



# EXPERIENTIAL EDUCATION IN NATURE



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OUTDOOR EDUCATION is one of the many ways to diversify teaching methods and bring the child closer to the natural learning environment and everyday real life. The teacher's creative approach to teaching and learning activities and the ability to find various opportunities to acquire and consolidate knowledge on certain topics are important.

Outdoor education is learning in a real environment through hands-on experience, doing it yourself, and sharing what you have experienced with others. Outdoor learning is a supplement to the traditional way of teaching. This includes learning environments outside the premises, i.e. learning takes place in an open learning space. An open learning environment is characterised by the fact that the learning space simultaneously acts as a learning tool, and the experiences gained there lead to knowledge and skills. In an open learning space, the child and his active activities come first, leaving the teacher in a leading and supportive role.

The most important thing about outdoor learning is that the outdoor environment provides a personal experience. Activities carried out in the outdoor environment support the child's active participation in the learning process, enable the child to look at learning naturally - to accumulate knowledge through the feelings and impressions conveyed by his body and environment. Outdoor learning engages the child's various sensory organs in the learning process, so what is experienced in the learning process can be acquired in a more comprehensive way. Being outdoors improves the health of both children and teachers, reduces stress and the risk of obesity.

Outdoor learning has the following characteristics:

- a place that supports learning;
- learning through different senses;
- action, that is, direct participation in the process, as well as the creation of something (result obtained) during the activity;
- learning to reflect on what has been learned and relate new knowledge to existing knowledge;
- anticipate the goal of what can be taught to others.

Outdoor education is based on the principle of 'learning by doing' in its pedagogy. This means that the individual's learning result is achieved through meaningful and experiential activities, which should also be accompanied by a deeper understanding of the necessity of learning and the content of what is being learned. In addition to experience and activity, outdoor education enables multifaceted contact with nature, culture and society. Thus, one of the main goals of outdoor education is to develop children's concern for our natural and cultural environment and to develop a sense of responsibility for all living things.

# OUTDOOR GAMES

## COLOUR HUNT

### You will need:

- 1 empty egg tray
- Paint (water colour or other)
- Brushes

### Activities:

1. Paint all the 'nests' of the egg box with different colours.
2. Also decorate the lid of the egg carton.
3. Take the egg carton with you into nature. Look for objects in nature that are the same colour as the 'nests' in your box and put them in the 'nests' of the corresponding colour.

### Tip:

Go on a 'colour hunt' in different seasons. You will find your finds change with the seasons. Maybe it's harder to find colourful things in winter? Why?

## COLLECTION OF LEAVES

Collect leaves from various bushes and trees. Try to find as many types as possible, stick the leaves of paper together (this can be done using sticky tape) and find out what kind of leaves they are.

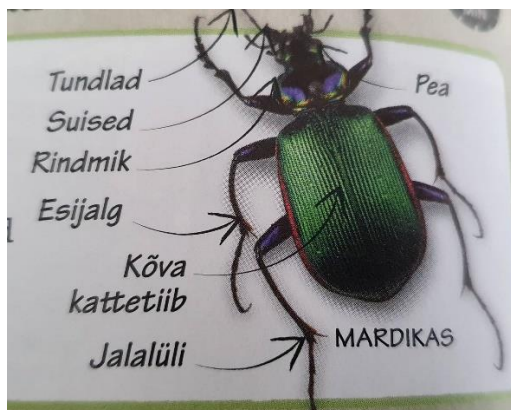


Compare leaf shape: All plants have leaves, but have you noticed how different they can be? Willow leaves are long and thin. Pine leaves have needles and sea buckthorn leaves have spines. Check out what leaves are around you! How are the leaves arranged? There are single leaves, they are gathered in a bunch. Some attach to

the most opposite each other, some alternately. Find out what the surface of the leaf is. Is it smooth, waxy, or rough, rough? Is the edge of the leaf spiky or wavy?

### **DEFINE WHICH INSECTS ARE BEETLES**

There are over 350,000 species of beetles. Most of them have hard covers that hide the hind wings. Beetles use their fangs more for chewing food than for sucking liquid like other insects.



**We study insects:**

#### **Group activities:**

Students look at pictures of spring and identify the signs of spring. The teacher explains the topic and objectives of the lesson, distributes the worksheets. Children make riddles about insects. Then they look at the pictures and look for images of insects in the pictures. Where do butterflies live? Children name the parts of the insect's body and draw pictures.

#### **Activities in the yard:**

Children are divided into groups. Work rules are discussed. Filling in the worksheet. Children look for insects in the air, grass, bushes and trees. The names of the insects found are indicated on the worksheet. Each child chooses one insect and draws it on the worksheet. At the end, the observed insects are counted.

Discussion 'Why do we need insects?'

