

# THE EXTRAORDINARY ADVENTURES OF TOLA, POLA AND RASCAL

IDEAS FOR GAMES ABOUT ENVIRONMENT





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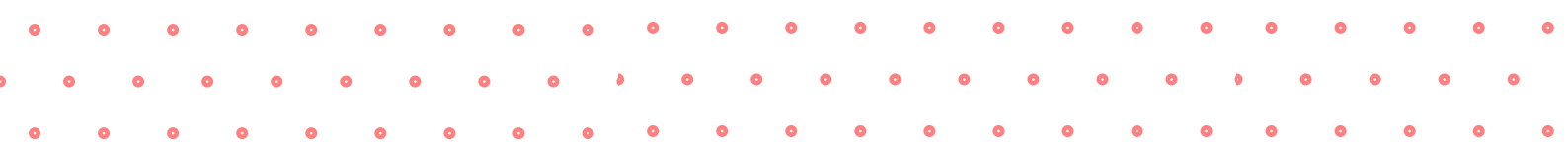
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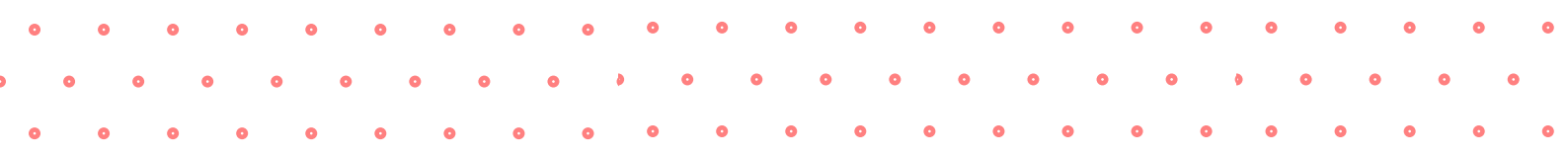
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# A COUPLE OF WORDS FOR A BEGINNING

## The Extraordinary Adventures of Tola, Pola and Rascal

No one is too young to help the environment



### *Dear Parents and Teachers!*

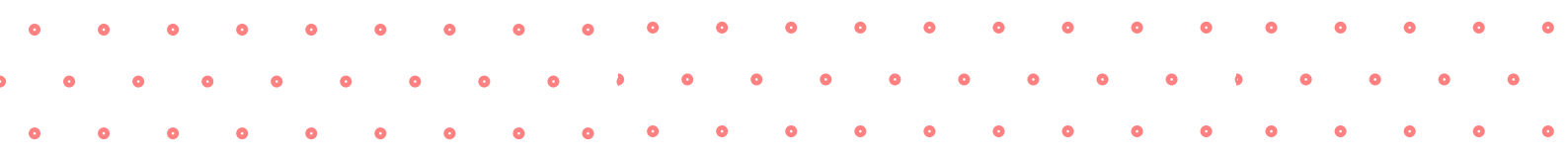
These educational materials were created with the cooperation of our partners – Lipka (an educational organisation for environmental training based in the Czech Republic) and DAPHNE (the Institute of Applied Ecology from Slovakia). They constitute a supplement to the stories from the book *The Extraordinary Adventures of Tola, Pola and Rascal*. We propose that they serve as a useful tool for teachers, to introduce environmental training in their classes for the first time. The book and educational materials will teach children about the chosen **United Nations SDGs**.



Eco-Patrol – **SDG 12, Responsible consumption and production**



In search of water! – **SDG 6, Clean water and sanitation**





Buzzing assembly, Meadow orchestra – **SDG 15, Life on land**



Life adventure of endangered Beluga – **SDG 14, Life below water**



Time is up, we need to act – **SDG 13, Climate action**

Our aim is to support the local implementation of the global United Nations strategy **Agenda 2030**.

Read the stories from the book *The Extraordinary Adventures of Tola, Pola and Rascal* and learn the rules of environmental protection together with children. After reading the stories, conduct the activities featured in 6 scenarios, each dedicated to one tale and dealing with different topics. Creating artworks and playing games, will not only provide fun for children, but also consolidate their knowledge about climate change, waste segregation, biodiversity protection and drought prevention.

We teach children about the global problems and inspire them to find solutions. We encourage them to make small changes – first in their backyards, at homes, in kindergartens or at schools. We advise our little citizens on what they can do alone or in a team. The rest is up to them, their imagination and enthusiasm.

We used a few symbols in our materials – their role is to facilitate finding the content you need:



Sensor



Taste it



Little drama



Move your body



Let's discuss it!



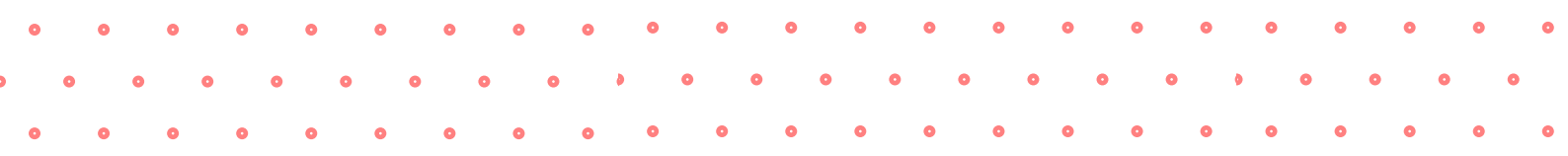
Take a look



Let's experiment!



Be creative





Attention!



Time for Music



Use your memory

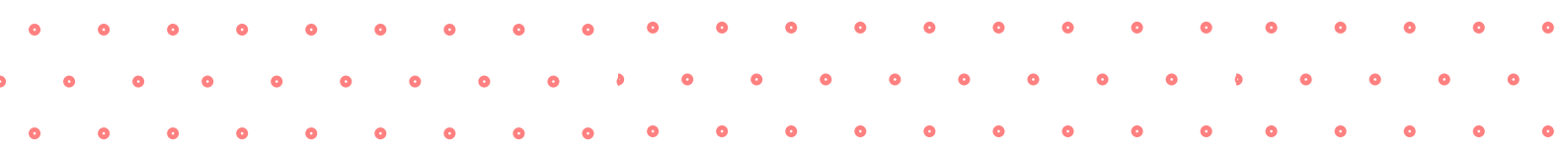


Read the story

At the end of scenarios you will find the attachments mentioned in every activity. You can print them out or use in an electronic version.



