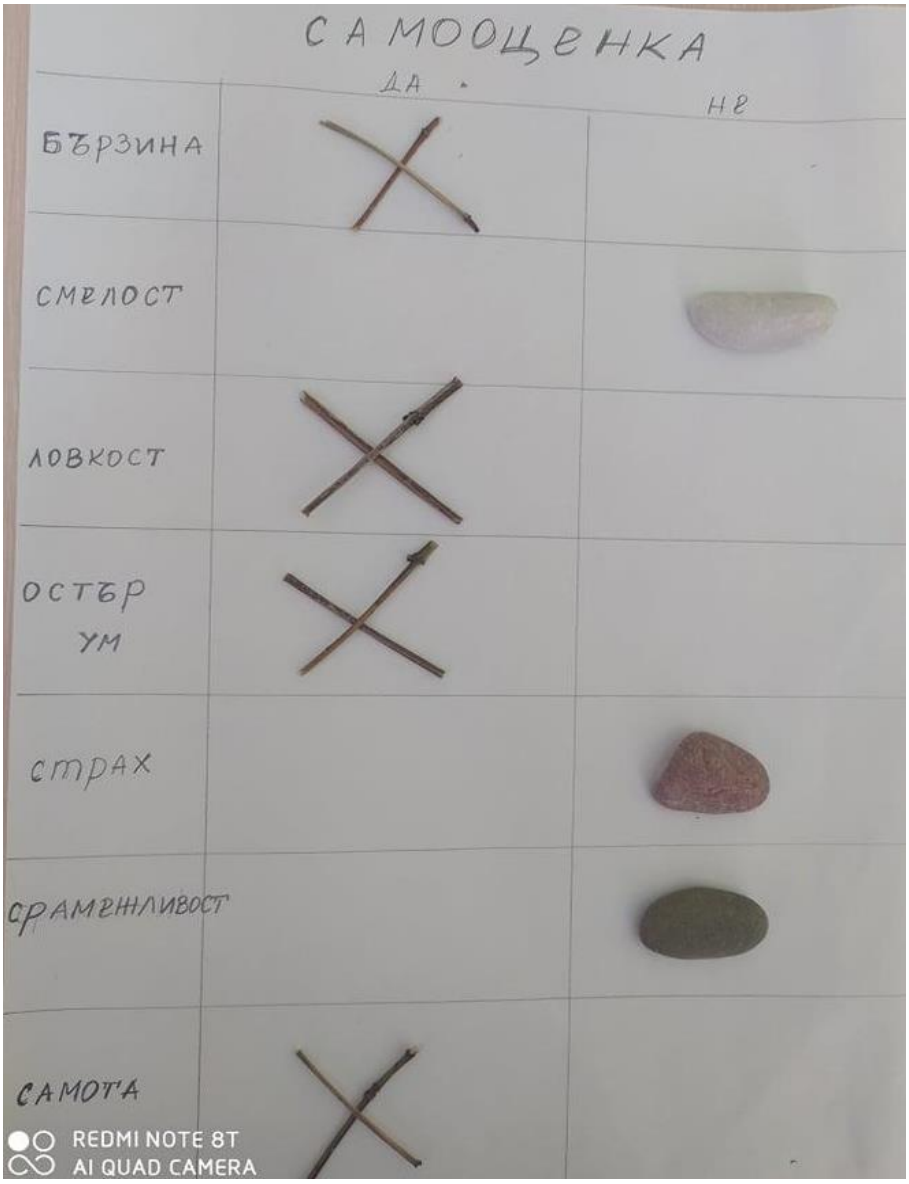
Data sheet – Strong and Weak sides of the heroes:

Superheroes	Positive strong sides	Weaknesses
Persy Jackson	Takes power from water	Fear of heighth
Winks club fairies	Strong, brave, go through transformation to turn into fairies	They are punished by taking off their magic power
Spiderman	Possesses reflections and quickness, ability to climb walls like a spider	Shy and lonely

Data sheet of the superheroes from Winks' club:

Superheroes	Description of the hero	Nature phenomena
Bloom fairy of the dragon flame	Receives power from water	Eruption of volcanoes
Stell –fairy of the bright sun	Likes fashion	A star from the Solar system
Flora – fairy of nature-фея на природата	Likes nature, likes nature, knows all plants and what are they useful for	Healing plants- herbs
Leyla – fairy of waves	Likes dancing, a good sportswoman	Hurricane or Tsunami

Self evaluation data sheet: Characteristics – quickness, braveness, mastery, cleverness, fear, shyness, loneliness



Follow up!

- Ask each team to invent a superhero with strength and make his/ her data and self-evaluation sheets.

Who is afraid of the big, bad wolf?

Get ready

The wolf is one of the first wild animals introduced in our children's world. The wolf is often portrayed as a fierce, dangerous animal in stories like *The Little Red Riding Hood*, The *Goat with the Three Kids* or *The Three Little Pigs*. But how much is true in these stories? What messages are hidden among the words? Sitting on logs in the middle of the woods, next to a fire camp this is what I am calling an inspiring atmosphere. All the students know the story of the *Little Red Riding Hood* and are aware of the end of the big bad wolf punished by the hunter for his crime - the beast ate an innocent girl and a helpless grannie! Through open questions students are challenged to analyse the characters' behaviour and to explore different meanings of the narrative. They are lawyers, the wolf is their client. The main task is to save their client's life. They can plead for the rights of the wild animals and are challenged to present the facts from new, unexpected perspectives.

Go!

Retell the story using short sentences. Strictly present the facts in chronological order. Try to

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 50 min.

AIM:
Develop critical thinking skills like the ability to ask open questions, formulate reasoned answers, identify unrealistic elements from a story, organize information, draw conclusions.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Pencils, coloured pencils, crayons, papers

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

not make remarks which involved feelings, emotional reactions like "Poor, Little Red Riding Hood!" or "Oh, what a bad wolf!" Ask the children to make a story map.

"So, what are the accusations against the wolf?

How big is the wolf's snout? Let's take a look at some pictures. Using our hands let's imagine how far the wolf can open its jaws. How about his stomach? Using your hands show me how big the wolf's stomach is. Is it possible, scientifically speaking, for the wolf to swallow a grannie and a girl unchewed, even if they are both underweight?

What is the girl doing in the forest? Why is she alone? What do you think about the mother's decision to send the girl alone in the woods? Would you go alone in the woods? Under which conditions? What had her mother advised her before she left from home? What would your mother tell you to do in the same situation?

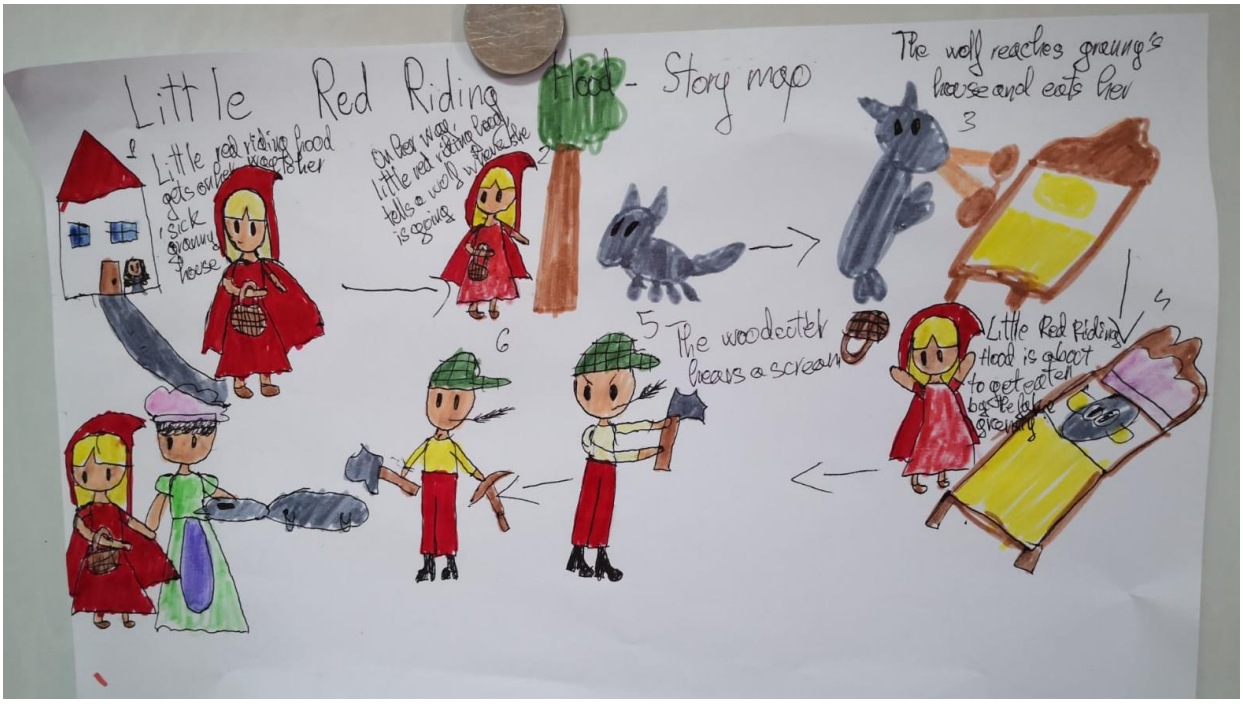
A single wolf in the forest? Being the only specimen of its specie in a specific area it would bring him the status of a protected specimen. So, no shooting guns in that forest! What do you think about the forest ranger's action?

All the living things have needs. For a wild animal, in our case, the wolf, the woods are its home. The woods give him shelter, food and water. What do you think about it? Does it have the same needs? Is he entitled to find shelter, water and food in the middle of the forest?

The wolf from our story talks, walks, spies the little girl behind the trees and bushes, enjoys flowers, disguises like grannie (wearing grannie's clothes), plans his actions. Does he act like an animal or more like a human character? What kind of character could the wolf embody? Why do you think that? How would you punish a man who harmed a little girl and her grandmother?

Look back!

These activities support the development of children's critical thinking, putting in the foreground the careful approach of a subject from as many perspectives as possible. Encourage all your students to share their thoughts and ideas, to express their feelings related to the story.



Follow up!

- Another theme for an interesting debate could be the story *Jack and the beanstalk.* In this story a poor boy, called Jack, is generally considered as the positive character and the giant is "the bad guy". HOWEVER, Jack is the one who invades another person's house (giant or not giant, it doesn't matter), steals precious things from this house (three times!) and finally kills the giant. Is still Jack a positive character? Think again!

Teamwork

Get ready

Buy pipe insulation and cut in half each tube (there is a thin line that will help you do that). Then, count the number of participants and make sure you cut every tube in 3 or 4, so that you have one for each participant. You also need a plum, nut or another round fruit.

Go!

Work in teams of at least 8 students. Show them the tubes and ask them what they think they are used for. Tell them about pipe insulation and explain the benefits. Then say that they will use these half-tubes in a team to carry the plum from the starting point to the finish line (which is set much further than the length of all the tubes put one after the other). No other help is given, as it is the students who should discuss the proper strategy. Note that the students must hold the tubes and cannot run and walk while the plum is going through the tube.

They will soon notice that they need to incline the tube for the plum to roll. If the inclination is too big, the speed of the plum is too high. If the angle of inclination is too low, the plum does not roll at all. Next, the tubes need to be connected in such a way as the plum does not

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 30 min.

AIM:
To offer parents an experience of experiential and outdoor learning; bonding.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Sticks, sleeping mask or a scarf, 2 buckets, rocks.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

fall. Sometimes groups realize that if the put the next tube under the previous one, there is less chance to lose the plum. Other times, they find different solutions. It will take some time for the group to realize that each child should run at the end of the line once the plum passed. Anyway, try not to help but, when they get stuck with the same strategy, urge them to stop and discuss problems and solutions.

Look back!

At the end, make a circle and discuss how they worked as a team. "What happened when one of them kept making the same mistake? Did the group work as a team helping him/ her to find a solution? What ensured success? How did they react to the different ideas?" Discuss any other issues you notice, emphasizing what do we need in order to work well in a team.

Follow up!

- Play this game with parents. Tell them that the plum is like the "child" and we all must coordinate and cooperate in order to help him/ her move forward. Now add a nut, a walnut or other round thing on the track. These could represent the other tasks that parents may have (jobs, house chores, other children). What do we need to coordinate and balance all of them?