Conclusions, exchange of opinions: each participant utters one sentence on a certain topic 'What interesting did I learn today?'. Thoughts on can a butterfly become a pet?

### **HUNTING 'BIRDS'**

What bird do you see?

What is the biggest bird?

What is the smallest bird?

How many birds do you see flying in the sky?

How many birds did you see in the kindergarten yard today?

Make a bird from recycled materials.

Make a collage out of old magazines and newspapers

Bird name, characteristic behaviour, voice.

### **HUNT 'INSECTS'**

Look under leaves, rocks, stumps, and anything else you have in your yard for bugs.

Mark: What have you found? What size is it? Where he lives? What colour is it? Take a photo if possible.

Creative Idea: Can you draw the biggest bug you find? How much bigger is it than the little bug you found?

Math Idea: Graph the number of insects.

### **INSECTS**

Children choose the name of the insect. The teacher gives commands:

Summer - insects are on the move, looking for food.

Autumn - looking for a winter apartment.

Winter is sleeping.

Spring - wakes up and dances, jumps, spins.

### **A GAME TO TRAIN ATTENTION AND MEMORY**

#### **You will need:**

- Pictures of animals and plants
- For pasting cardboard photos
- Glue

Test your knowledge about nature by playing this great memory game. Find cards with identical pictures - train your attention. You can make playing cards from photos you have taken yourself.

1. Look for pictures of plants and animals that you often see in your garden. Print two photos each and stick them on the cardboard. You will need 10–12 photos.



2. Shuffle the cards and place them face down on the table. Each player turns over two cards during their turn. If the cards are equal, he gets them. If not, they are flipped again. Whoever collects the most pairs of cards wins.



## **EXPLORING BIODIVERSITY THROUGH GAMES**

### **Memory game:**

Gather a dozen common objects such as a rock, piece of bark, pinecones, needles, seeds, fruit, leaves, twigs, etc., out of sight of the children. Place them on a towel and cover with another towel. Invite the children. Show the children what is on the towel for about 25 seconds and then cover it again. Give the children at least five minutes to collect the same items that were on the towel. They can search for these things alone, in pairs or in small groups. Make sure that the children are not in one place, but scattered around the area.

See together what objects the children found and how many they remembered.

Finally, take out the objects one by one from under the towel and talk about their purpose in nature, shape, form, etc. Give kids a chance to add to their collections.

Then make a mandala out of the collected items together.

## **FORECAST THE WEATHER**

A pinecone can be used as a simple barometer. Place the pinecone in the shade on the windowsill. If the scales are closed, it means high air humidity, it may rain. If the scales of the pinecone are open - the weather is dry, good weather is expected.



### **CAR WASH**

The teacher gives the children lukewarm water, some foam, sponges and the children wash the toy cars in the yard of the kindergarten.

### **BOAT RACE**

Water is poured into a basin or a large bowl. Folded paper or light plastic boats are placed in the pool and children have to make them move by blowing.

### **WATER STATION**

Take two bowls, fill one of them with water, give the child small cups or plastic bottles and let him transfer the water from one bowl to the other.

### **SMOOTH AND ROUGH**

The players are divided into pairs. The teacher asks each pair to find the sleekest, roughest, warmest, softest, etc. within a certain time thing. All pairs search for the specified items and return to the circle at the specified time. All pairs present their results.

### **DOMINO CLUB**

#### **You will need:**

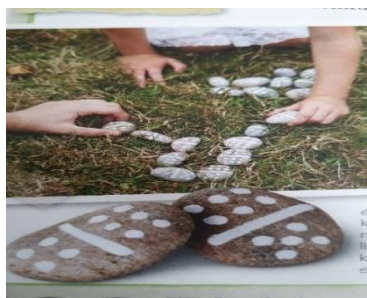
- 28 flat oval stones
- White paint

Make a set of dominoes out of pebbles using white paint. Each end of the domino must have a number between zero and six. Colour the stones in all combinations (6:6, 6:5, 6:4, etc.) to get 28 dominoes.

1. Turn the dominoes upside down and mix them up. Each player takes seven stones and places them in such a way that the others cannot see how many points they have.

2. Whoever has a stone with two sixes or the highest possible number of points starts by placing his stone on the ground. The next player must have a domino that has the same number of points on one end as the face-up end of the stone on the ground. If you do not have the right stone, you are stuck☺

3. The winner is the one who succeeds in placing all seven of his stones on the table first.



## **BRING LIFE TO STONES**

### **You will need:**

- stones, paints

Children look for a stone that reminds them of something or someone (e.g. a cat, a magic egg, a ship, a ladybug, etc.). Draw a stone according to his imagination.

## **VOICES OF STONES**

Divide the players into pairs. Couples find stones of various sizes. What sound does one stone make when it hits or taps another stone? Describe this sound to a friend. Is the sound different when you hit a small rock or a big rock? Two big rocks? Try and listen. What sound does a falling stone make?