The educational materials were created as part of **Kids for Eco-Action project**, with the financial support of the **International Visegrad Fund**. The project is run by **CultureLab Foundation** (Poland), **Lipka – školské zařízení pro environmentální vzdělávání** (Czech Republic ) and **DAPHNE – Inštitút aplikovanej ekológie** (Slovak Republic).



# LITTER SEPARATION ECO-PATROL



## Abstract:

Eco-Patrol is a set of activities devoted to waste segregation. Children will learn how to segregate waste into 5 types by dividing their waste – apple cores, used tissues and other litter incorrectly disposed. Children will recognise their responsibilities in preserving the environment.

### Educational objectives:

### 1) Environmental goal of the program:

Children will increase their knowledge related to the 12th Sustainable Development Goal: Ensure sustainable consumption and production patterns. They learn how to segregate waste into metal, glass, paper, plastic and bio waste, and are informed about the exceptions. Also, they understand that litter left in the environment (in a park or at a beach) is dangerous for animals.

## 2) Measurable outcomes:

- Children know how to segregate waste into 5 categories: metal and plastic, paper, glass, bio waste, mixed waste.
- Children can explain in their own words what waste segregation and recycling are.
- Children can recognise which waste decomposes longer than other.
- Children know the consequences of swallowing litter by animals.
- Children understand how dangerous litter is for animals.



### ACTIVITY NO.1: READING THE STORY

**The main goal:** Increasing the motivation to protect the environment

**Time:** 15 min

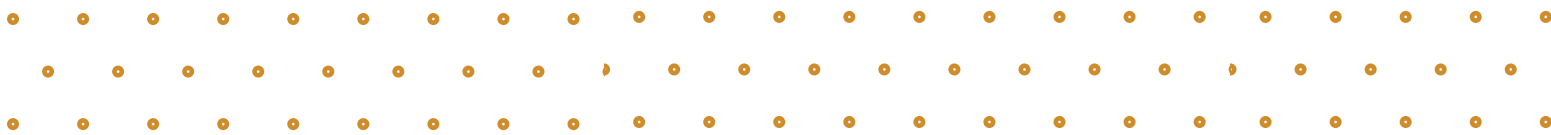
**Place:** Classroom (or outdoors)

**Tools:** The book *The Extraordinary Adventures of Tola, Pola and Rascal*. No one is too young to help the environment.

### DESCRIPTION

The teacher reads the story from the book or [website](#) and asks the **following questions**:

*Who did our heroes find on a beach? What had happened to the seal before it was found on a beach? How did Tola, Pola and Rascal decide to cope with a problem of the polluted beach? In what way were the animals littering the beach? Did our protagonists segregate litter correctly? Do you remember what they did wrong?*





## ACTIVITY NO.2: THE WHEEL OF FORTUNE

**The main goal:** Acquiring waste segregation skills.

**Time:** 15 min

**Place:** Classroom (or outdoors)

**Tools:** Attachment 1.2 tokens with waste which has to be segregated (to be cut out and laminated if possible); icons of bins. Bins have to be cut out, then fixed into empty containers; 5 waste containers.

### DESCRIPTION

The teacher sets on the floor 5 containers with bins stuck to them. The bins are labelled paper (blue), plastic and metal (yellow), glass (white and green), bio waste (brown) and mixed waste (black). Children sit in a circle with the bins between them. It is important that children do not form two rows. They must see each other.

After children take their places, the teacher informs that they will play a game called the wheel of fortune.



The teacher explains that the aim of the game is learning how properly segregate waste. How? Each child gets a token and states: *What is on the token? Is it paper, plastic, glass, or bio waste? Which bin should the litter be thrown into?*

If a child answers correctly to all questions, they can stand up and throw their token into the appropriate bin. To make it easier to understand, the teacher takes one token and says what waste it represents, what material it is made from, and then throws the token into the appropriate bin. When all the children understand the rules, they are informed that tokens will be randomly drawn and given by the teacher who represents the wheel

of fortune. The teacher stands in the centre of the circle with one arm reached out, pointing at the children (like clock's arm). Then, the teacher turns around twice with their eyes closed. The child pointed by the teacher at the end of the last turn, starts the game.

After providing the correct answer, the teacher may give high five to the child. Then, the drawing repeats. The game ends with the last token. When the game is over, the teacher empties the bins, repeating to the children which waste was thrown into bins for paper, plastic, glass, bio waste and mixed waste.



### ACTIVITY NO. 3: WASTE AT THE BEACH

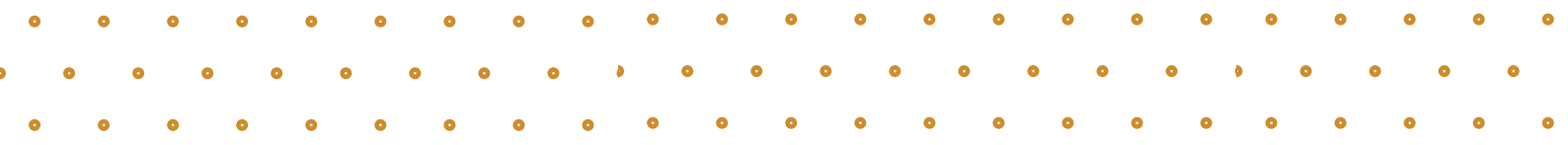
**The main goal:** Acquiring the ability to recognise waste in the environment. Raising awareness of how long it takes different waste to decompose.