The maze

Get ready

This is an activity that we did on a parent-child workshop, but you can do it only with children or even on a teacher-training. It combines experiential education and the use of natural elements in an outdoor context. Collect longer and shorter sticks from the forest. Create a maze with them. It should have an entry point but it can have multiple exit points to make it more interesting. Choose a rather flat area to create the maze on. Also, prepare the other necessary materials.

Go!

Work with small groups of parents and children. Ask them to observe the maze designed with sticks. Let the group identify the starting and finish points. They will form parent-child pairs.

Game 1: the child is blindfolded. He/ She will go through the maze and on the way, pick 2-3 rocks placed on the sides of the maze and place them in a bucket. We used recycled yoghurt buckets. The parent will guide the child using a system of tactile signals. Before venturing in the maze, let each pair discuss their system of signalling. (They should realize that they need signs for "go forward, stop,

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 30 min.

AIM:
To offer parents an experience of experiential and outdoor learning; bonding.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Sticks, sleeping mask or a scarf, 2 buckets, rocks.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

bend, pick stone, on the left, on the right, back".) If the child steps out of the maze, the pair will go back to the starting point. The whole group should keep completely silent when a pair is in the maze. Let each pair enjoy the maze.

Look back!

Make a circle and discuss the experience. "How did you feel to go blindfolded through the maze? Did you trust your guide? Did you feel any fear? Was the system of signs that you discussed in the first place enough and efficient?" Compare how mothers guide their children versus dads. (You will notice that moms tend to be more protective). "What does the maze stand for? Who can see the whole maze and the where and how should the pair arrive? Can you compare this to school experience where the teacher knows the path and guides the students through gentle guidance? What could the rocks stand for? (maybe knowledge, joyful moments, difficulties etc.) On the other hand, what were the materials used? What were the benefits of this activity? "

Follow up!

- Game 2: the parent is blindfolded. He/ She will go through the maze guided by the child who will give verbal instructions (stop, go forwards / backwards / turn right/ left). The parent can pick rocks and put them in a basket (like in game no. 1) or you can keep it simple by just asking them to go through the maze. Cheer when a parent reaches the finish point. How is the experience different from the first game?

The power of more

Get ready

We suggest doing this activity in a season when the grass is tall. You need a strong hand to cut long blades of grass, as long as your arm. Place two lines of grass of about 20m opposite each other. In each line, lay the grass so that the next bunch always starts from the middle of the previous one.

Go!

Invite the children to take a blade of grass! Is it easy or difficult to break? Now, point to the lines of grass. Ask the children to form four teams, each of them kneeling down and facing each other on the two sides of the lines of grass. The teams on the left should twist and turn the grass inside, always overlapping and incorporating the next strand of grass until you get to the end of the lines. By now, you should get something like two long pieces of rope. It is hard work but it is worth it! Now ask a strong person to hold one end of each of the two lines continue turning clockwise and twisting until it turns into a rope. It is quite a lot of fun because you and the children will have to go under or over one of the lines of grass.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 90 min.

AIM:
To understand that many people working together, achieve more

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Tool to cut the grass, helmet

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Now, fold the rope into two, twist again to make it even thicker and then, hang it above a place where the children can swing.

Take safety measures such as helmets and an adult who helps the child to hold on to the grass and pull on the rope left and right. Now it is time for the little monkeys to swing! They might find it a little scary and difficult at first to hold on to the rope of grass, but in a short while, they will love it!

Look back!

Once all the children had enough fun, sit down and talk. "What did you think about the blade of grass at the beginning? What do you think now about the blade of grass? Where does the power come from? How can we achieve more if we are many? Can you give examples of the benefits of working together? in class/ in our country/ in Europe? Follow up: use the rope for a tug-of-wars.

Spirituality

Spirituality preschool and primary school activities:

- The creation of world and man
- Lead my way
- Sukkoth
- Wise man and foolish man
- Joy to the world
- Goat willow twigs
- The seed
- The tale of the tree trees
- The fig tree
- Hush, hush... quiet, please!
- Meet my friend
- Watch out... here is the wolf!
- Natural versus artificial
- Gender violence
- A colourful world

The creation of world and man

Get ready

The Bulgarian legend "God made the world" says that once upon a time, before man was created by God, herbs were common grass, beautiful and fragrant but they had no healing properties, because man did not have to suffer from diseases, since he was always healthy and strong. However, the envious devil came and started his attacks. The man's weaknesses remained forever, and he became vulnerable to diseases. The wounds and diseases could all be healed in an instant if a God's herb could be found.

Go!

Begin with a presentation of the Biblical story of the Creation of the world. The Bible is shown to the children, the concepts of the Old and New Testaments are specified, the works of God are described by days, the arrangement of the space of God is commented.

Next, read the Bulgarian legend "God made the world". Each student receives a worksheet containing a part of the legend. They read the text and answer in writing 9 questions related to the text. The tenth

CURRICULAR LINKS:

AGE GROUP: 9+

TIME: 40 min.

AIM:
Be aware of the biblical story of the creation of the world, of the creative days of God, of the Garden of Eden, of good and evil, of Heaven and Earth; realize our responsibility for nature protection as a gift from God; enrich students' vocabulary with new concepts.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Bible, Bulgarian legend "God made the world", cards with herbs and information

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

question is about editing misspellings on a text for a particular herb.

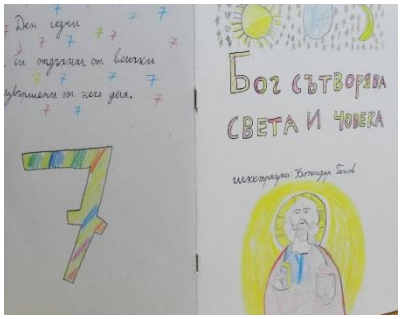
To reinforce knowledge on the herbs, students can play the game "What Do Herbs Tell?" (cards with colorful images of herbs on one side and important information about each on the other side). A child picks up a card, names the herb and reads the information on the back about: the spreading of the herb in Bulgaria, the application of the herb, rrecommendations for use. The game can be played in the classroom or in the yard.

Look back!

At the end students discuss what they have learned about the use of herbs and they can give recommendations how to stay healthy.

Follow up!

- Students can make a book on the story of Creation like the one below:



Lead my way!

Get ready

For this lesson, you need to look for an area out in nature that is not completely flat nor is too steep. A forest will do, too, if the trees are not too close to each other and there are not too many wild berry bushes. You may also want to sweep the area of the big branches.

Go!

In order for this activity to work at its best, work in groups of 6-8 children (even numbers are quite important). Sit with the children in a quiet area. You could begin with a mindfulness exercise to restore their attention to the present moment. Start asking them to look around, listen, smell and touch the things around them. Now, make pairs of kids who will be walking holding hands. One of them will walk with his/her eyes closed or blindfolded and the other will be the guide. Ask the guides not to talk but to be very attentive to the trail and anticipate every possible accident. For instance, if they see that the child that doesn't see is heading towards a tree, smoothly help him avoid the collision. Tell the children that after 5 minutes, they will hear you hitting two sticks

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 30 min.

AIM:
Understand that Creator has his way and should let him drive us through our lives; enhance the children's confidence in each other; develop, gross motor skills.

CLASS ORGANIZATION:
Small groups and pairs

SUPPLIES:
Scarves or blindfolds.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

together 10 times and this is a sign that they will take turns and repeat the same actions for another 5 minutes.

While this exercise is taking place, the teacher should be very attentive to prevent any accidents. After that, the entire group meet together to exchange opinions about how they felt while they were walking with closed eyes. "What was it like not to see the path? How did you feel? What did you hear? Did you notice something different with your eyes closed? Did you pay more attention to what you felt (the hand of the partner, the sun on the face)? How was the forest floor? Was it always flat and smooth? How did you feel when the floor was too steep? Did you trust your partner? How did you feel to put all your safety in his/her hands?"

Look back!

Next, wait several second and create a moment of silence! Tell them that our guide in life is the Creator. In life, we are blind, and He gently takes our hands and leads us. We may find that the path is sometimes difficult, but He knows better and maybe those experiences make us stronger. We should trust our Creator, just like we trusted our partners, because He is the one that can see ahead.

Note:

- This lesson is a mash-up of two activities run by two different partners but with overlapping methodology.

Follow up!

- If you start from indoors, to create a nice atmosphere to get them ready and relaxed to do this activity, we could play one of these "nature sounds" available on YouTube if the activity takes place in the classroom.
  https://www.youtube.com/watch?v=eKFTSSKCzWA.

Sukkoth

Get ready

Sukkoth is a Hebrew word that means "hut" or "booth". It is also the name of a festival that takes place about the middle of September when the harvest takes place. The festival is characterized by the erection of huts made of branches and by the gathering of four species of plants, with prayers of thanksgiving to God for the fruitfulness of the land.

In preparation take the children on a walk carrying their rucksacks on their backs and pretend that you are stopping to make camp several times. Ask the children what they would need to be able to spend the night there. They will probably tell you a tent, a bed, a house. But you don't have a tent with you. Tell them the story of the Israelites who had to live in a desert for 40 years, constantly moving around. They didn't have tents either!

Go!

Let's pretend that we are Israelites who are spending the night here. Let's split into teams or families and build a hut for all our family to spend the night.

CURRICULAR LINKS:

AGE GROUP: 8+

TIME: 50 min.

AIM:
Students understand the importance of remembering the past and thanksgiving for the many good things in their life.
They will also experiment building huts in nature.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Soft toys, branches, blanket, tarp.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Give each group of children a medium size soft toy to build a hut for. Make sure that the children know the boundries of the place where they can gather their branches. Each hut needs to have a covering. They may use a blanket, or a tarp, They may use rope to tie the branches together. Let them use their creativity in building a hut.

Look back!

After about 20 minutes let them present their huts to the rest of the groups. Sit down in a circle and compare the hut to their home. Which is better and why? Ask the children to give thanks for one or more comforts they are blessed with in their home.

Follow up!

- For older children have them build a hut for themselves and give them more time.
- Talk about some specific religious festivals from your area and what makes them special.

Wise man and foolish man

Get ready

In preparation find an outdoor place that will have some big rocks, and a flat, sandy spot. A park or a school yard will probably accomodate both settings. Split the children in teams who will work together to build a house. Some teams are told to make sure to build their houses on top of big rocks while the others are told to build their houses on the sandy spot.

Go!

Alow the children about 20 minutes to gather their supplies and build their houses. Call everyone back and sit in a circle. Share the parable of the wise and the foolish man from the Gospel of Matthew chapter 7 verses 24-27. "*Therefore everyone who hears these words of mine and puts them into practice is like a wise man who built his house on the rock. The rain came down, the streams rose, and the winds blew and beat against that house; yet it did not fall, because it had its foundation on the rock. But everyone who hears these words of mine and does not put them into practice is like a foolish man who built his house on sand. The rain came down,*

CURRICULAR LINKS:

AGE GROUP: 8+

TIME: 50 min.

AIM:
Students understand the importance of having a good foundation in life and what really matters.
They will also experiment building houses on different foundations

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Rocks, sand, branches, leaves, bucket of water.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

the streams rose, and the winds blew and beat against that house, and it fell with a great crash."

Now it is time to test if what we are told here is true. Take a big bucket of water and pour it on the groud like a surge of a river. The houses on the rock with survive being built on higher ground, while the houses built on the sand will collapse having no firm foundation.

Look back!

Call the children back in the circle. Ask them why is it good to do what you know is the truth ? Why does it matter to do what is right even if nobody is watching? Let them brainstorm on what are the most important and valuable things in their lives (family, education, faith, honesty). Show them how those are the foundation. They are the rock if you do not care for those then you are building on the sand.

Follow up!

- Make the connection to the 7 Habits of Happy Kids, habit 1 Being Proactive and habit 3: *Put First Things First*.

Joy to the world!

Get ready

The conditions necessary for the framework of the activity are checked and the learning context is ensured, by the initial verification of the space in which you carry out the activity, so that it is in accordance with the proposed objectives and with the materials previously prepared. The teacher asks the students some questions about the holidays that have passed: St. Andrew's, St. Nicholas.

Go!

Address the following questions to the students: "What is this? (children are shown a stone on which the star of Bethlehem is painted). Which important event does it remind us of? Which is the name of this big holiday coming up? What is his name?"

We let them know the title of the lesson and the 3 objectives of this activity, namely, know the story of Jesus' birth, discuss ways to celebrate Christmas and talk about traditions and customs related to this holiday.

The teacher tells the children the story of Jesus' birth, with the help of the storytelling stones. At the end of the reading, make a question-and-answer session explaining to the

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 40 min.