## **MYSTERIOUS CIRCLE**

Players sit in a circle, shoulder to shoulder, hands behind their backs. The leader of the game puts various natural objects in their hands (cone, stone, branch, moss, tree leaf, etc.). Hands behind the back at all times. The leader of the game asks each child in turn what they think it is. Only when the child says his guess can he examine the object he got. At the same time, it is discussed whether it is easy or difficult to recognize objects only by touch and not by sight.

## **STORMY SEA**

Children sit or stand in circled areas (e.g. small seat cushions). Each child is given the name of a fish (for example, pike, herring, etc.). At least two children must have the name of each fish. When the game manager shouts: 'Herrings!', the herrings switch places. When 'Storm!' is shouted, everyone must switch places.

Authors: E. Sepper, E. Kylmallik



### **‘WHO AM I?’**

The teacher shows a picture of an animal, and the children move and make sounds, trying to be as similar as possible to the animal shown in the picture.

### **‘DO YOU KNOW ANIMAL VOICES?’**

The teacher plays animal sounds from the phone, and the child has to guess what animal it is, follow the sound and move like that animal.

### **FOCUS ON THE CLOUD**

Clouds are interesting to look at because they constantly change shape.

Lie on your back and look up at the sky.

What shapes or faces do you notice?



### **HOLD A SUNFLOWER GROWING COMPETITION**

Plant sunflowers in pots. Drive the support sticks into the soil. From time to time, mark the length of each flower on the support to see which plant is growing the fastest. Invite your friends to compete to see whose plant will grow the tallest.



## COUNT THE LADYBUG DOTS

There are about 5000 species of ladybugs in the world. The seven-spot ladybug is one of the most common, but some have no spots at all. How many species can you find in your environment?



## SORTING

### You will need:

- Hard base or smooth surface.

### Players: 3 or more.

Children are given the task of finding an object in nature related to a tree. Items taken away are placed on the base or a flat surface in a certain order according to the given task:

- The largest
- The smallest
- The easiest
- The most difficult
- The longest
- The shortest
- The roughest
- The most subtle
- The widest
- The narrowest
- The most equal
- The fluffiest
- Most useful
- Most Harmful, etc.

Finally, a composition is created from the items (each child puts the item they brought).

## **WE WATCH MOVEMENT**

The teacher gives the children the task of walking and counting everything that moves. Samples can also be taken if possible. Children are given 5–7 minutes to search. Invited children return to the teacher.

Questions:

- What did you see moving?
- Which of them moved by itself, moved by some force (wind, water and engine)?
- What living organisms did you see moving? Which of them moved by themselves, which, for example, by the wind?
- What else did you see and find - living or dead objects?
- Who and how moves in nature?

## **WE ARE CREATING A TREE**

**You will need** branches of various sizes

**Players:** 1 or more

Each child looks for twigs. Twigs can be compared according to thickness and length. Finally, one big tree is laid out from the branches. The largest branch becomes the trunk and the rest become branches. The tree can be photographed and the work left where it was made.

## **WE EXPLORE TREES**

What trees grow around us? Select one tree. Give it a name and try to describe it. Find out how it differs from other trees. Compare your trees.

## **WE MEASURE TREES**

**You will need:**

- Growing trees
- Cords

**Players:** 1 or more

Children measure the thickness of a tree with their hands and a string, and compare the thickness of one tree with another. A string is wrapped around the tree and a knot is made to mark the thickness of the trunk. The string is placed on the ground. It is now possible to measure how many feet long the girth of the tree is. By measuring

with your hands, count how many hands you need to hug the tree. Which trees are older, which are younger?

### **WHAT DO WE SEE?**

**You will need** growing trees

**Players:** 2 or more.

Children stop in a circle around the tree and explore who sees what on the tree trunk. You can also look at the trees in the distance. You can look for a bird's nest or a spider's web among the tree branches, and on the tree trunk, you can look for insects, woodpecker tracks or other interesting things. Each child tells about his discovery.

### **LET'S LOOK AT THE BIRCH**

**You will need:** for drawing water and winter birch photos, fasteners, paints, sticks and dishes for mixing paint, paper (for example, a roll of wallpaper) and brushes.

1. The teacher draws the children's attention to the birch, on the trunk of which pictures of autumn and winter birches are attached. Children observe and compare the appearance of the tree in autumn, winter and spring:

- birch leaves turn yellow in autumn;
- birch is dry in winter;
- in the spring, the birch has horsetails, slightly resinous, fragrant, swollen buds;
- in the spring you can collect birch sap (which can be drunk);

Because birch has leaves, it is called a deciduous tree.