**Time:** 5 min

**Place:** Classroom (or outdoors)

**Tools:** Attachment 1.3 “Compare the pictures” board xeroxed for every child

#### DESCRIPTION



The teacher hands out the sheets and asks children to find 9 differences between the pictures. When the task is done, one of the children reads aloud all the spotted differences. These should be a plastic straw, a plastic bottle, a plastic bag, a metal can, a diaper, a plastic/styrofoam cup, a tyre, an apple core, newspaper.



#### ACTIVITY NO. 4: HOW LONG DOES IT TAKE?

**The main goal:** Raising awareness of how long it takes different waste to decompose.

**Time:** 15 min

**Place:** Classroom (or outdoors)

**Tools:**

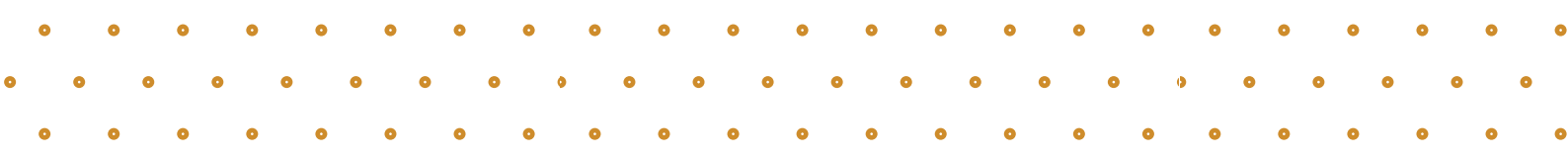
- **Attachment 1.4** Pictures of waste – xeroxed 4 times and cut out to form tokens
- 4 A4 sheets with periods of waste decomposition (up to 1 month, up to 1 year, up to 100 years, up to 500 years) – The teacher may attach symbols to the sheets, representing periods of waste decomposition (e.g. 1 month = holidays, 1 year = 4 trees depicting seasons, 100 years = a pair of elderly people, 500 years = 5 pairs of elderly people)
- 4 small, empty containers - Adhesive tape to stick sheets to the containers

### DESCRIPTION

The teacher asks the children to count to 4. Children with the same number form a group which sits down on the floor together. The teacher explains the topic for the discussion: how long does it take waste to decompose. How many years does it take different types of waste to decompose into minerals, invisible to the naked eye?

The teacher puts the 4 sheets with periods of waste decomposition on a table and informs that they depict the time needed for different type of waste to decompose into microelements. Then, the teacher distributes pictures of waste in each of the 4 groups and asks children to group them according to the decomposition time. The teacher encourages children to guess, as they may not have full knowledge about how much time different types of waste need to decompose. They can group waste using their intuition.

After 10 minutes the teacher asks groups to choose one waste and say how much time they think it takes the waste to decompose. The teacher corrects the wrong answers, then allows the groups to throw their litter into appropriate bins. After 12 rounds (every group talks about 3 items), all waste is segregated into appropriate containers. At the end of the activity, the teacher takes out the waste again and, together with children, summarises which waste need the most time to decompose. The production of this waste should be limited, so as not to pollute our planet.





## ACTIVITY NO. 5: ANIMALS' BELLIES

**The main goal:** Teaching children that waste left in the environment may be dangerous for animals.

**Time:** 25 min

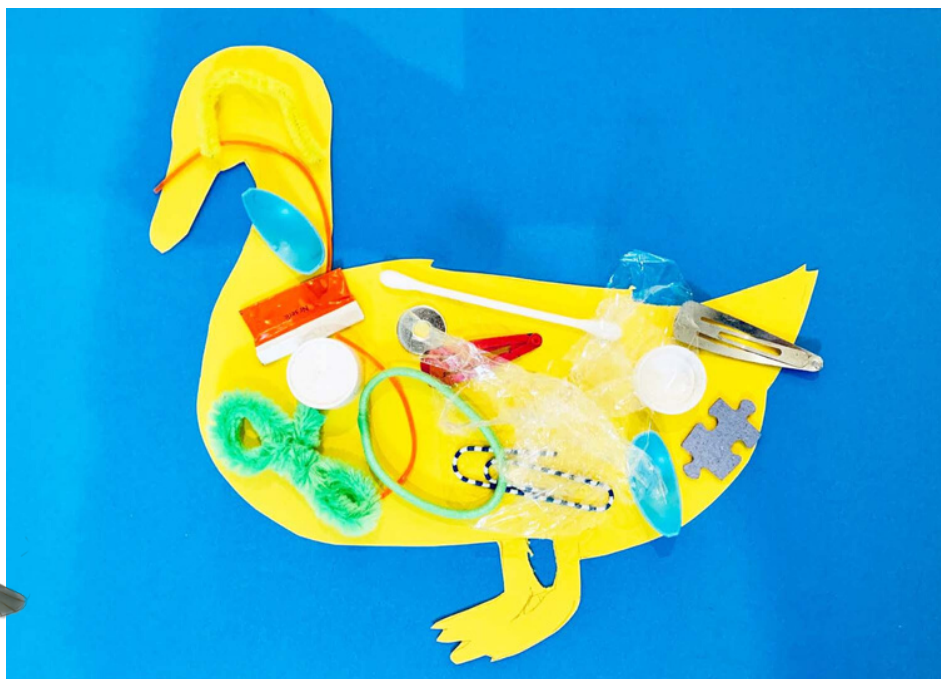
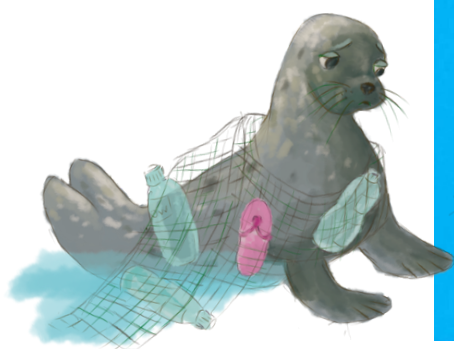
**Place:** Classroom