AIM:
The story of the events that took place on the occasion of the Birth of the Jesus; Identifying ways to celebrate Christmas; Enumeration of Romanian traditions and customs.

CLASS ORGANIZATION:
Groups, whole class, individual

SUPPLIES:
Stones painted with Christmas scenes and characters.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

children the importance of this holiday. Students are also asked to tell the story with the help of the painted stones and the previous discussions.

Look back!

It is advisable for the teacher to avoid offering ready-made answers, but rather to guide them through questions, which will help them discover ways to celebrate, traditions and customs related to this important holiday, making the connection with real life "How to celebrate this great holiday? Do you receive carolers? Do you go to church? Do you do good deeds? How does your family celebrate this holiday? What special food do you cook with your family? Which are the best Christmas moments? And so on. At the end of the activity, conclusions and suggestions will be drawn.

Follow up!

- Study painters who use or have used religious themes as inspiration for their work.
- Depending on the age of the children, introduce more complex notions about the religious cult - Bible, New Testament, Old Testament, etc.

Goat willow twigs

Get ready

This activity took place near a goat willow and started spontaneously from the observation of the goat willow's male catkins at the beginning of spring. On the wet meadow students could also see snowdrops and purple crocuses.

Go!

It is a common practice to start investigation of a plant, with what the children have noticed, with that part of the plant which encouraged exploration. Teacher talks about the custom of using twigs of this tree during Easter celebration.

Sometimes we celebrate Easter in early spring rather than late spring. Only a few plants dare to face the cold weather and the snow. On Palm Sunday there is a beautiful custom to go to the church with a bouquet of flowers or green branches as a reminder of the Sunday in which Jesus was greeted at the entrance of Jerusalem with palm branches. In our country palm trees are not native trees. At the beginning of the spring, at Palm Sunday, Romanian people go to church with flowering goat willow twigs.

What does goat willow look like? Let's take a look and identify the main characteristics.

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 50 min

AIM:
Students connect this common tree with national Easter customs and traditions.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
A goat willow tree in early spring, some goat willow flowering twigs, magnifying glasses.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Encourage children to use as many descriptive words as possible.

The Goat willow is a small, scrub-forming tree. It has broad, round leaves, with bent, pointy tips and thick, silky hairs on their undersides. Its male catkins are silver-grey, roundish and turn yellow when ripe; its female catkins are green.

Catkins appear before the leaves, in the end of the winter. Male and female flowers grow on separate trees.

The pollination is provided by bees, willow flowers being the most important food source in early spring.

Look back!

For older students the teacher can introduce more information related to traditional uses of the willow.

In the past, willows were used to relieve pain associated with a headache or toothache. The painkiller known as aspirin is derived from *salicin*, a substance found in the bark of all *Salix* species.

Follow up!

- The willows are often associated with sadness and mourning. This activity can be continued before Easter reinforcing the connection between the Resurrection of Jesus and the rebirth of nature in early spring. For young students the impact of the Crucifixion could be hard to understand. Approaching the biblical facts from this perspective is more appropriate for their age and sensibility.
- See the activity *The Fig Tree.*

The seed

Get ready

In preparation of Easter read the verse 24 in the Gospel of John chapter 12:

I assure you and most solemnly say to you, unless a grain of wheat falls into the earth and dies, it remains alone [just one grain, never more]. But if it dies, it produces much grain and yields a harvest. (Amplified Bible (AMP).

Go!

Ask the children how many seeds come from the plant of dill? Do they know? Probably not… Many. But how does it all happen? Before Jesus went to the cross he was trying to help his friends understand that he must go so that more people would become his friends. They had a hard time understanding, so Jesus told them this story of the seeds. And for a while we will observe how this story takes place.

Give every child some tissues, some seeds (dill if you have, or any seeds you have available) and ask them to put a few in a little piece of tissue paper and then stuff them down the fingers of a plastic glove. Add a little bit of water and hang them on the window so they get plenty of light. Over the next few days observe how the seeds germinate and sprout

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 50 min.

AIM:
Students understand that Jesus had to die so that we can believe. In addition, they understand that when we die to ourselves and put our differences aside there is much more accomplished.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Seeds, transparent gloves, tissues, permanent markers.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

roots. When they have roots you should transplant them in flower pots. As the kids continue to take care of the plants they will see that the plants will reach maturity and make seeds. Move then plants outside so they can pollinate.

Look back!

Collect the seeds the plants have produced. Throughout the spring keep reminding the children that one seed alone produces very little fruit, but together they produce a lot of fruit. The same is true for them as they work together. Alone they can accomplish only so much, but together they can do so much more.

Follow up!

- Make the connection to the 7 Habits of Happy Kids, particularly to habit 6 Synergize. Children can learn from plants how to work together to get better results.

The tale of the three trees

Get ready

In preparation of Easter read the verse 24 in the Gospel of John chapter 12:

I assure you and most solemnly say to you, unless a grain of wheat falls into the earth and dies, it remains alone [just one grain, never more]. But if it dies, it produces much grain and yields a harvest. (Amplified Bible (AMP).

Go!

Ask the children if they think that trees have hopes and dreams? Do they wish to be something when they are cut? What about the kids? Do they have dreams and hopes of what they want to be when they grow up? What if that doesn't happen? What should they do then? Well this is the story of three trees that have had dreams that became true in an unexpected way.

Start by telling the children the story of the three trees. You can access it in the link below.

https://bible.org/illustration/story-three-trees

As you tell the story use natural elements to give the children an idea of what each would become.

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 50 min.

AIM:
Students understand that God has a plan for them and that it is good even if we cannot see it at the moment.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Tree bark, sticks, pine cones, acorns, string, glue, paper plates.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

After you finish the story have the kids take a paper plate, some natural elements, glue and string and create an image of the story that would help them retell it. While they are creating the image, reinforce the main ideas of the story.

Look back!

At the end have some of the children retell the story using their craft.

The point of the story is that even if we cannot see what God is doing right now, He always has a plan and it is for our good.

Follow up!

- Talk about what objects are made of wood.
- Make a connection to different jobs.

The fig tree

Get ready

There is a fig tree in our school yard. This plant does not usually grow in the temperate zone. Climate changes have produced the acclimatization of this plant in some areas of our country. Having daily contact with this tree, our students obviously wanted to investigate it and to discover more things about it. The fig tree can be observed in all seasons but the best period is when fruit are ripe.

Go!

The observation of the fig tree is guided by the teacher. She will be open to students' observations and questions adapting the course of the investigation to them. The new information is introduced gradually; new knowledge is built on previous one maximizing the results of the direct observation.

"Did you know that the fig tree is one of the first plants grown by man in orchards? Why do you think man decided to grow this plant?" The fig tree was indeed appreciated for his sweet, delicious and nourishing fruit, the wood was used for fire and to make

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 50 min.

AIM:
Investigate natural elements as symbols in the history of human civilization; practice the skills of scientific investigation and use the scientific vocabulary (key words) in the description of the natural element under observation.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Fig tree, fig fruit, fig leaves, magnifying glasses, papers and pencils, camera, The Fig Tree- ppt, computer, projector.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

households items. "Let's take a look at the fig from our courtyard. Did you know that the fig tree comes from Asia and now grows spontaneously in the Mediterranean area? This tree is a new arrival in our area. Until recently, the fig tree did not cope with the cold winters in our country. They needed special care during the cold season. In the last years cold winter days are less and less and the fig tree adapted to our climate and soil. Look at the fig tree and at the other trees and shrubs from our garden. Is the fig tree taller than the other trees? The fig tree in our country can grow up to 3-4 m. Our fig is more a shrub with 3 thin embedded logs.

Touch the trunk of the fig. How does it feel? The bark is fine or rough? What colour is the bark? Can you notice any patterns on the bark? Any special marks? Can we see the roots of the fig? Where are the roots? What do you think, how deep are they rooted in the soil? Can you describe the role of the roots for the plant? What about the role of the trunk? What about the leaves? What do they look like? Touch them on both sides. How do they feel? Fine, smooth, rough? Can you see any fruit? Where are the fruit? Have you ever tasted a fig? Is it sweet, sour or bitter? Small or big?

The ancient Egyptians called the fig the multipurpose fruit. The fruit were eaten fresh, dried or cooked. By fermentation an alcoholic beverage was obtain.

The fig tree is one of the plants mentioned in the Bible along with vines and olives. Adam and Eve, the first men made by God, cover their bodies with fig leaves. Also, the fig tree is a symbol of personal prosperity and well-being and it is called the tree of knowledge. In ancient times, people who had a fig tree near the house were considered wealthy. The root fixed the soil around, the crown offered them a shelter and food. The fruit and especially seeds symbolized knowledge and wisdom; an ignorant, unwise man was compared to a fruitless fig".

Look back!

At the end of the activity, children asked a series of questions which they understood that they would get answers by watching the fig tree during the next seasons: "Does our fig tree feel comfortable in our school yard? What do you think? How could we find out if the fig tree feels fine here? How could we help the tree to grow beautifully and to make many fruits? Does he need special protection in winter or has he adapted

to the cold season? What do the fig flowers look like? What can we do with the fruits of our fig tree? When do the fruits of the fig tree ripen?"

Follow up!

- Share some seasonal fruits with children. Investigate the fruits using all your senses. Analyze and describe: shape, color, size, delicacy of the fruit skin, inside of the fruit, consistency of the core, presence of seeds, taste etc. Compare figs with these fruits. Do figs resemble other fruits? How?
- Related activity: *Easter and the Willow Tree*.

Hush, hush... quiet, please!

Get ready

How can we help children learn about themselves, and be aware of their emotions? Sometimes teachers feel the need to create a quiet moment during a very busy school day. Going outside in the open air directly in contact with nature can facilitate us in offering the opportunity to our pupils to find quiet and peace during a lesson. To learn how to be one with nature we may consider looking at the religious experience of monasticism, studying how historically this experience has deeply influenced our European culture and affected human spiritual growth.

Go!

Step 1:

As a prerequisite ask children when at home to keep quiet for at least ten minutes, sitting alone in a comfortable position; they can also consider lying down, if they prefer.

Step 2:

Back in school, the next day, during circle time, children will tell their impressions and feelings about what they experienced in carrying out this task at home. Ask them

CURRICULAR LINKS:

AGE GROUP: 9+

TIME: 90 min.

AIM:
Develop listening and meditation skills, concentration skills, body perception, breathing awareness, emotional awareness, group identity reinforcement, self-esteem.

CLASS ORGANIZATION:
Class activity, group activity, and individual activity.

SUPPLIES:
Logs or mats to sit on during circle time.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

questions such as: "Was it difficult for you? Did you manage to be quiet for such a long time? Did someone disturb or help you in carrying out this task? If you managed to do it, how did you feel? Did you fall asleep? Did you think about anything in particular? Did you focus on a particular colour?" The teacher needs to take notes about all the answers. Allow at least 20 minutes for this phase, depending upon the number of children present in class. Do not force children to answer to all questions. Children should offer their comments spontaneously.

Step 3:

In the garden, invite all pupils to look for their favourite corner to sit and meditate; if necessary, the place can be changed. The pupils need to sit quietly, close their eyes and relax. Invite children to avoid looking around at their classmates during this exercise. (10 min. max.)

Step 4:

Back together sitting in a circle pupils tell how they felt during the ten minutes meditation time in nature. "Was it easier or harder, than the quiet time they had at home? What made it easier? What made it harder? Do they think

this exercise could help them concentrate for schoolwork, or calm down after an angry outburst?" (5 min max).

Look back!

Back in the classroom, the teacher suggests the pupils to write down what they experienced during the meditation exercises, comparing the one they had the first time at home and the second one in school.

Follow up!

- As a follow up activity to train your children to meditate, show them some easy breathing exercises. Inhale counting mentally up to 5, exhale counting up to 10. Inhale through your nose, exhale through your mouth; now inhale through your mouth, and exhale through your nose... etc.
- In small groups laying down with bellies up forming a circle positioning the children's heads in the center of the circle as to form a flower. The teacher invites children to feel one by one each part of their body, focusing on the breathing, and timing the inhaling and exhaling phase.
- The teacher can read the St. Benedict's rule, and ask children question such as: "Do you think you could eat in school in total silence? Would it be difficult? How could we train ourselves to do that?" Etc.

Meet my friend

Get ready

"Meet my friend" activity is meant for outdoor lessons. Activity can be used all year round. "Meet my friend" should have short instruction times. Tasks are relying on children's personal experience and knowledge of nature.

Children can work individually or in groups.

Go!