2. Game 'Tree Life in Spring':

- the tree wakes up - movements simulating awakening,
- the roots wake up - movements while 'exploring' the earth,
- juice moves – children crouch and imitate (voice) the drink, then slowly rise, sliding their hands up the body,

- leaf buds burst - exercise with hands (the bud develops into a leaf).

3. Artistic activity: children are given the opportunity to mix blue and yellow paint and, after receiving green shades, paint with it.

## **ONE, TWO, THREE: RUN TO THE TREE**

After the teacher gives the command, the children run to the highest, lowest, thickest, thinnest tree: near oaks, birches, chestnuts, maples, etc. The game is useful for longer walks to make the trip more interesting.

### **TREE GAME**

**You will need** various tree leaves or their pictures.

Leaves from different trees are passed from hand to hand in a circle. The main player stands in the middle of the circle with his eyes closed and says: 'Stop!' opens his eyes and asks those who have a tree leaf: 'What kind of tree is this?' If he answers correctly, he becomes the new main player, if the answers incorrectly, the player is out of the game.

### **WIND AND LEAVES**

**Purpose:** consolidate children's knowledge about tree leaves and develop their speaking skills.

The course of the game: children stand in a circle, each holding a piece of paper. In the middle there is one child who is the wind, he has no leaf. He walks in the middle of the circle and says: 'In our yard the wind is spinning, picking autumn leaves'. The children ask 'Which leaf does the wind want?'. The wind answers 'The wind wants a maple leaf' (or another tree) Now all the children walk with maple leaves in their hands to the centre of the circle. The child who managed to enter the centre of the circle faster becomes the new wind. The game starts again. Players can exchange cards with each other.

### **FIND THE TREE BY THE FRUIT**

The children stand in a circle and the teacher asks them questions. Questions:

- What trees do you see around us?
- What is in the bags?
- What are those fruits called?
- What trees do they grow on?

Children are asked to divide into teams. Each team gets a bag of a different colour. The fruits in this bag are distributed among the team members. Task: find the tree on which this fruit grows and attach the fruit to the tree; then return to the team rendezvous



point marked with coloured stripes. The team whose all team members completed the task faster and more correctly wins.

### **WATER RESERVOIR**

Players are divided into groups of 5–6 members. In a group, children line up in columns and place their hands on the shoulders or waist of the child in front. These lines are streams that, when the game master gives a signal, begin to move freely. When moving, children must try not to let go of each other. When the game leader calls out: ‘River!’, all streams must form a single column and form a long river. Now the river flows on. After the leader of the game shouts ‘Sea!’, the children form a big circle from the column and start waving with their hands together.

### **WATER: STREAMS, LAKE, SEA, OCEAN**

Stream - children hold hands several times (4, 5, 6...) and move in a snake.

Pond - the children run into a pile and squat.

River - all children join hands and move in a snake.

Lake - children gather in a circle, lower their hands and touch their shoulders.

Sea - children make a bigger circle and ‘wave’ with joined hands.

Ocean - Raise your hands up, expanding the circle as far as possible, showing the greatness and power of the ocean.

When the children have memorized all the names and shapes, you can start the game not necessarily from the smallest pool, for example, start from the ‘sea’ or from the ‘river’. You can invite the children to come up with their own figures representing a stream, a pond, a river, etc. It is suggested to use the game on the topic of water resources, water properties.

### **THE GARDENER**

**You will need:** photos of flowers, fruits and vegetables.

**Purpose:** to know the most characteristic features of fruits and vegetables, flowers.

**Rules:** the name of the plant must not be mentioned when describing the picture.

Children sit around a table on which pictures are placed face down. One of the children is a gardener holding a watering can or something typical of a gardener. He says to the children ‘I have a big garden. Come to me (says the name of a child), take something from the garden’. The child, who is invited to the table by the gardener,

chooses a picture and describes it in such a way that the other children can guess which plant he took from the garden. Then the child who chooses the picture becomes a gardener.

### **FOREST PATH**

**You will need:** suitable track, various household waste

**Players:** 4 or more

A suitable place to play is a park road or a forest path. The game leader chooses a section of the track 5-10 m long and places up to 10 objects (empty packages or other garbage) next to it. Some of them should stand out, others should blend in with the environment. Players are not told how many items are hidden. Children go one by one along the path and try to find things. However, you cannot point them to others or take them away. When everyone completes the course, they are asked how many items each has found. Finally, the game guide tells you how many items have been placed on the track. Together they remember what it was and discuss why these things should not be in nature. Later, all these items should be collected and disposed of in the appropriate container.

### **SQUIRRELS**

Players are divided into two teams and lined up. Both teams have about 20 small balls (or cones, acorns, chestnuts, etc.), that is, 'nuts', which will need to be taken from one hoop and transferred to another, placed at a certain distance. The task of the players is to help the squirrel in the nest to collect 'nuts' for the winter. One child carries one 'nut' at a time. This is how all the 'nuts' are transferred. The team that first moves the 'nuts' from one hoop to another wins. At the beginning of the task, it is agreed from which position and with which parts of the body the 'nuts' will be moved: with straight or bent arms (legs), between the legs, over the head, behind the back, lying on the stomach, etc.