### Tools:

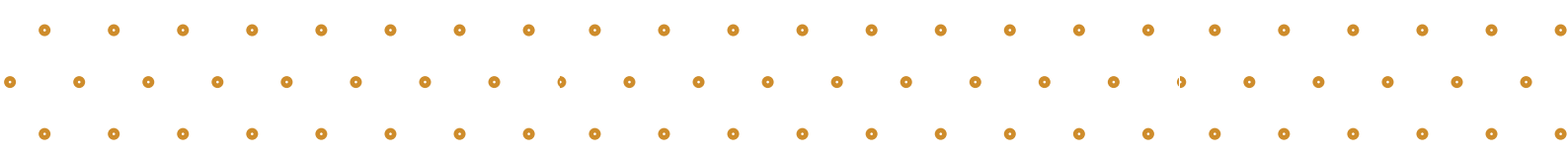
- **Attachment 1.5** – seal, fish and duck stencils cut out from cardboard
- blue paper – one sheet per child
- colour paper – one colour for each child
- pen/pencil (proportionally to the number of stencils)
- scissors
- examples of litter brought by the children (i.e. plastic bags, cookie wrappers, screw caps, crown corks, toothpaste caps, clips, and other waste produced on an everyday basis)
- liquid glue

## DESCRIPTION

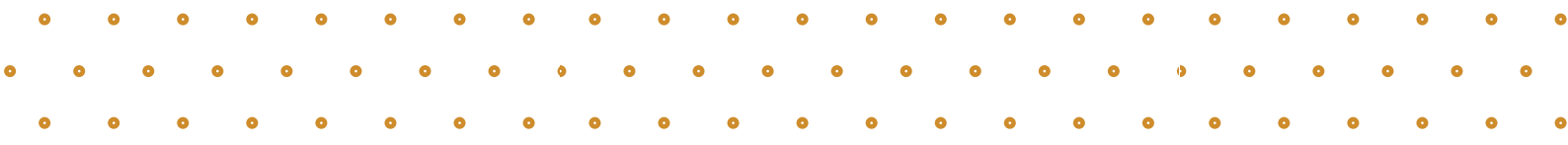
Before the activity begins, the teacher shows children **a few photos by World Wide Fund (WWF) organisation**, depicting oceans polluted with plastic waste.



The children are instructed that animals frequently confuse plastic bags, bottles and other waste with food and eat them.



The aim of this activity is to teach children about the risk of leaving litter on beaches, parks and other places where animals can eat them. The teacher uses the stencils from **Attachment 1.5**. The children choose one stencil and use it to draw the animals on their own sheets of paper. If the group is younger, the teacher prepares cut out animals before the class for each child to choose one animal. They cut out the drawn animal and glue it to the centre of the blue sheet of paper. (Avoid the animal cut-out from touching the edges of the sheet.) Children then glue different types of litter to their animal: plastic bags, cookie wrappers, screw caps, crown corks, toothpaste caps, clips, and other waste produced on an everyday basis.



# DROUGHT AND DESERTIFICATION IN SEARCH OF WATER!



## Abstract:

Through storytelling and movement, creative and dramatic art activities and experiments, children will learn about water and its importance for life and a healthy landscape.

## Educational objectives:

### 1) Environmental goal of the program:

Children will examine the meaning of water as essential for life.

### 2) Measurable outcomes:

- Children explain how and why to save drinking water
- Children can create a drinking fountain for birds
- Children can describe the importance of groves in the landscape
- Children can describe the importance of water for all living creatures



## ACTIVITY NO. 1: READING THE STORY

**The main goal:** The motivation of children and evocation of the water theme.

**Time:** 15-20 min

**Place:** Interior

**Tools:** The book "The Extraordinary Adventures of Tola, Pola and Rascal"

### DESCRIPTION

The teacher reads **the story In search of water!**, then asks questions about the story, encouraging children to give the answers.



**Examples of questions:** *How do you know that Terka's field is dry? What happened to the water in Terka's Field when it rained? How do trees hold water in clay? What did Tyk's garden look like? Why was Terka breathing well in Tyk's garden? Where was the water in the garden?*



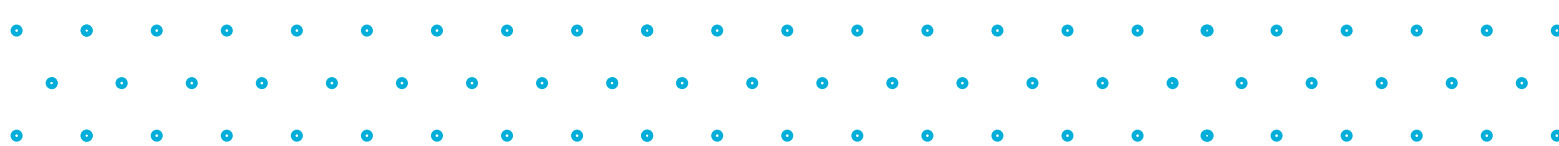
## ACTIVITY NO. 2: HOUSEHOLD WATER AND HOW TO SAVE IT

**The main goal:** Children discover where they use water at home and how they can save water.

**Time:** 15 min

**Place:** Interior

**Tools:** Playing equipment (CD / MP3 player, PC, speakers ...), picture cards (**Attachment 2.2.1**), water sounds (**Attachment 2.2.2**)

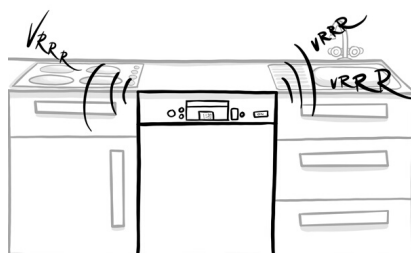
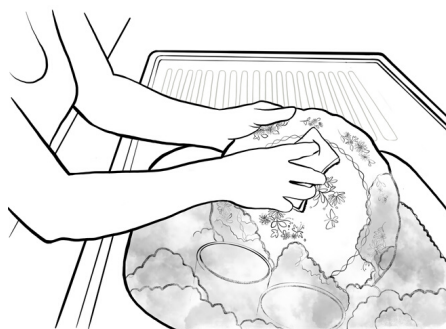
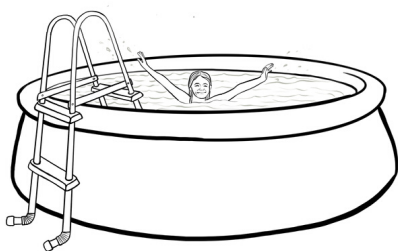


## DESCRIPTION

The teacher divides the children into groups of 3-6, and gives each group cards with pictures of housing activities using water. The children will place the cards in front of them, while the teacher plays the sounds of these activities. The children will guess what the activity is and raise the appropriate cards to show it.