Children are invited to take a short walk in nature (on the school grounds or a park, near by forest). During this walk each of them must find something from the natural environment (nothing can be broken or take off from living organisms). The object can be found on the ground or on something else (for example, on a stump or on a log). Learners pretend that the natural element they chose is a "friend" (a cone can be and elf, a rock a bug, and so on). They will hide their finds from the rest of the group. After a while, each player is given the opportunity to build a small house for his "friend." He should also give him/ her a name and figure out how he/she would take care of himself if he still remained in the natural environment.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 60 min.

AIM:
Focus on mental skill development, motivate children to take care of nature

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Natural elements that the children can find on their walk… leaves, rocks, sticks, acorns, chestnuts etc

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

When everyone is ready, each player presents to the others a house created by himself, and also introduces his "friend" to the rest of the group.

Look back!

In the end, have a final reflection on what kind of nature elements children found, what new nature elements they have learnt. Children can discuss the task and how they liked it, what was difficult/easy for them.

Follow up!

- Talk about how we should care for those who do not have homes. Bring to the children's attention the need for compassion for those who are homeless or poor and talk about ways we can help a real "friend" in need.

Watch out ... here is the wolf!

Get ready

In the European culture the wolf has always been a symbol of danger and of double-dealing. Classical literature is rich in fables presenting how fickle and mischievous the wolf is. Children will probably already know very well the famous tale: *The three little pigs*. As an introduction, teacher could consider reading some of Aesop's (*The Wolf and the lamb, The Wolf and the Crane*) or Pedro's (*The wolf and the seven little goats, Little Red Riding Hood*)
classical tales, and then discuss with children about how the wolf is presented in all these tales.

Go!

Step 1: In circle children are invited to tell all what they know about wolves and express their fears or general feelings about wolves. Some of the questions that could be asked are: "What do you know about wolves? Are you scared about these animals? Do you think they are bad? Have you ever seen a wolf? And if yes, where? Where do wolves live? And how do they live? What is the role of wolves in nature? Are wolves helpful in nature?"

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 90 min.

AIM:
Self-awareness, facing and overcoming fears; ability to summarize a story in a creative way; learning about wolves, learning about the life and story of St. Francis of Assisi.

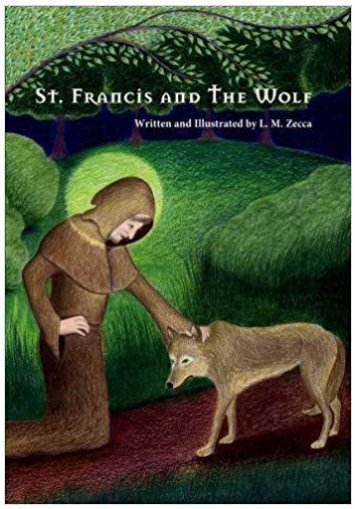
CLASS ORGANIZATION:
Whole class, group work and in pairs for the realization of puppets.

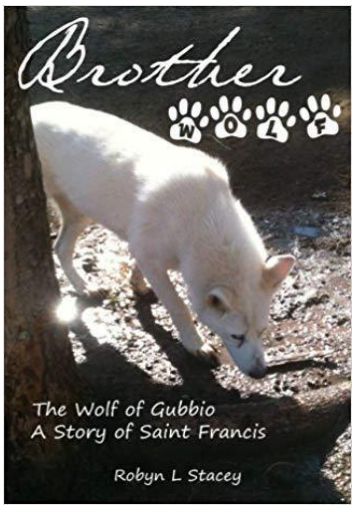
SUPPLIES:
Picture book, paper and cardboard, colours, puppet templates, split pins, shoe box cover, icicle wooden sticks.

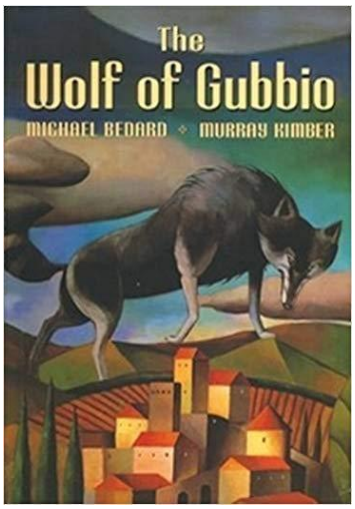
OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Step 2: The teacher tells the story of the Wolf of Gubbio, showing a nice picture book. Pick a book with nice pictures: L.M.Zecca, *St Francis and the Wolf*; Michael Bedard, *The Wolf of Gubbio* and Colony Elliott Santangelo: *Brother Wolf of Gubbio: A Legend Saint Francis.*



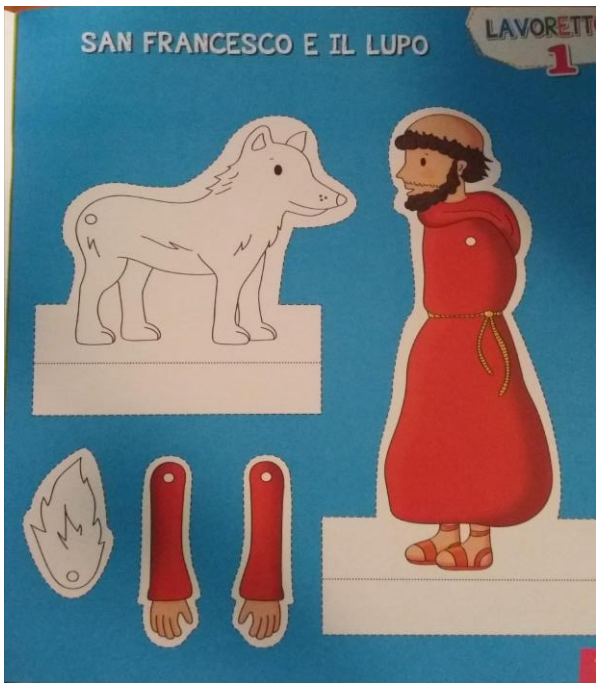




Step 3: Now, it is the turn of pupils, in groups of three or four, ask children to act out the story.

Step 4: Distribute the template of the characters of the story. In pairs pupils will colour and create the characters of the story, they can also decorate a shoebox cover that can be used as a little theatre stage.

Step 5: Each pair of students will practice acting out the story of the Wolf of Gubbio using the puppets they created.



Look back!

Sitting in circle children are invited to express what they liked of the story, and of the activity. "What is the role they enjoy most in acting out? Do they feel more comfortable in the role of the Wolf or of Saint Francis? Are there any aspects of the story that make them uncomfortable? Do they think that the story is realistic or not? What is the

real message that this story can teach us?"

Show this fresco to children: http://www.abbazie.com/sanfrancesco/gubbio_lupo_it.html

https://www.sanfrancescopatronoditalia.it/notizie/francescanesimo/laudato-si-per-frate-lupo-40226

Ask students what part of the story this painting exactly represents and what they think of the way the wolf is shown in this picture.

Finally, the teacher can invite children to draw the different parts of the story, put the drawings together to form a nice poster to hang on the class wall.

Follow up!

- For the teachers, this book is an interesting reading: Marc Rowlands, *The philosopher and the wolf*.
- Watch these YouTube videos for the Gubbio Wolf story:
  https://www.youtube.com/watch?v=sUhZI9F1W-8
  https://www.youtube.com/watch?v=fKoF4Xxi6vk

Natural versus artificial

Get ready

When we consider Nature Beauty, it is hard not to ask ourselves what the origin of such perfection could be. Unfortunately, most of our children have fewer opportunities to enjoy, observe, and appreciate nature today. Today pupils might not be used to contemplate, reflect, and wonder about the origins of natural beauty. It has become an important task of the school to offer this opportunity to children, so that in the future they will be able to protect and defend Earth natural environment whenever and wherever this might be threatened. The observation of natural beauties often leads to spiritual and religious reflections.

Who are we? Who created all this Beauty? And why was all natural beauty created? What is the relationship between Human beings, and their Natural surroundings? What does it mean to respect Nature? Was nature created so that human beings could dispose of it at any costs? Do human beings respect nature, or do they often destroy the beauty of nature? How can we protect nature?

With this activity, the teacher will help pupils to reflect about the differences between what was built by human beings, and all those natural elements that surround human beings, and were not created by them.

To carry out this activity you need to bring your

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 1st step: 20 min.; 2nd step: 30 min.; 3rd step: 45 min.

AIM:
Lexicon expansion, discrimination between natural and anthropic elements, reflection upon the origins of things, listening and communication skills, respect of different opinions, and religious beliefs.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Cardboard posters, scissors, markers, glue, a variety of magazines with several pictures

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

class outdoor to a school garden, or a public garden or park. Make sure the open-air environment offers both anthropic and natural elements that can be observed.

Go!

1st STEP: Being outdoor and sitting in a big circle, ask the children to take a walk around and inspect attentively the surrounding environment observing and memorising every single detail that they see below them, next to their feet, around their body, and above their head. Inform pupils that they have ten minutes for this activity, and then they will sit down, and report in detail what they have observed to their classmates. Invite the children to carry out this task silently and responsibly without disturbing their mates.

2nd STEP: While sitting in circle, the teacher puts a large poster divided in two parts in the middle of it. Children are invited to say whether they liked the task and what they have observed around them during the walk. Each observed detail is written down on the poster. Write the natural created element in the left hand column, and the human created elements in the right hand column. Let the children discover what is the criteria for choosing where to write each element on the poster.

Let the children make hypothesis about the criteria for listing the elements. Once all the children have related their observations ask some questions like: "Which are the elements of the left column? And which are the elements on the right column? Why do these elements differ and what do they have in common? What is the origin of the elements in the two different columns? Who created these elements?" During the discussion the children will understand the differences between what was naturally created, versus what was created by human beings using natural elements. One final question should in the end arise, which is WHO CREATED THE NATURAL ELEMENTS? Let the children freely discuss and make hypothesis to answer this question. Some children might suggest that nature was created by a Creator/God/Allah, others might insist that nature self-created itself, invite children to respect each other's opinion.

3rd STEP: Divide children in little groups of three to four, distribute scissors, some magazines, supermarket leaflets, and advertising catalogues. Invite children to cut all the pictures which illustrate natural, and artificial elements built by human beings. Prepare some big cardboard posters dividing them in two columns one for the Natural created elements, and one for the artificial, man-made elements. Each group will then, stick the pictures they have cut on the proper column. The teacher supervises the teams' work without correcting, let the children freely apply what they have understood and learned during the activity and the discussions.

Look back

When the cardboard posters are ready you can hang them on the classroom wall, each team can illustrate their poster and explain their choices.

Follow up!

- You can start a talk about different types of materials (natural vs artificial). Can we replace things made of plastic with objects made of natural materials?

Gender violence

Get ready

The teacher asks the children to go outside with their families and to come to the class with some leaves they found on the street, the forest, the schoolyard etc. The size, colour, or the quantity don't matter. The teacher talks about gender violence to the children watching videos adapted to their age. After that, we all talk about moments where the gender violence can be present, why this situation can happen and what the solution could be.

We have a couple of minutes to think about words that can be related with the topic, for example: peace, equality, freedom, women, rights…

Once they have had enough time to think about a few words we sit down in a circle to debate why they have chosen these words and what situations can be avoided. Tell them that the stones will choose its master.

All the children write the word and/or draw something on each leaf.

Go!

Each child, one by one, stands up from the circle and pastes the leaf on the tree that the teacher has made with cardboard previously for the activity. Everyone else will get a turn so, they must have patience. When they have

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 60 min.

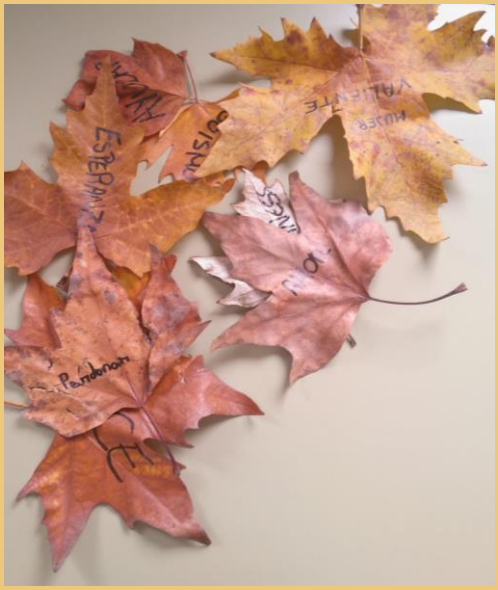
AIM:
Develop listening and speaking skills, empathy and expand vocabulary.

CLASS ORGANIZATION:
Small or large groups.