### **MIGRATING AND WINTERING BIRDS**

A creative and movement game suitable for fall outdoor learning. Children have already learned about wintering and migrating birds, they know that wintering birds stay with us for the winter - they roost, and migrating birds fly to warm countries - they fly around the playground with outstretched arms. The birds are first named by the teacher, then by the children.

### **WALK IN NATURE**

**You will need** a bag for storing things

**Players:** 4 or more

The game leader gives tasks to the participants. For example: take something very hard, something shorter than grass, something bigger than a hand, something red, something very soft, etc. The game manager has unlimited opportunities to use his imagination. You can also submit tasks in the form of a riddle or a puzzle. All the items are put in a bag and then together we look at what was found.

### **PHOTO JOURNEY**

**You will need:** a cardboard picture frame, camera.

**Players:** 1 or more.

Make a cardboard picture frame. Grab your frame and your phone or camera and head out into nature. Look for beautiful, interesting places. Place the frame in one of these locations and take a photo. You can take many pictures. As you watch them, discuss how diverse nature is.

### **SEEDS IN THE SAND**

**You will need:** seeds large enough to be hidden in the sand.

**Players:** 3 or more.

The players turn away, and the game leader hides a pre-agreed number of seeds in the sand (restricted area). Players must find and collect all the seeds.

### **SAND PICTURE**

**You will need:**

- Glue stick
- Sand

Draw a picture on the paper with a glue stick. Then place the picture (drawing side down) into the sandbox and gently press down on the picture. The painting is finished!

### **WE EXPLORE SOIL AND SAND**

**You will need:** magnifying glasses, scoops, bucket with water.

The teacher hands the children magnifying glasses and shows them how to hold them correctly. He then gives the children small shovels and directs the children to the appropriate place to investigate. Children look at the soil and sand through a magnifying glass, try to find various insects and worms in the soil. The teacher helps

to notice that the soil consists of humus and pebbles, while the sand consists only of small pebbles. After the research, the teacher introduces some animals that live in the soil or can be found under stones or stumps (earthworm, centipede, etc.). The centipede game is played: Children stand in a row, hands on each other's shoulders. The first child in line is the head of the centipede and it moves with its eyes open, the others its body, it moves with its eyes closed. A centipede follows a path with low obstacles, the body must trust the head to guide and control it. Do not let go of your partner's shoulders, otherwise the centipede will break.

Children try to build something out of dry sand. Realizing that it will not work, they start thinking together about how to play with dry sand. (You can draw patterns, put something together, etc.). What can we do to build with sand? (The sand must be wet). Children continue to play with sand.

## **EXPERIMENTS WITH SOIL**

### **What does soil consist of?**

Add one spoonful of soil to the plate, look through the magnifying glass. What do you see? Remains of roots and leaves of half-decayed plants, body parts of worms, insects and other small animals.

**Conclusion:** soil consists of rotting plant roots, rotting leaves.

### **Is there air in the soil?**

Gently drop a piece of dry soil into a glass of water. What happened? Air bubbles come out of the soil; it is noticeable in water.

**Conclusion:** air is part of soil.

### **What does soil consist of?**

Add some soil to a glass of water, stir and let it stand. What did you notice? A layer of sand settled at the bottom of the glass, and a layer of dark colour remained. This dark layer is called humus.

**Conclusion:** the soil contains sand and humus.

### **Which is stronger: water or air?**

Pour the dry soil into a plastic cup and add some water. What happened? The water was absorbed. Now water harder. What happened? The soil is moist and no longer absorbs water. Why is the water no longer drinkable? There is no free space, all the air has been replaced by water.

**Conclusion:** soil absorbs water, which displaces air.

## **FEEL IT WITH YOUR HANDS**

**You will need** various objects found in nature

**Players:** 2 or more

Players divide into pairs. One of the partners looks for two objects in nature and gives them to a friend who must be closed at the time. The friend has to guess what he got. The players then switch roles.

## **PICTURE OF NATURE**

**You will need:**

- Four branches
- Pebbles
- Pine cones
- Flowers and others

Find four branches and use them to make a picture frame. Look around for various natural materials: stones, pinecones, flowers, moss, twigs, etc. Take a photo of the collected items in a frame. Do not choose more than you need! Take a picture of your work.

## **THE FOREST ELDER**

**Players:** 3 or more

One of the players is a forest elder. He finds a suitable place for himself - a hill, a stone or a stump - and climbs on it. Other players stand around the forest. Then the forest elder begins to make a wish: 'I wish for something red (or a leaf, a pebble)!'. All players run to fulfil the forest elder's wish. Whoever finds what he is looking for returns to his place. When everyone is back in the circle, the old man of the forest asks what was brought to him as a present and points to one of the players. The player lists what they found.