### List of activities – picture cards:

- toothbrushing
- sound of dishwasher
- washing dishes in the sink
- toilet flushing
- swimming in the pool
- watering or sprinkling the lawn
- showering
- the sound of a dripping tap



After that, the teacher repeats all the activities again, allowing the children to think about how they can save the water.

*Always stop the water while brushing your teeth. The dishwasher saves water. Let's get a toilet that has a big and a small splash. Water consumption is 3 litres for a small flush and 5-6 litres for a large flush. A shower for normal washing is enough, there is no need to bathe in the bath every day. Showering consumes about 40 litres of water, bathing in the bath about 165 litres.*



Water is drained from the dripping taps into the channel unnecessarily. Do we really need to fill the swimming pool in the summer when there are drought and lack of water all around? Can we cool down otherwise? Sprinkle with a garden hose, go to the swimming pool ...



When the lawn is not cut to "hedgehog", it does not dry up so much and does not need to water. Drinking water is largely obtained by purification of water from dam reservoirs or less often pumped from underground boreholes. If it is dry, the water decreases. We save water and, where possible, use service water instead of drinking water.



### ACTIVITY NO. 3: MAKE A MOUSE MASK

**The main goal:** Children make a mask of Terka the mouse.

**Time:** 15 min

**Place:** Interior

**Tools:**

- coloured or white paper
- crayons
- crepe paper
- scissors
- rubber
- ribbon (twill)
- string
- glue
- black face paint or eyebrow pencil

### DESCRIPTION

Children will make a mouse mask – a headband with ears, a crepe tail or a string. The teacher paints on the faces the whiskers and the nose of a mouse.



### ACTIVITY NO. 4: HOW TERKA THE MOUSE WENT FOR WATER

**The main goal:** Children will act out part of Terka the mouse's story.

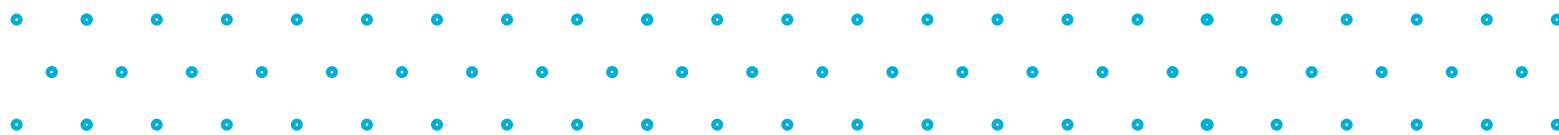
**Time:** 15 min

**Place:** The garden – ideally open area on a hot day

**Tools:** Garden hose or water sprayer, optionally a watering jug for each child

### DESCRIPTION

The teacher reads the following text and tells the children masked as mice to show what they hear.



Terka the mouse was sleeping happily as the rays of the morning sun **tickled** her fur coat. She **woke up, stretched, and peered curiously out** of the burrow. She **frowned**, as the sun roasted bitterly. And her cornfield had dried up and needed just a little rain. She **grabbed** the watering can (the kids take the jugs) and **went to the stream**. When she reached it, she **saw** only a thin murky trickle that almost disappeared under the dry leaves. She **stomped with anger**. Then Terka **picked up** some water and **went back** to the field. She barely **trailed**, the watering can was so heavy. She watered the first corn seedling and went back to the stream, **feeling hot, wiping her forehead**. There were mosquitoes at the creek, so Terka **swung** around and **clapped her paws** against her belly to scare them away, ah! Yeah! She **dropped** her jug and **clapped both paws**, but there were more and more mosquitoes, so she **ran away** to her hole. Her friends Tola, Pola, and Rascal were waiting there. She **waved at** them cheerfully. The three friends put a finger on their mouth, showing her to stay quiet like a mouse. They wanted to show her something. Slowly, they **crept** toward the neighbour's garden. They **looked around** the wild garden-jungle, as they were passing trees and shrubs, carefully **stepping over** the whorls of a variety of plants. They reached the pond and stopped. Terka finally stopped being hot and was very pleased when she closed her eyes, ah, the fresh air, the shade and cool water droplets...



The teacher can sprinkle water on the children with a water sprayer or a garden hose. The children can continue to play with the hose or the sprayer and perhaps can create a rainbow.



## ACTIVITY NO. 5: HOW LONG DOES IT TAKE FOR THE LEAVES TO FADE?

**The main goal:** Children learn that different plants contain different amounts of water and have varied resistance to dehydration.

**Time:** 10 min for preparation and 1 day for the experiment

**Place:** Interior

**Tools:** Leaves of various plants, plastic bags

### DESCRIPTION

Children gather leaves of different herbs and trees during their walk. They will spread them side by side on a tray or paper. During the day they must go to observe which leaves begin to wither first and which ones last. It is recommended to collect leaves that contain a lot of water and will dry soon (lettuce, impatiens, basil, dandelion, plantain) and leaves that contain less water or have thick skin (oak, birch, sage).