SUPPLIES:
Leaf (as many as they want), black markers or acrylic colours and cardboard.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:



finished pasting all the leaves, our tree against gender violence will be ready. It will be among us the maximum time in order to remind each of us why it is so important to stop the violence.

Look back!

Discuss the situation that violence has in our society. "What are the main problems caused by violence? What can they tell about the aggressor and the victim? Are they positive or negative problems? Where and when can the situation of violence take place? When events like this take place what solutions can we find?"

Follow up!

- Apart from writing a feeling or a word related to gender violence, we can also write women's names, places, actions to create our own story in which women are not mistreated.

A colourful world

Get ready

In nature, children can pick the signs of the beauty of Creation and can consider how great nature's Creator has operated. Interesting observations can be collected when asking children to name what is beautiful in nature, and who has possibly created each beautiful natural item. Some pupils may name God, Mohammed, or Mother Nature as creator. Teachers should welcome all answers. The main aim of this activity is to create awe, and respect for any natural elements presenting manual, funny, and creative activities using a variety of materials, and techniques. Inform the class that during this activity they will all have the chance to become the creator of some beautiful elements.

Go!

1st STEP: sitting in a circle outside, the teacher invites children to observe using their five senses colours, and shape of any natural elements such as: sky, flowers, grass, bark, leaves, dirt, earthworms, ladybugs, lizards.

2nd STEP: choose the season and consider the natural elements, realize one of the artefacts.

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 120 min.

AIM:
To develop a healthy respect for nature and be in awe of its beauty; develop fine motor skills, knowledge of colours, teamwork, encourage observation.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Scissors, glue, cardboards, coloured chalks, crayons, rice, pasta, orange peal, bark, leaves, scraps of fabric, paper plates, polystyrene, crepe paper, tempera, Bristol board.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

AUTUMN:

- Leaves: collect autumn leaves, place the leaves on the desk, put a white sheet on the leaves and reproduce them by rubbing colored chalks, or crayons.
- Trees: Collect some pieces of different bark fallen to the ground in the forest, using the technique of *frottage,* reproduce the bark of the tree. Put a white sheet on the bark and reproduce it rubbing colored crayons on the paper.

WINTER:

- Snow: On a black or blue cardboard design snowflakes with pieces of polystyrene, scrap of white fabric, rice, flour. In pairs, children stick different materials to form snowflakes.

SPRING:

- Flowers: prepare temperas of different colours (pink, yellow, orange, red), and split the oranges in two parts. In pair pupils dip split oranges in the prefered colour, and press the oranges using them as stamps on a green cardboard. This way, you will obtain a series of nice flowers.

SUMMER:

- Sun: On a Bristol cardboard draw the shape of a big sun. Each child will create a series of little balls using crape paper of different colors (yellow, red, orange and pink). Show children how they need to work with their fingertips to create these little balls. In turn each child will then, help sticking the little balls in the sun drawn on the Bristol board.

3RD STEP: CREATION OF SMALL ANIMALS, such as earthworms, tortoise, and little snails. Pick some of the animals named by the pupils during the initial conversation and invite children to observe the animal with all its physical details. Then, show how it is possible to create them with different materials.

Examples:

- For earthworms you need a recycled roll of paper, cut it to create a spiral, and colour it;
- Tortoise: small paper plates, this will be the tortoise shell, show how to draw concentric geometric shapes with magic markers, when the shell is completed, give the shape of the head, paws and tail drawn on piece of paper, colour them and stick them underneath the shell;
- Little snails, invite children to collect some very small stones, seashells, or snail shells which can easily be found in forest, and fields. Stick the seashells or snail shells on a big white cardboard, invite children to pick a yellow, red, orange or green paints and paint the head, neck, and tail of the snail. Make sure each snail has its two dark eyes.

Look back!

At the end of the project you can put together a corner with all the handmade elements, in the classroom. You can invite all the parents to admire the products of their children. Have fun!

Follow up!

- Teachers can speak about St Francis of Assisi introducing him as a friend of the nature, and the first protector of the beauty of the Earth. The story of the life of this XIIth century Saint can be read or shown on YouTube:
  - https://www.youtube.com/watch?v=qYynL7fH0P8
  - https://www.youtube.com/watch?v=fKoF4Xxi6vk
  - https://www.youtube.com/watch?v=gIFXMv9YJCU
- In science, you can invite the kids to observe with magnifying glass the little animals discovered in the grass and study their characteristics.

Technology

Technology preschool and primary school activities:

- Lavender satchels
- Life in a pot
- QR plant passport
- Emfie's boat
- Bird flight
- Nature's helicopters
- Let's make a parachute
- The power of clay
- Clay coat of arms
- Cinnamon baked apples
- Pancakes with acacia flowers
- Kids and knives don't go together
- Things I love
- New age hunting
- Perpectives
- Bird watching tech

Lavender satchels

Get ready

Lavender is an enchanting herb with a colourful history. It's name derives from the verb '*lavare*' to wash. This herb has been known, and used since ancient times. Egyptians, Phoenicians and Arabs made perfumes with these flowers and dipped burial shrouds. While Romans' put the flowers in their baths, Greek people used lavender which they called 'nardus' to cure people's aching backs, problems with sleep and insanity. This activity will help children to recognize this herb, and learn about its history and its numerous properties.

Go!

Lavender blooms during the summer months; you can admire its flowers from June to October. If possible, take the class to a garden or a field where they can observe this flower and enjoy their scent. Lavender bushes are very common in the whole Mediterranean areas, so it should not be hard to collect some bundles of lavender stems.

Bring the lavender bundles to school and invite children in groups to cut the part with the flowers. Organize groups of three to four children. Each group of children use their school scissors to cut the stem of the lavender flowers.

Once all the stems are off, show the children how to weigh the flowers and establish how many flowers are needed for each cotton bags (satchel). While one group of children will weigh the flowers

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 90 min.

AIM:
Develop observation, fine motor skills, concentration and cooperation skills.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Bundles of lavender stems, dried lavender flowers, rice, little cotton bags, rulers, one kitchen scale, ribbon, magic markers to decorate the cotton bags, cotton towels to cover the pupils' desks.

OUTDOOR/INDOOR:

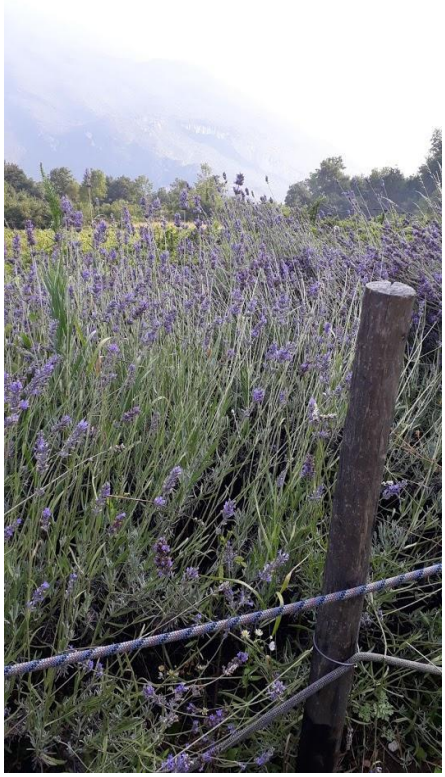
TEACHER/CHILD LED:

and prepare little bunches of them, the other groups will be busy decorating their cotton satchel with pencils and magic markers.

Once all the little cotton satchels are decorated, invite children to fill them up with the Lavender flowers, they can also add some rice to them, rice helps preserving the scent.

Look back!

Lavender oil is a great remedy for mosquito bites. Consider doing a research about all properties of this flower, and its oil. You can also invite your children to investigate about all the myths and legends connected to the magic powers of the lavender plant used by witches, fairies and goddesses.



Follow up!

- https://www.youtube.com/watch?v=wfo1EXYiC98
- https://lavandefarm.com/pages/lavenders-story
- Sing the song: Lavender's blue dilly, dilly…
- https://www.youtube.com/watch?v=ossC-8hhR8o

Life in a pot!

Get ready

Through this activity children will learn and see how a little seed grows into a plant, and how from a simple piece of clay it is possible to create a flower/plant pot. Start a conversation discussing with your class how it is possible, and what it is actually needed to create life. After listening to your pupils' suggestions for a while, finally ask them: "How do you think it is possible to have life from these little seeds?" "What do you think these seeds need to sprout?". Inform your pupils that it would be very nice to create a 'cradle' for all the little seeds you have and see if some plants will grow out of these seeds.

Go!

To help your pupils understand the procedure to make a clay pot, you might consider to show them this short video if your classroom is equipped with a digital smart board:

https://www.youtube.com/watch?reload=9&v=yn7oTvw8QRY

1st Step: Pick a fun and quick activity to pair up your pupils. Cut the clay using the metal wire, each child will receive a piece of clay. To start, show them how to obtain the pot

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 1st Step: 1 hour; 2nd Step: 1 hour; 3rd Step: 30 min.

AIM:
Fine motor skill development, creative use of natural elements; basic knowledge of plant lifecycle.

CLASS ORGANIZATION:
Individual and group activity

SUPPLIES:
Clay, topsoil, metal wire, wooden plates, rolling pins, skewer sticks, lace, buttons, ribbons etc.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

circular base: roll the clay to make a small ball, and then flatten it. Next, invite your pupils to split up in little balls the rest of the clay, roll each little ball until to obtain a coil, which will be attached around the circular base of the pot. Once all the coils are attached, the pot will have its walls. Make a whole at the centre of the pot circular base. Using a skewer stick each child can incise his name at the bottom of the pot. Cover all the pots that have been created with a plastic sheet to keep the clay humid. 2nd Step: Invite the children to decorate their pots applying recycling material, such as buttons, lace, ribbons etc. Then, all pots have to be baked in the proper clay oven. 3rd Step: Once the pots are ready all children divided in little groups can enjoy filling up the pots with topsoil and insert the little seeds you collected previously. Invite each child to take care of his/her own pot. Seeds need: light, water and daily encouragement to sprout!

Look back!

When the first sprouts will start to surface from the soil, children will get more and more excited and interested in the activity. Once all plants will have grown a bit, each child can take her living pot at home, and will be proud to show it to his/her parents.

Follow up!

- https://www.youtube.com/watch?reload=9&v=yn7oTvw8QRY Step, by step video that shows how to make a clay pot.
- This activity helps students understand the 'Colombian technique' which is how prehistoric people used to do their pottery in the Neolithic time.

QR plant passport

Get ready

Investigating indoor plants or the biodiversity from our own gardens, connecting with nature have become increasingly important and also a popular activity during COVID-19 restrictions.

There are lots of indoor plants in every home. Some of us have gardens with plants adapted to the local conditions. During a lock down an interesting project for the students was to create a QR plant passport for some of these plants.

Go!

Students fill in a worksheet with information about the needs of the plants they grow at home or in their garden (for one or several plants): the average temperature, sunlight, water, times of fertilization, flowering. The students will write these information on computer using a word processor like Microsoft Word or OpenOffice Ubuntu. Students can insert pictures, practicing the use of Picture Tools.

The next step, students go to a QR code generator on the internet, such as:

https://www.qr-code-generator.com/

CURRICULAR LINKS:

AGE GROUP: 8+

TIME: a week

AIM:
Investigate indoor plants or garden plants; use of digital programs and applications (Word, QR code generator)

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Worksheet about the needs of the plant, PC or laptop, i-pad/tablet/phone with QR code reader

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

and make a QR code with the information (either by uploading the word document or copying the information)

Ask the students to check the generated QR code with a phone or tablet, print out, cut and attach them next to the corresponding plant.

Invite your students to locate the countries of origin of these plants using a map (Google maps).

Write down the names of the countries and search for information on the internet about climate, geography and culture.

The teacher gathers all the QR passports and makes a digital book using Book creator. Here is a link to the book with the information researched and created by the students: https://read.bookcreator.com/jXT3o2z5n4gi4R8ldWzDWeh8Avv1/hhtR9YKfR9qnzek7y4vKaA

Look back!

Students discuss about their findings, share information and pictures about plants, compare data and decide new directions for the development of their investigations or collaborative projects.

Follow up!

- Students can make a paper passport of the plant using the information from the worksheet or from the Internet.
- Students take pictures or drawings of plants at home and make a poster or cards for a Memory game.
- Create and solve Maths problems and exercises. Practice measurements.
- Students make pots for plants from reusable materials. A contest like "The most interesting flower pot" is a real challenge!