## **FLOWER SHOP**

**You will need** various flowers

**Players:** 3 or more

Collect as many different flowers as possible. One of the players is the seller. Buyers begin to describe the flowers they want to buy, and the seller says the name of the flower. If the seller says the right flower, the buyer nods and gets his flower. The game continues until there are enough flowers.



## **FIND A PAIR**

**You will need** various flowers

**Players:** 5 or more

Each player looks around for one flower. Once everyone has found a flower, the game leader starts pairing the players. Players who have the same type of flower or players who have the same colour of flower can be paired. Players can also search for clues on their own to match.

## **BARK PATTERNS**

Trees are huge plants, but why are they covered with such hard bark?

Bark like tree skin!

Let's explore the bark of different trees.

**You will need:**

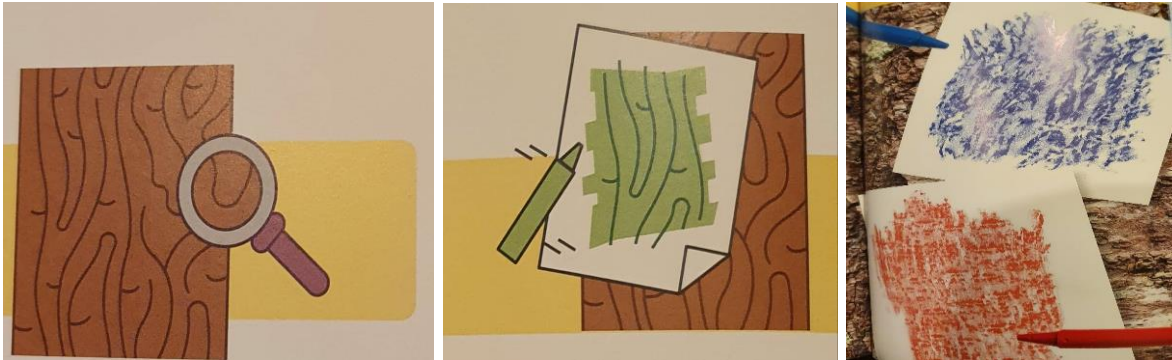
- Notebook
- Pencil
- Magnifying glass
- A metal object (e.g. coins)
- A4 format white paper
- Wax crayons.

1. Get your arborist notebook and pen ready! Choose a tree with rough bark. Write down the location of the tree, the species of tree (if known) and the date.
2. Examine the cortex with a magnifying glass. Does anything grow on bark? Are there insects? Record your observations in a notebook.
3. With the edge of a metal object, gently scrape the bark of the tree, but try not to damage the bark. Take a sniff! Does the tree have a strong smell?
4. Take a piece of paper and press it against the bark.
5. Rub the paper with a wax crayon. A bark pattern should appear on the paper.
6. Repeat 4 and 5 with the other tree. Use another piece of chalk. Compare the bark patterns of different trees.

PS The best way is to hold the paper lengthwise against the trunk and rub the crayon up and down. Be careful: if you press too lightly, the pattern may not come through. If you press too hard, the paper may tear.

### **Theoretical knowledge about the cortex:**

Bark is the dead outer layer of the tree trunk. It serves two important functions: first, it helps to keep the tree upright so that it does not collapse under its own weight. Second, the peel protects against harmful insects, fungi and bacteria. (You may have also noticed that this does not prevent some insects and smaller plants from living on the bark.) Some trees shed their bark to get rid of pests. The bark of other trees contains substances that kill bacteria and prevent the bark from rotting. As the tree grows, its bark stretches and splits. Each type of tree has a different type of bark.



### **MAKE A RAIN GAUGE**

#### **You will need:**

- A clean plastic bottle
- Scissors
- Measuring jug
- Waterproof marker
- Rulers

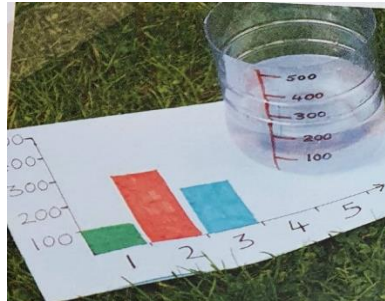
Meteorologists have many ways to study the weather. One of them is to use a rain gauge to determine the amount of rain that has fallen. With an easy-to-make rain gauge, you can create a graph of the rainfall in your area.

1. Cut off the top third of the bottle. Measure 100 ml of water in a jug, pour it into the bottle and mark the liquid level on the side of the future rain gauge.



2. Mark the counter scale to 500 millimetres. Dig a small hole in the ground for the meter to keep it from tipping over and set it in, or attach the meter to a stand.