*Thick and stiff leaves have thick skin that prevents water evaporation (birch). Waxy substances also prevent evaporation – the leaves are shiny (oak) and have hair – the leaves are silvery or have fur (sage).*

Try another type of the experiment. Put the leaves from several types of plant species into the plastic bag. Tie or tighten the bag with a rubber band. During the day – observe. The leaves in bags should fade later than these left on the tray.



## ACTIVITY NO. 6: PAINTING WITH WATER

**The main goal:** Children will perceive different surfaces and colours of nature as well as observe how they change after painting with water.

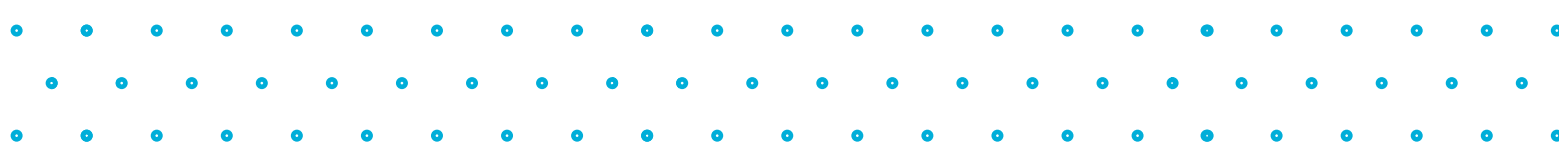
**Time:** 15 min

**Environment:** Exterior – garden, backyard

**Tools:** Water container, brushes

### DESCRIPTION

The teacher puts a pool of water on the garden and gives the brushes to the children. The children will soak their brushes in the water and paint the natural products – pebbles, tree bark, stump, leaves. They will observe how the products of nature change after painting them with water – the stones' colour stand out, the leaves veins come out, the tree's annual rings are displayed.





### ACTIVITY NO. 7: HOW MUCH WILL IT RAIN?

**The main goal:** Children find out that different amounts of rainwater are collected in different places of the garden.

**Time:** 15 min

**Place:** Exterior – garden, backyard

**Tools:** 5 identical containers (for example 1 liter yogurt buckets)

#### DESCRIPTION

The teacher and the children place the 5 identical containers in the garden. The teacher selects different places – under a tree, in an open area, under a gutter... After the rain falls, the children can measure amount of water in all containers. After the experiment, the containers can be left standing and refilled to have the same amount of water in all of them. Then the children can measure the time it takes for the water to evaporate.



### ACTIVITY NO. 8: DRINKING FOUNTAIN FOR BIRDS AND INSECTS

**The main goal:** Children make their own drinking fountain and actively support nature.

**Time:** 15 min

**Place:** Interior/exterior

**Tools:** Shallow container (e.g. ceramic glazed or a plastic tray) for under the flowerpot, deep plate, stones, snail shells, shells

#### DESCRIPTION

We put stones and shells into the bowl and the bowl is filled with water. Place the bowl in the garden.

We put the stones in the bowl so that the drinking insects do not drown. When an insect falls into the water, it climbs on the stones. If the ceramic container is not glazed, the water will soak into the surrounding soil. The drinking fountain should be placed in a semi-shady place so that the water does not evaporate too quickly, for example into a flower bed. Suitable places can be found with the children during the evaporation experiment described in Activity no. 7, or the children place the produced drinking fountains in different places in the garden and watch how much water evaporates.



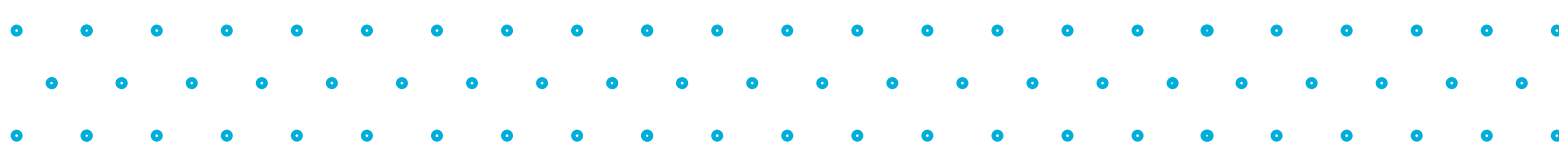
### ACTIVITY NO. 9: WATER WANTED!

**The main goal:** Children will learn how water soaks into the ground after rainfall.

**Time:** 15-20 min

**Place:** Garden (after rain)

**Tools:** Garden scoops or wooden sticks for raking



## DESCRIPTION

The teacher will give the scoops to children or they will find a tough stick to dig in the ground. The teacher asks them to try raking in different places in the garden and to find out how low the water level is after rain. They can search in flower beds, under the trees, in the sandpit and on the compacted ground where they often run.



*The water infiltration is hard in compacted land, there are no holes with air where the water could go after rain. The land is loosened by animals, earthworms, larvae of insects, moles, and an army of invisible microorganisms. This kind of land is healthy and holds water well. We can attract these little creatures if we prepare their food – plant leftovers – and avoid using chemical fertilizers.*



### ACTIVITY NO. 10: THE TREES AND WATER DROPS

**The main goal:** Children will explore and discover that trees keep rainwater on their leaves and needles.

**Time:** 10 min

**Place:** Exterior

**Tools:** None

## DESCRIPTION

The game is the same as the Fish and Fishermen, it differs only by shouting. The teacher selects one child to represent the tree. The other children are drops of water. The task of the tree is to catch as many droplets as possible. The tree and droplets stand opposite each other at a distance of 10 metres. The tree shouts: “Droplets, droplets, trees will catch you!” and runs towards the drops, trying to catch as many of them as possible. The “caught” drops become trees and in turn catch other drops together with first tree.