Emfie's lifeboat

Get ready

Empfindlich (on short, Emfie) was a hamster. With the help of this amazing teacher assistant the 7 year old students discover the power of words but also interesting facts about different life forms and habitats.

Accompanying Emfie on his journey back home, the students are invited to solve a series of challenges. Here's one of them: Emfie must safely cross a pond. Can they do a lifeboat using these simple materials?

Go!

The simplest prototype is an origami boat crafted from a square cardboard. The next steps are finding a name for the boat and adding a little flag. The students are challenged to think at Emfie's safety. What other things can they add to this very simple boat in order to help Emfie? Remember, Emfie it is not used to spend time outdoors. He knows nothing about sun burns or rain. He knows nothing about wind. And so, the boat has acquired a small roof. In the second part of the activity boats were tested in the nearby stream. Students discover that cardboard boats are suitable only for short crossings.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 50 min.

AIM:
Students craft and test a boat using simple materials. Starting from the simplest model they design more complex prototypes which ensure the safety transportation on water

CLASS ORGANIZATION:
Small groups

SUPPLIES:
Cardboard, white and colored paper, scissors, glue or sticky tape, markers

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

After that they need to dry for some time.

In the last part of the activity, discovering some plastic and cardboard bottles and boxes by the stream, students start to think how they can reuse these items in order to craft even more safe boats for Emfie. The idea triggers a real debate among children. One side wants to find value for the garbage found on the banks of the stream, the other side wants to use strictly materials from nature: twigs, dried leaves, pine cones and string. Each group was asked to point out the advantages and disadvantages of using natural materials or waste. It was a good exercise inspired by our concern related to the health of the natural environment (School Outdoor Center).

Look back!

Working in groups students make lists with non-natural items usually found in nature (unfortunately!) and natural items which can be used to craft a safe means of transportation for our dear little friend.

Follow up!

- Starting from the list made at the end of this activity the students decided to make other means of water transportation using materials from nature or/and various recycled materials.

Bird flight

Get ready

During previous activities the children observed some birds in our area like sparrows, rock pigeons, seagulls, magpies, jays, crows, tits or wagtails.

In this activity, with the help of open questions, the teacher oriented the children's investigation towards certain aspects: the aerodynamic form of the birds' body, the arrangement and characteristics of the feathers, the characteristics of the different parts of the bird's body.

Go!

With the support of relevant pictures, students analyze the position of the bird's body, the position of the wings at different moments of its life: take off, landing on certain surfaces, catching prey, feeding. The birds glide, soar or flap. In order to do these, birds have:

- lightweight, smooth feathers which reduces the forces of weight and drag;
- a beak, instead of heavy, bony jaws and teeth – those reducing the force of weight;
- an enlarged breastbone called sternum for flight muscle attachment which helps with the force of thrust;

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 2x50 min.

AIM:
Describe the connections between the bird's body shape and flight. Build a model of a glider/ bird/plane.

CLASS ORGANIZATION:
Groups, whole class

SUPPLIES:
Cardboard, polystyrene trays, coloured papers, sticky tape, paper straws, scissors, laminated pictures that capture the bird's flight, pictures with gliders, paragliders and airplanes, toys

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

- light bones – a bird's bones are basically hollow with air sacs and thin, tiny cross pieces to make bones stronger – it is also reducing the force of weight;
- a streamlined body, the so-called aerodynamic shape - it's reducing the force of drag;
- wings – these enable the force of lift. The shape and the size of the wings are very important for the flight. During flight, the birds also vary the angle of the wings in order to increase or reduce forces.

Introduce some of these information taking into account the age of the children and their interest for the topic.

In the second part of activity, students try to mimic the flight of the birds. Ask them to move their arms as the birds flap their wings. Try to move all the joints. Make fast moves, smooth moves, elegant, some delicate moves like a ballerina in the "Swan Lake".

Ask them to change direction during "flight" (left, right), to put the wings in the right position for landing or take-off. Move fast forward, run for a while changing the direction and flapping the wings. What did they notice? Did they feel the air around their wings? Was it easy to fly?

The flight isn't an easy task. After flapping their arms a few times taking care to move all the joints of the arm the children will feel the tension in their arm's muscles.

The flight of the birds inspired the human flight. In the last part of the activity, the discussion is oriented towards the flight devices built by humans starting with the simplest ones: gliders, paragliders. Some good pictures are also helpful. Starting from their observations and using scrap paper, cardboard, polystyrene trays, paper straws and sticky tape, students craft bird models or glider/plane models.

Look back!

Encourage your students to test the functionality of the models and to improve the prototype based on observations.

Watch with your students short video files with birds flying, gliders, airplanes.

Add a special touch to these activities with fragments from Swan Lake (Tchaikovsky) or The Swan (Saint Saens).

Follow up!

- See related activities like *What makes a bird, a bird, Eggs in bird nests* or *Birdwatching tech*
- Make an online book on bird flight using relevant pictures, videos of bird's eye view and zooming on bird feathers.

Nature's helicopters

Get ready

This activity was inspired by *Perseverance*, Mars rover and its little brother, *Ingenuity,* the helicopter. My students were involved in *Mission to Mars Student Challenge* and, as future space explorers, tested many space related activities with great enthusiasm. Also, during our science activities they investigated plants' life cycles and discovered the dispersion of the seeds by the wind.

Go!

The propeller is nature's invention. The human beings observe, copy, built, test, improve and make use of it in many different ways.

Step 1. Observe the flight of different seeds like maple seed or dandelion seed. Discuss with your students about this method by which plants disperse their seeds with the help of the wind.

Step 2. Discuss with your students about the use of the propeller in our daily life. The helicopter is the best known example but it is not the only one. Challenge them to find information about other uses of the propeller in everyday life (airplane, motorboat, fan, windmill, air conditioner, computer, laptop).

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 50 min.

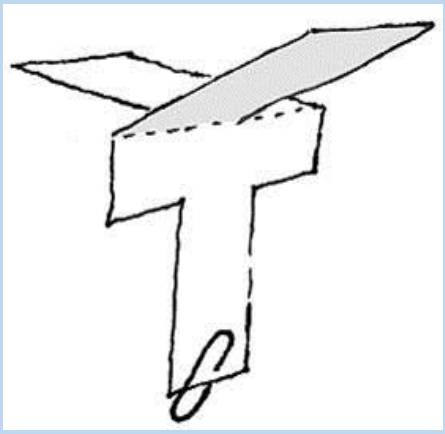
AIM:
Design and test a simple propeller model starting from observing the dispersal of the plants' seeds.

CLASS ORGANIZATION:
Groups, whole class, individual work

SUPPLIES:
Maple seeds, dandelion seeds, magnifying glasses, cardboard, paper, scissors, paper clip, pencil, sticky tape

OUTDOOR/INDOOR:

TEACHER/CHILD LED:



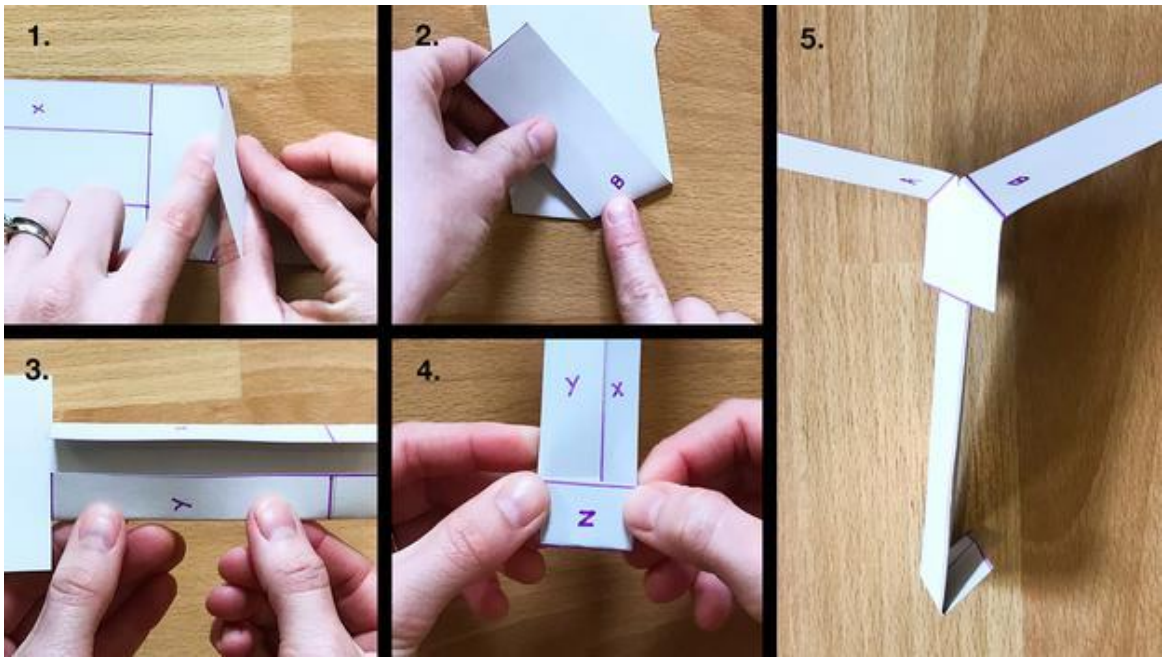
You could also watch a video file with *Ingenuity- the Mars helicopter*- the first flight of a helicopter on another planet!

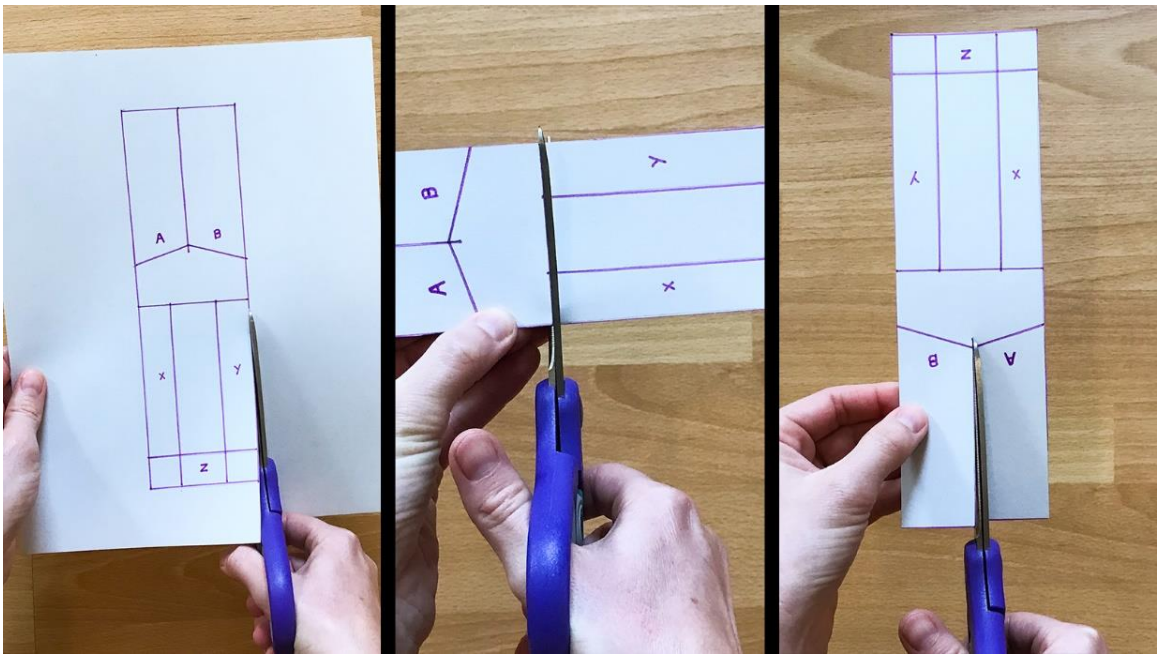
Step 3. Students make a helicopter/ propeller from paper, following the instructions and test it. See the last image.

Look back!

The first flight of *Ingenuity* (and the next ones) was watched with great emotion by the students. The interest in space exploration activities has increased significantly, acquiring a very strong emotional side.

My students showed interest in making other prototypes of flying devices. They wanted to make gliders, airplanes, rockets or helicopters using primarily reusable materials.





Educator Guide: Make a Paper Mars Helicopter | NASA/JPL Edu

Follow up!

- Build different paper helicopters changing one variable at a time: different paper, longer or thicker blades, longer leg, heavier/ lighter toy. Test and improve the prototype.
- See the other activities inspired by flight: *Let's make a parachute*, *Mathematics applied in parachutes*, *Bird flight*.