3. After a rain, always record in a table how much water is in the gauge and how long it will take you to have a scale of rainfall measurement data.



## **MAKE FLORAL PAPER**

### **You will need:**

- Flowers
- Sheets of paper
- Paint

You don't always need brushes to paint pictures. Collect different flower blossoms and dip them in paint, and use the resulting natural 'brushes' to make a flower print.

1. Choose the colours you like and add a different colour to each part of the palette.

2. Choose a flower. Dip in one colour and press onto a piece of paper. Try to press less, sometimes harder, to find out how to get the best results.

3. Dip the other flower ring into the second colour to create a different pattern than the first. When the paint is dry, use the decorated paper for cards or as wrapping paper or just frame it.



## **MAKE TREE LEAF PRINTS**

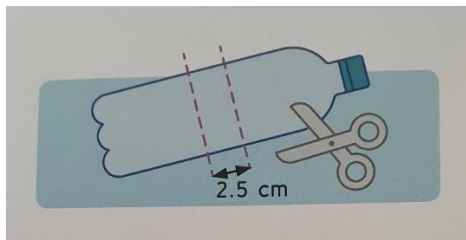
Place the wood leaf on a flat surface and place the white paper on it. Hold the paper and colour it with chalk or a soft coloured pencil. Write the name of the tree next to each printout.



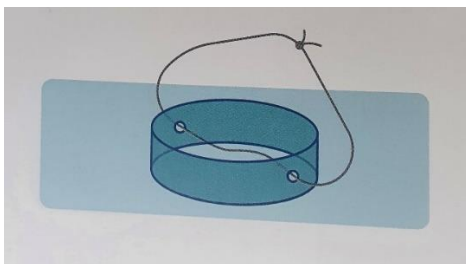
## **WIND TRAP**

We can feel it, but we cannot see it. Which way is the wind blowing? One way to find out is to make a wind trap.

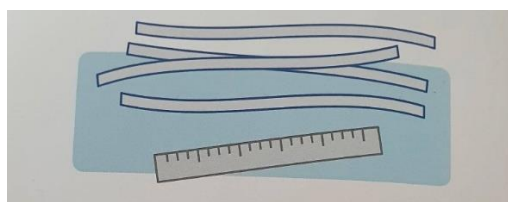
1. Cut a 2.5 cm wide ring from the centre of a large plastic bottle.



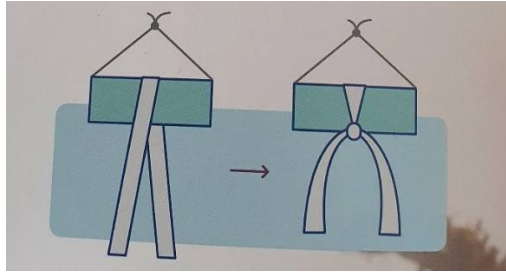
2. Cut a 40 cm string and insert it through the hole. Tie the ends of the string.



3. Using a marker and a ruler, draw 12-15 narrow strips about 1.5-2 cm wide and 50 cm long on the plastic bag. Cut the strips.



4. Hang the ring and fold one of the filmstrips so that the knot is at the bottom edge of the ring.



5. Do the same with the remaining strips. Attach them to the ring at equal intervals.

6. Hang wind traps in a windy area. The stripes flutter in the wind, thus indicating the direction of the wind.



**Diary of the Winds:** check the wind trap every day and note whether the weather is calm, windy, light, moderate, or strong. Use a compass to determine which direction the wind is blowing.

## **MATHEMATICS IN THE BACKYARD**

### **The thickest tree**

How to measure the thickest tree?

By hand, rope, ribbon, etc.

### **Hunting**

Children can search for a certain number of different natural objects.

(5 pine cones, 4 sticks, 3 pebbles, 2 leaves, 1 feather, etc.).

### **Numbers written on the pavement**

The teacher says a number and the children run to find that number. Additional questions: Show the number on your fingers. Place the toy car on the number.



## **Writing numbers**

Children can write numbers on the sand or ground with sticks or fingers. They can write numbers on the asphalt with chalk or with large brushes, using water or to trace the chalked numbers with brushes moistened with water. They can also use sticks, stones or other natural objects to create numbers.

## **One more or one less**

If you have a group of objects (for example, 3 stones), have the children find one more or less by adding or removing one stone at a time, and then count how many stones are in the row.

## **A string of numbers**

Children can write themselves or make a number line up to 10 and find one more or one less in the number line.

## **GEOMETRY**

Create geometric shapes using sticks, stones, etc. Children can copy the figures drawn in chalk or create them with their own hands.

Children can do this by making geometric shapes out of string and seeing that manipulating the string changes the appearance of the shape, perhaps even transforming it into another geometric shape. How to make a triangle, square, rectangle, etc.? Can you show me different ways to make a triangle?