*We call a group of trees and shrubs a grove. The groves are very important for water retention, especially in large areas of farmed land. The trees retain large amounts of water on their leaves and needles, then the water slowly evaporates and cools the air. Trees retain water along with the roots to reduce evaporation into the air.*



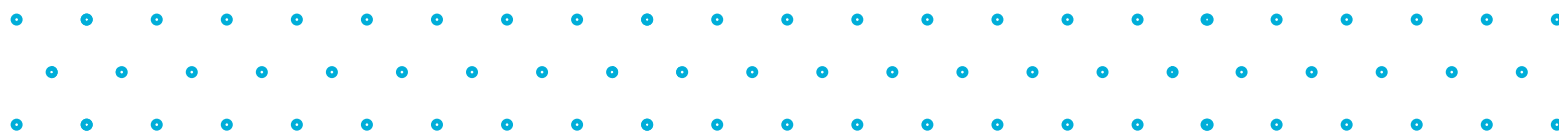
### ACTIVITY NO. 11: SNAILS AND DROUGHT

**The main goal:** Children will find out that snails need dampness for their life.

**Time:** 10 min

**Place:** Exterior/interior

**Tools:** None



## DESCRIPTION

Children represent the snails. They run around and the teacher tells them how the snails live. When he says the word **DROUGHT**, the children stop, stay still and pretend to survive the adverse drought.

**The teacher can tell the following story:** *The snails came out of their shells and are looking for a snack. They find a delicate and juicy salad and begin eating it. Yum! Yum! Only the crunch is heard. The sun is shining and suddenly comes... the **DRROUGHT**. The snails climb out of their shells again and continue to crawl on, meeting and greeting each other with their tentacles....*



*Snails need moisture for their life and will survive drought by crawling into their shells and becoming inactive [dormant].*



### ACTIVITY NO.12: WHAT WILL I DO FOR WATER?

**The main goal:** Children will classify gained information and repeat them.

**Time:** 10 min

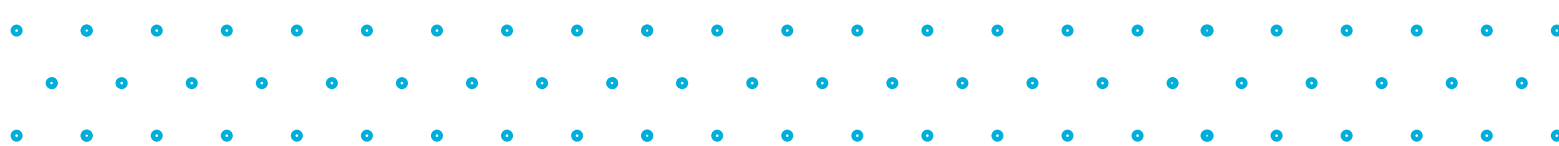
**Place:** Interior

**Tools:** Crayons, papers

## DESCRIPTION

Children draw ways in which they can save water or how to catch raining water in the garden or elsewhere.

*They can plant a tree, make a green roof, capture rainwater and use it for watering, and create a small drinking reservoir for birds and insects.*





PROTECTION OF BEES

# BUZZING ASSEMBLY



## Abstract:

Through storytelling, and related movement, creative and dramatic art activities, children learn about the lives of solitary bees, their importance to nature and what threatens them.

## Educational objectives:

### 1) Environmental goal of the program:

Children will learn about the importance of the solitary bees' role in nature and what threatens them. Solitary bees have a great importance in the pollination of many plant species, thus maintaining species balance in nature.

### 2) Measurable outcomes:

- Children explain why the solitary bees are important in nature
- Children make an insect hotel

- Children give examples of where and how the bees build their nests
- Children describe the development of the solitary bees
- Children explain what threatens bees



### ACTIVITY NO. 1: READING THE STORY

**The main goal:** The motivation of children and evocation of the theme of solitary bees.

**Time:** 15-20 min

**Environment:** Interior

**Tools:** Book "The Extraordinary Adventures of Tola, Pola and Rascal"

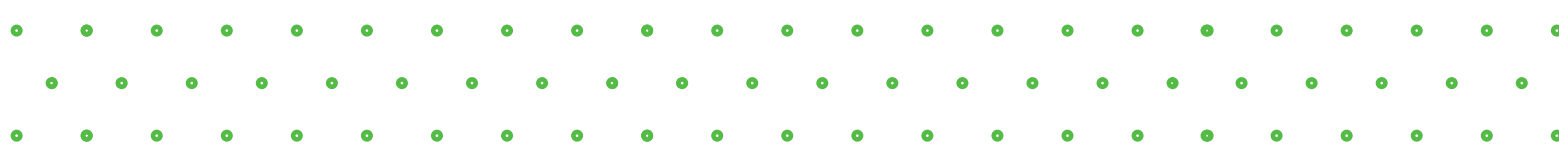
### DESCRIPTION

The teacher reads the story **Buzzing Assembly**. Then questions the children about the story, encouraging them to give the answers.

**Examples of questions and answers:** *Where do the solitary bees live? Why are they called so? Why do they collect nectar and pollen?*



*Solitary bees do not live in colonies, but every mother keeps her "own household". They do not have female workers but only perfect sexual forms – males and females. A fertile female looks for a suitable nesting site, building the cells herself and supplying them with food. In her lifetime she builds tens of cells and usually dies before adult bees hatch from the cells. They live hidden and inconspicuous lives, some live in holes in wood abandoned by beetles, others live in the sand or dense soil, others live in rotting wood.*





## ACTIVITY NO. 2: SOLITARY BEES INTRODUCE THEMSELVES

**The main goal:** Children learn how diverse the bees are and how they are perfectly adapted to their environment and way of life.

**Time:** 15 min

**Environment:** Interior

**Tools:** A4 cards with photos of bees and a description of their typical activities and life strategies (**Attachment 3.2**).

### DESCRIPTION

The teacher holds the cards with the photograph of a bee facing themselves, and the description of her life strategy or activity on the other side. The children are positioned around the room while the teacher shows them photos of bees one by one, briefly explaining what the bee is doing. The children then demonstrate the activity.

### PANTALOON BEES

*are very skilful in collecting pollen and are the record holders, as they can carry a heavy load of pollen as on their legs (up to half a gram of pollen at a time; the honeybee can carry hardly half of it and they are both roughly the same size). They have long-haired collecting brushes on their legs.*

The children walk slowly and feebly raise their legs as if they were heavy.