Let's make a parachute

Get ready

It is a simple toy. This activity started from a child's observation of a grocery bio bag, full of air. "It looks like a hot air balloon!" He spent some time playing with the "balloon" running here and there. At some point he dropped the bag from his hand and it floated gently towards the ground.

Making a parachute is a terrific way to engage students in the process of observation, prototyping, and design.

Have you ever seen a dandelion seed falling slightly towards the ground? The dandelion seed has a round fuzzy canopy that allows it to float in a gentle breeze. This seed has three parts: a fluffy top called a pappus that acts like a "parachute", a stem and the "real" seed. When the dandelion seeds are spread by the wind, the pappus catches the air and allows them to float. The weight of the seed counterbalances the pappus, keeping it in position with the pappus at the top. Parachutes were inspired by this dance of the seeds in the air. Parachutes are used to slow objects as they fall from heights: people, aircrafts, and space shuttles.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 50 min.

AIM:
Design and test a parachute; observe forces and motion in action.

CLASS ORGANIZATION:
Groups, whole class, individual work

SUPPLIES:
Bio bags for groceries or tissues, sticky tape, scissors, string, small and lightweight toys, acorns, chestnuts, small cones, corks.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Go!

We will design a parachute that uses the same idea: a wide and light top that can harness air and a weighted bottom that will keep the parachute from tipping over. We will be prototyping our design and conducting some tests to determine the best design.
Parachute instruction:

1. Cut a 25cmX25cm square piece of tissue paper or bio grocery bag. You can also try other lightweight materials.
2. Cut four equal lengths of string, (30-40cm long)
3. Tape one piece of string in each corner of the tissue paper. Use sticky tape or scotch tape
4. Fold the parachute and gather the strings. You can tie the four strings through a paper clip and knot or you can simply fix the knot on a small and lightweight toy with a piece of sticky tape.
5. Test your parachute: open up the parachute and grasp it by the center point. Make sure the canopy can easily open up. Raise your arm as high as you can and drop the parachute. Watch it float to the ground.

The science behind the parachute consists of forces: force of gravity, force of drag (air resistance) and force of friction. Gravity is the force that is pulling the parachute towards the ground. Drag is the force that resists an object's motion through fluids like gases or air. That's why we call it air resistance. Drag is depending by surface area and speed. When an object falls we can increase surface area by creating something similar with the dandelion seed's canopy- a parachute. Friction is the force that is causing the parachute to slow down. Friction is a rubbing force between two objects; in this case it is the rubbing force between air and the parachute that moves through it.

Look back!

Outdoor, our students used acorns and pebbles as counterweight (parachute toy). They immediately noticed that the parachutes with pebbles flew for a much shorter time than those with acorns. Prototyping is the process by which engineers build many models or samples of a product to test design variables. In this activity our students

test this variable- the weight of the parachute toy. Also, they tried to throw up the folded parachute as high as they could and observed it float toward the ground. In fact, they put to work two concepts of physics: free fall and vertical upwards throw.

Follow up!

- Our first parachutes were designed as prototypes for Santa's elves. Delivery of Christmas gifts with the help of small parachutes would be of great help for an elderly and overworked Santa.
- Also see the *Mathematics applied in parachute testing*
- Another activity, related to the flight inspired by nature, that may interest students, is *Bird flight*.
- What other materials can be used for parachute's veil? What characteristics should these materials have? Test different materials/fabrics.
- Investigate the importance of the use of parachutes in the landing of the space crafts. See *Perseverance's* landing on Mars- 18th February 2021.

The power of clay

Get ready

Please take some time to observe children playing with clay. They become silent, focused, connected. This is the power of the clay: to awake something buried deep inside us, something that is there since the early days of humanity.

Clay is good for our children! In addition to developing their motor skills and creativity, clay contains bacteria that boosts their immune systems and it is also an outlet for emotions. So, let's get dirty!

Go!

These are some of the ways that we used clay during the Erasmus+ program:

1. Children used clay regularly for modelling. Different units or themes require the acquisition of certain vocabulary. When children describe what they have created they use the new vocabulary in context. For example, in order to practice body parts in English, a group of preschoolers modelled their own aliens and described them naturally blending names of body parts, numbers and adjectives. One of the girl aliens even carried an umbrella!

CURRICULAR LINKS:

AGE GROUP: 2+

TIME: 15 - 50 min.

AIM:
Creative use of clay; develop imagination and individual artistic expression.

CLASS ORGANIZATION:
Individual/ group/ whole class

SUPPLIES:
Clay, pottery wheel, wire, pencils, other natural materials etc.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

2. We used terracotta and white clay to personalize trees with faces. The trees got not only a personality but also a life story to go with it.

3. We also used clay to make different prints. The soft material of the clay makes patterns very visible to the naked eye. This preschool class, for instance, used the prints of shells to point out that every action has an effect and depends on each of us to decide what is the "print" that we leave on Earth.

4. We invited a local pottery artist, our area being famous for the beautiful decorative motifs made on plates and jars. The artist told the children how the clay is made and described the local decorative design elements used on the pottery. For example, one of the traditional images is that of the rooster. It symbolizes the victory of daylight over the darkness of the night, as well as resurrection and the defeat of the evil forces. People also began to draw snakes, which were seen as positive elements, because they prevented houses and cereal barns from pest infestation. Other traditional elements include: the tree of life, the Sun, the spiral or the fish.

The students made bowls and plates on the pottery wheel, decorated these with local elements and took pictures of the plates in a chosen décor.

Look back!

Whatever your activity is, take a moment to discuss with the children about the power of clay: "What does it smell like? What does it feel like? How does the skin on my hands feel after working with clay? How does it feel to create something beautiful/ something useful/ something that represents me but has a life of its own? What is the science of clay? How is clay ART?" Warning: clay can be quite addictive and you can fall hopelessly in love with it! :)

Follow up!

- Investigate different types of clay, terracotta or modelling mixtures(playdough).
- Investigate the drying process of objects made of clay or terracotta.
- You can see our school's online exhibition of clay exhibits if you access the following link: https://sites.google.com/view/the-shape-of-nature/home/clay

Clay coat of arms

Get ready

Exploring the world of *Coat of arms*, and the mysterious meaning of their symbols can be quite an exciting enterprise to undertake with your class.

Students and teacher run a research about Coat of Arms with their different basic templates, and their symbols. We suggest focussing on the symbolic meaning of animals such as: lion, eagle, sheep, bull, horse, rabbit, bear, snake, dog, butterfly, owl, dove, rooster etc. Your children will enjoy drawing their own coat of arms. If your town or region has a coat of arms, it is a good idea to include it as an example for students to observe it and reproduce it. You can also include coat of arms of famous historic families of your area.

Another purpose of this activity is to introduce children to clay, and its characteristics: its plasticity when it is mixed with the right amount of water, and how when dried and baked clay magically transforms itself into ceramic.

Observing how children react, when they get their hands wet and dirty with clay, can help teachers acquire a better knowledge of their pupils' characters and talents. Children experience working with clay while modelling a clay coat of arms of their town, region, or of

CURRICULAR LINKS:

AGE GROUP: 8+

TIME: 90 min.

AIM:
Develop sensory fine motor skills, self-esteem, self-expression, ability to cooperate, task sharing during teamwork.

CLASS ORGANIZATION:
Individual and small groups

SUPPLIES:
Clay, rolling pin, tracing paper, several copies of different coat of arms (choose easy to reproduce and meaningful coat of arms), toothpicks/wood skewer, lace, paintbrush and water.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

old noble families. They could also choose to create their own family coat of arms.

Go!

To obtain a clay coat of arms follow these steps:

Shield

Step 1: each child receives a piece of clay and spreads it to form a rectangular shape.

Step 2: lay a lace piece of material over the rectangular shape, roll a pin over it, so to obtain a nice background decoration on the shield.

Coat of Arms symbols:

Step 1: each child chooses the kind of coat of arms s/he wishes to reproduce among the ones presented by the teacher. Children can decide to create their own coat of arm. While drawing the coat of arms, they observe the main elements: two side supporters, usually animals such as lions, or dogs; main field, with its background and main field; ribbon, which contains a family name and/or motto.

Step 2: pupils trace the chosen symbols with a black magic marker on tracing paper.

Step 3: on another piece of clay pupils model a rectangular shape of the same size, as the first one.

Step 4: children lay the tracing paper over the rectangular clay tablet, so that the magic marker drawing of the coat of arm will be in contact with the clay. In this way the black magic marker drawing is transferred on the clay tablet.

Step 5: using a toothpick, or a wood skewer, children trace the contour of the coat of arm, and remove the clay in excess, so they obtain the symbols they have chosen

modelled in clay.

Step 6: every single coat of arm element is then modelled and glued to the main rectangular tablet using a wet brush. Using the toothpick children can inscribed the motto on the ribbon on top, or at the bottom of the shield.

Step 7: When coat of arms are completed, they have to be baked in their proper ceramic kiln.

Look back!

When all coat of arms are ready, each child shows his/her clay tablet to their classmates illustrating the symbols, explaining the motto and the reasons of the choices made in creating the coat of arm. Finally, all coat of arms can be hanged on the classroom walls, or along the main school corridor with pictures illustrating the different phases of the project.

Follow up!

- To find some of the most common template for Coat of Arms and the meaning of symbolic animals check this site: https://app.formassembly.com/forms/view/10015

Cinnamon baked apples

Get ready

Chilly, end of the autumn morning. The frost has already bitten the plants around and a thin blanket of sparkling icicles covers the ground. The sun is shy and every word is marked with rolling vapours rushing out from our mouths and disappearing like ghosts. The cheerful fire offers a welcoming comfort, and children quietly approach the mesmerizing fireplace. The colours of the fire, the sound of the cracking wood and the smell of the apples are the ingredients of a magical morning.

One of the previous days, ask the children to take a walk in the forest and choose a straight stick as thick as the teacher's thumb and as long as one and a half of their arms. Each child should have one or two such sticks.

Then, in small groups, teach them how to sharpen the ends of these sticks. It is the best to work with special student outdoor knives which have a round end and a protection for the fingers. How to use knives and the special rules that apply you can read in the lesson *Kids and knives don't go together.* Once the sticks are sharpened, store them for the "Cinnamon baked apples" lesson.

You will also need apples (the medium,

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 50 min.

AIM:
Give a sense of well-being; understand and respect rules of using the fire; understand how fire changes materials.

CLASS ORGANIZATION:
Whole class, group and individual activity.

SUPPLIES:
Apples, sugar, cinnamon, wood matches, coal, dry grass, small sticks etc.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

crunchy, sweet and sour kind), sugar (preferably brown) and cinnamon powder. It is a good idea to peel the skin off the apples before the activity actually starts.

Go!

Make sure that the children know and respect the rules for the fireplace:

1. We only walk around the fireplace (make sure you make a fire within a well-protected area and not close to the forest)
2. Pay attention to clothing items that hang (scarf, lace, pendant, trinket) or loose hair. They can easily catch fire.
3. When approaching the fire, assume the fire-position (one foot and one knee down) which grants stability.
4. The fireplace must be constantly under adult supervision!

Get the children at a safe distance around the fireplace and ask them why they like the fire. Tell them 2-3 main benefits of fire and that it can change the materials, the food in our case. Also talk about flammability and explain once more the basic fire-safety rules. Show them the prepared materials and go around with the plates for them to taste and identify them. Ask the kids what they think will happen next. Mix the brown sugar and the cinnamon in one plate to be easier to handle.

I suggest that at this point, the class of children should be divided into smaller groups and from now on, work with no more than 5-8 children. One by one, help each child to squeeze the stick into the apple. Insert it up to about the middle of the apple not all the way through, because the apple can break easily. Help the child to roll the apple in the sugar-cinnamon mixture, to assume the fire position and show him/her how to hold the stick over the fire. In the meantime, the other children must be supervised by at least another adult. Do the same with the next 4 children. From time to time, roll the apple in the sugary mixture again. Ask the children to observe how the ingredients change under fire. There is no need to bake it for a long time, the children like the apples still crispy. When done, help each child get the apple off the stick and on a plate or you can just keep them on the stick like a lollypop. Let it cool a bit before eating.

Look back!

Once everybody is ready, ask the children what they liked about the experience.

Follow up!

- The recipe can be adapted to different tastes. Brown sugar can be replaced with vanilla powdered sugar or powdered chocolate.
- Try to roll thin dough on the stick then cover it in brown sugar and cinnamon. Cook for 5 min. Enjoy!