## **COLOURS**

### **‘What? Where?’**

Sorting items by colour: yellow items in a yellow ring, red items in a red ring, etc.

### **‘Where?’**

The teacher asks the children to look for objects of a specific shape or colour (round, square, oblong, red and yellow) and run to them. For example, the teacher says ‘red’ and the children run to the red slide.

### **‘Coloured Balls’**

The teacher throws the balls around the yard, and the children try to collect them as quickly as possible and put them in boxes of the corresponding colour.

## **‘Natural Colours’**

Discuss with the children what was used to draw and become in the old days - coal, plants. Look at nature and find what you can draw. Ask the children to look for plants that they think can leave marks on the paper. The teacher can also pre-collect various plants that do not grow in the given environment, but would be good to paint with (e.g. chokeberry, rowan, etc.). Try together to see what colour comes out after rubbing the paper with some plants. Then all the children try to draw a picture for themselves in the so-called natural colours.

## **Outdoor Bingo**

The teacher gives each child an empty egg case, each ‘nest’ contains, for example, a round circle cut out of coloured paper. The child must fill the ‘nests’ in the egg tray with objects of the following colours: yellow, for example, dandelion flowers, green broken, red flowers, black soil, etc.

## **OUTSIDE THEME OUTSIDES (OBSERVATIONS).**

1. Colours. For example, consider a certain colour. Take pictures of flowers, plants and other things in this colour.

2. Materials and textures. (Smooth, rough, etc.). Photograph objects of various materials and textures.

3. Forms (round, square, oblong). Look for objects of this shape

4. Monitoring ‘An insect under a magnifying glass’

5. Monitoring ‘What's under the rock?’

6. Monitoring ‘What do clouds remind you of?’

7. Questions:

- list living natural objects,
- list inanimate natural objects,
- name man-made objects.

## **INTERESTING GAMES RELATED TO AND ABOUT NATURE**

### **Game ‘Land, Water, Air’**

At the beginning of the game, a leader is chosen and the rest of the players line up in or around him. The leader goes to each player and, touching him with his hand, says ‘Water’, ‘Earth’, ‘Air’ (in any order). He stops in front of some player. If the presenter stops next to the player and says ‘Air’, then the player must say the name of the bird.

If he stops and says 'Earth', then the player must name the animal – the inhabitant of the earth. If 'Water' means a fish or an animal that lives in water. Of course, names should not be repeated. If the player has not named the word before the leader counts to three, or if the name of the animal has already been given, he is out of the game.

### **Game Fish, Birds, Beasts**

The game will require a ball. The players stand in a circle, and the leader is in the centre. The presenter throws the ball to the participants, saying one of the words: 'Fish', 'Bird' or 'Beast'. The participant must repeatedly name the corresponding animal and throw the ball back. The one who did not say, made a mistake or repeated the already existing name, leaves the circle. The last one left in the circle becomes the winner. In this game, you can do without a host. In this case, the players simply throw the ball to each other.

### **The game 'Trees, bushes, grass'**

**Rules:** when the teacher asks to depict a tree, the children stretch their hands up, stand on their toes and show how tall the trees are. 'Brushes' – arms outstretched (wide bushes), 'Grass' – crouching down (low grass). During the game, the teacher can insert the names of mushrooms and animals without warning, and then the children should not do any actions, stand freely. You can change the speed of the game, from slow to fast. The teacher performs the first steps together with the children.

### **The Reverse Game**

Children stop in a circle. The presenter throws the ball to someone and says 'Light', the one who catches it must say the word - on the contrary, that is, in the opposite sense. The player answers: 'Dark' and returns the ball to the leader, who continues the game (wide-narrow, hot-cold, etc.).

### **Game 'Squirrel prepares for winter'**

First, tell the children about the squirrel - in the nursery or in the forest - how they live and gather supplies for the winter. Nevertheless, winter is a very difficult time for a squirrel. Each child gets 3 nuts (can be replaced with pine cones), which they hide one at a time in nature, just like the squirrels (in tree cavities, bark cracks, stumps, etc.). After that, the children engage in activities that are planned during the walk. At the end of the walk time, send the 'squirrels' to find their nuts. How many will you find? The game develops children's attention and memory.

## **The game 'Who's here?'**

### **Option 1**

Put 5 or 6 items from the forest in the bag. Give the bag to the children. With their hands in, they have to feel the objects and say what is in the bag. Then give the empty bags to the children. Children work in pairs. One of the children puts things in a bag, the other guesses what is in the bag. Then it is replaced.

### **Option 2**

Work in pairs. One of the children in the couple is blindfolded. Another carefully leads him to a tree, a flower, a protruding root, etc. Blindfolded, the child describes what he feels - warm, soft, hard, fluffy, etc. and tries to guess what it is.