Pancakes with acacia flowers

Get ready

Grandma's recipe of pancakes with acacia flowers is really great! You can do it two ways: you can gather flowers in the morning and send them to school for the pancakes to be made and then sent back to the outdoor area to be eaten or you can gather them right before you leave and make the pancakes at school. Either way, it is best to use fresh flowers.

Acacia flowers attract many bees and wasps. Make sure that all measures for allergic people are in place.

Go!

Take the children to an area with acacia trees.

Step 1: Ask the children to feel and describe the tree (if the roots are visible or not, the height and colour of the bark, the compound leaves, spikes, bunches of flowers and the pods with the seeds).

Step 2: Sparkle the children's curiosity with more information about the tree:

-it is a pioneer tree which grows in rough conditions where no other trees dare to grow;

-because it is one of the first trees to grow in

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 30 min.

AIM:
Understand how nature is resource for main human activities like feeding, building, healing etc.

CLASS ORGANIZATION:
Individual and group activity

SUPPLIES:
Acacia flowers, pancake batter, acacia honey, paper plates, tissues.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

an area, it uses thorns to protect against herbivores;

-it fixes the ground with its intricate system of roots even when the soil is sandy;

-it is an invasive tree that endangers local specials and it grows very quickly;

-the flowers are used for dying the cotton yellow;

-the acacia flower honey is very appreciated and people use acacia flowers to make doughnuts and pancakes.

Step 3: Gather bunches of flowers and use the occasion to watch bees at work;

Step 4: Prepare the classical pancake batter. Once you poured or scooped the batter onto the pan, sprinkle flowers on top. Wash the flowers and shake off the additional water before you use them. Flip the pancake and let it cook as usual.

Step 5: Enjoy them! They are good as they are but if you like them extra sweet you can use a little acacia honey on top.

Look back!

Sit down with the children and talk about foraging. What other things growing in nature are edible in your area? Which are the poisonous plants that must not be eaten or even touched?

Follow up!

- Ask the children to search with their parents other interesting information about the acacia tree or other seasonal plants.
- Read the lesson *Sky gazing* to make flower constellations.

Kids and knives don't go together

Get ready

We, teachers, might belong to a generation when people thought that kids and sharp things like scissors or knives don't go together. However, in recent years, one can buy special scissors and knives that children can use in quite safe conditions. For example you can order via net special student outdoor knives which have a round end and a protection for the fingers.

Working with tools provides an authentic experience of whittling and cutting which makes children understand how things work. Children have a special fascination for knives and using them. Using knives, makes them feel mature and gives them a sense of fulfilment.

Go!

When working with tools, you need to make sure that you work with small groups of up to 3-4 students or even individually, if you can. Please adapt the knives to the age and abilities of the children. If the knives are new, their blade could be quite sharp and you might need to use them for a while till they are safe for children.

CURRICULAR LINKS:

AGE GROUP: 7+

TIME: 50 min.

AIM:
Understand and respect rules of using a knife; use knives in a proper and safe way.

CLASS ORGANIZATION:
Small groups and individual.

SUPPLIES:
Outdoor knives for children, gloves (optional)

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

Nevertheless, there is always the danger of bruises cuts and piercing. Children are very precious, and you want to provide them with a nice experience, so always put safety first. You need to take safety measures.

- First show them the knife (it is better if you have those knives with a plastic case for protection). Ask them if they ever handled one to see if any has cutting experience.
- Name the different parts of the knife and let the children describe them;
- Make a demonstration of how to use the knife properly and show one of the following three positions: 1. cut small pieces while placing the tip of the stick on a solid surface like a log; (this is a very good position for beginners) 2. sit down on a log and cut with the elbows on your knees or 3. One foot and one knee on the ground and the forearm of the hand that holds the wood leaning on the knee that is up.
- Cutting rules: always cut away from yourself, keep the fingers that hold the stick/ piece of wood away from the cutting point (you can even use a glove on the hand that is holding), always use your leading hand to cut, give it your FULL attention, carve for short periods of time then rest;
- Always put the knife in its protection before you hand it over to someone else.
- Always have some water and the first aid kit ready and available.

Once you introduced these basic rules, monitor each child individually. Only after they master the position and get confident with using the knife (this may take several classes), peel off or cut sharp tips to sticks. Later, you can try carving and whittling simple things like a key holder or a small toy.

Look back!

Please don't forget that you need to be comfortable with knifes and whittling yourself before introducing it to students. Once the lesson is over, you can sit in a circle and talk about how knives were used along human history. Repeat the basic rules for using them and warn children to use it only under the supervision of an adult.

Follow up!

- Use knife practice to talk about force, lever, friction and the resistance and toughness of different types of materials.

Things I love

Get ready

For this activity we used tablets and we wanted to showcase the use of these types of gadgets for educational purposes. However, phones can be used as well.

We started by introducing the tablets to the group of children. We presented the tablet and the protection case and we showed them how to hold it. Children over 5 who can use the tablet independently should be reminded that we only walk (and not run) with a gadget in our hands.

Go!

We divide the class in small groups, each led by and adult (teacher or volunteering parent). The children are encouraged to take a stroll, stop and take a photo of the things that they really like in nature. With every child we will repeat some of the basic rules: 1. We should stand in a position so that our favourite thing is in full natural light (not cast a shadow on the subject of the photo). 2. the subject should be in the middle area of the picture. 3. we should get down to take a good picture; 4. to take clear pictures we must focus the image on the object. Let the children decide which are the

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 30 min.

AIM:
Close observation of the natural environment, technological alpha-betization, introduction to nature photography.

CLASS ORGANIZATION:
Small groups, individually

SUPPLIES:
Tablets or I-pads, external battery if needed

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

things they want to photograph and also point out colours, shapes, textures.

Look back!

Ask the children if the task of taking photos made a difference in the way they saw the natural environment (maybe they saw things they wouldn't't have noticed otherwise, discovered new plants/ animals, ventured to new places in search of the best photo subject).

See if they can remember some of the rules for taking nature photos.

Follow up!

- Share this activity with the families and ask them to take a walk and make other photos of things they like, they could even make a digital album of the family's favourite things in nature.
- Make an exhibition of the best photos taken by the children in your group. This exhibition can be even made in a digital format like Google sites.

New age hunting

Get ready

Since prehistoric times when we were hunter-gatherers, humans have hunted for food or for pleasure. The new generation is invited to join another type of hunting, one that does not involve any harm: hunting with the tablet. This activity has other benefits, too: children learn how to take digital photos and how to use the tablet for educational purposes. It is also fun!

Gather in a circle and present useful information about the tablets: how to handle them safely, how to walk with them, how to take photos and how to open the photo gallery. You may want the children to take 1-2 photos to practice.

Explain that the objective is to hunt with the camera of the tablet and kids are successful if they can do it and respect 2-3 very important rules: 1. Handle the table with care; 2. Take turns to shoot photos; 3. Work as a team.

This is also a good opportunity to remember some basic rules when taking nature photos.

Go!

Now, it is time to introduce them the worksheet. The one that was used for this

CURRICULAR LINKS:

AGE GROUP: 5+

TIME: 30 min.

AIM:
Use technology for educational purposes;
Identify local elements of flora and fauna.

CLASS ORGANIZATION:
Whole class and pairs or groups of 3.

SUPPLIES:
Tablets, worksheets.

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

lesson is from an internet resource but you can make your own worksheet. You can introduce only plants and animals that can be spotted on place but you can also add items that cannot be found around. (For example, there were daffodils on our worksheet, which we couldn't spot at the Outdoor Centre, no matter how hard we tried to find them. However, we could talk about where daffodils can be found why this particular environment does not favour them and what kind of other flowers that are yellow can we found.)

Children should work in pairs or groups of three. Give the children enough time to hunt for the things and observe how they work as a pair/group. Encourage them to solve their technical problems by try and error or by asking other children to help. They should address you only after they tried the above and nothing worked.

Look back!

Gather in a circle and let the children show their photos and explain what the items that they found are. Ask them to identify the habitat or of the plant and animal. Discuss how this type of hunting is different from the traditional one and ask the children if they enjoyed the activity.

Follow up!

- Hunt for specific things like types of trees, medicinal plants, bugs or mushrooms to learn about local flora and fauna.

Perspectives

Get ready

Science can both widen our knowledge and make us better, more understanding people. Before starting this lesson, you need to ensure the connection between the laptop and the microscope, and place a rope on the ground in a winding way on a rather uneven surface. Show the students the supplies prepared and ask them what the subject of the lesson might be. Surprize, the lesson is about different perspectives!

Go!

First, show the winding rope on the ground. Ask the children to walk on it from one end to the other. Easy, right? Now, try the same thing by holding a mirror above your head and watching the rope through the mirror. Let them try one by one. Oh, this is a different story, it is not so easy anymore! What do we see thorough the mirror? (the same rope and our feet) What is different? We have a different way of viewing things. This is called perspective. Many times, our perspective of looking at things is different from other peoples'. The way children can see playing computer games is very different from their parents' point of view.

CURRICULAR LINKS:

AGE GROUP: 6+

TIME: 45 min.

AIM:
Understand what perspective and points of view mean, observe and comment plants and animals under microscope.

CLASS ORGANIZATION:
Groups.

SUPPLIES:
Digital microscope, laptop, rope, smaller mirrors (15/20cm)

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

During the second stage of the lesson, show the children the digital microscope and how to operate it. Then let them collect things from nature (bits of plants or animals that they can find around). Ask them to observe things with their eyes and then with the help of the microscope. They will surely marvel how different the world looks through the microscope. The laptop will help them get a larger image that they can discuss within their groups. Once they observed different things (this may take a while ☺), ask them to sit in a circle and discuss what they observed.

Look back!

How do things look different when you look though the mirror or though the microscope? In life, different people regard things and have different attitudes towards the same subject. Is one perspective better that the other? Sometimes we even argue with people over different points of view on the same subject when, in fact, we see exactly the same thing from different perspectives. Has something like this happened to you? What can you do to avoid conflict in these situations? What can you do to understand the other persons' point of view?

Follow up!

- This lesson was inspired by two different activities done during a training course in nature pedagogy (Inside-out-nature, Denmark, Outdoor Pedagogue, http://www.insideoutnature.com/training). Such training courses provide methodological support to run outdoor activities and plenty of practical examples on the way. Try a course in outdoor teaching!

Bird watching tech

Get ready

We have built a very long and caring relationship with the birds at our Outdoor Centre. We never scare them away, approach them with care to observe them and install bird feeders especially during winter. Birds have quickly understood that we mean no harm and they thrive, each year more and more species building their nests in our little forest.

We prepared this activity by bringing some bird snacks with seeds and peanut butter, which we hang in the trees early in the morning.

We gathered in a circle and listened: the birds were giving a concert. I showed the children some tools and gadgets and told them we are going to practice bird-watching. For a successful activity we need to respect 2 rules: ”Be as quiet and as still as possible” and ”Take turns when using the devices”.

Go!

Begin by asking the children which local birds they think they can spot. Then show them a local bird guide or some images of local birds that nest nearby. Point to the field marks

CURRICULAR LINKS:

AGE GROUP: 4+

TIME: 30 min.

AIM:
Introducing bird watching devices; identifying local birds.

CLASS ORGANIZATION:
Small groups of 3-4 children.

SUPPLIES:
Bird digital spotting scope, binoculars, tablet, bird feeders

OUTDOOR/INDOOR:

TEACHER/CHILD LED:

(specific coloration or marks that identify the bird species at a glance even when they are far away).

Then introduce them the binoculars and the digital spotting scope. Show them how to uncover and clean the lenses, how to handle it so that they can have a good image of the bird, how to make the image bigger, clearer and how to take a photo. Pre-schoolers are much happier with the spotting scope because it is much easier to see the image on the screen than through the binoculars.

You can also use a tablet or the phone to make videos of the bird and record the sound.

A basic rule when using tools and bird watching gadgets is to first spot the bird with your naked eyes and only then use binoculars or a bird spotting device. Sometimes we allure the birds by playing recordings of bird songs. They immediately come to check on the new visitor, giving us the opportunity to observe them.

Let the children explore with the devices, watch attentively how they take turns, and respect each other's time.

Look back!

At the end of the activity, gather in a circle and ask them if they remember the names and some basic rules of how to use the bird watching tech and tools. Select the best images and identify the birds in the field guide or in on the images. Talk about the birds that they liked the most, and how to protect the local bird population.

Follow up!

- You can introduce an observation notebook where the children draw, glue pictures and write down the date and the place where the bird was spotted.
- Invite a local birder or a zoologist to talk to the children about the local birds.

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