### MASON-BEES

*have collecting brushes on their tummy. They literally ‘swim’ on a flower while combing its pollen by shaking their tails.*

The children crawl on the ground while shaking their bottoms.

### LEAFCUTTING BEES

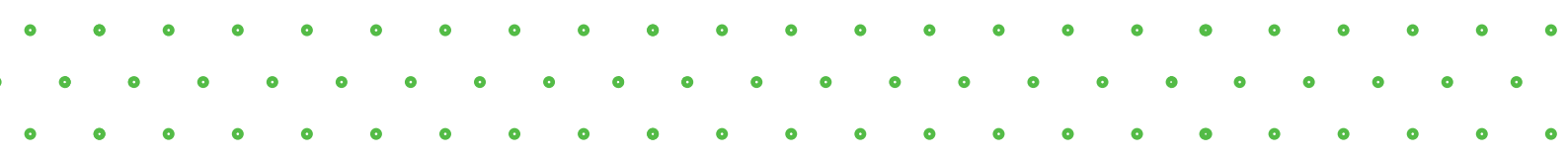
*line their nesting cavity with bitten slices of leaves.*

The children pretend cutting out a shape.

### CARPENTER BEE

*has strong mandibles to chew the wood.*

The children pretend “chewing”.





## HALICTUS SPECIES

*carry a load of pollen on both legs and abdomen.*

The children can try to wear a tennis ball on different places of their body – they climb on their knees and carry it on their backs, walk with it on their heads...

## HAIRY-FOOTED FLOWER BEES

*are very hardy. They fly out at the end of winter and early spring (late February and early March), while the other bees are still asleep. They warm up by running around and exercising. Anthophoras are excellent pilots. They can fly extremely fast, stop in flight and hover in the same place for a minute.*

The children pretend to be cold and then run around for exercise to keep warm. Doing squats, stretching, slipping, jumping in place...

They will also try flying manoeuvres such as fast and on-site flight.

## MINING BEES

*dig up long corridors in the sand or dense soil with their mandibles. The main corridor branches into two or three chambers. Their walls are solidified and smoothed by wax so that they do not fall. All this is a hard work, so the mother bee sometimes needs to take a rest and sometimes she sticks out her head out of the corridor and watches the entrance.*

The children crawl on the ground and with hands “dig up the nest” (like a mole), then rest for a while, climb back and raise their heads and look around – patrolling.

## LONG-HORNED BEES

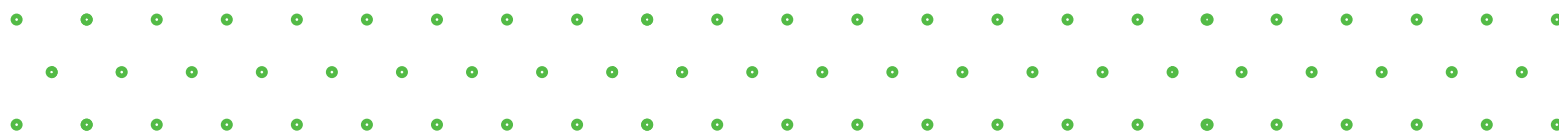
*has long antennae.*

The children make feelers out of their fingers.

## BOX HEADED BLOOD BEE

*is a “cuckoo” bee. It puts eggs in the nests of other solitary bees.*

The children are “sneaking around” and looking for a foreign nest.





### ACTIVITY NO. 3: BEE CARNIVAL

**The main goal:** Children disguise themselves as solitary bees and realize how diverse they are and how they are perfectly adapted to their environment and way of life.

**Time:** 15 min

**Place:** Interior

**Tools:**

- pieces of fabric
- dyed gauze
- headbands of rubber or twill
- pillows
- pieces of wool
- strings
- hairy wires

#### DESCRIPTION

The children mask themselves like solitary bees, they can wrap their feet in scarves like pantaloon bees, make long antennae-like long-horned bees... For inspiration, photos of bees from Activity no. 2 can be used. The children can try bee activities with a mask – collecting pollen, flying in a meadow or dancing on a song.



### ACTIVITY NO. 4: SWEET BUN

**The main goal:** Children make their own “pollen bun”.

**Time:** 15 min

**Place:** Interior

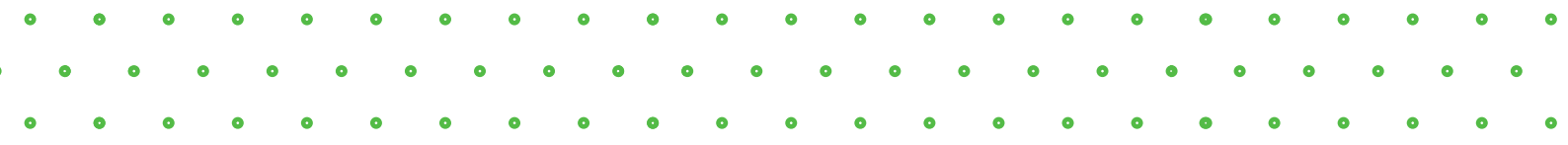
**Tools:** (for about 15 children)

- a package of sponge biscuits
- a piece of butter
- a bowl and spoon for mixing the dough
- photos of chambers of solitary bees (**Attachment 3.4**).
- a glass of stiffer jam
- a bowl and spoon for mixing the dough
- noodle roller
- bags
- small papercases for muffins

#### DESCRIPTION



*The mother bees prepare a room for their children (larvae), putting a sweet bun of pollen and nectar, which they had collected and carried into the nest. When the larvae hatch from the eggs, they feed on the “sweet bun loaf”.*



The teacher mixes the crushed biscuits, butter and jam in the bowl. Each child is given a piece of dough to shape into a bun, which they place in a small paper muffin case for use in the next activity. Sponge cakes can be crushed by the children – placed into two bags (in case one breaks), tied, then crushed into small pieces with a noodle roller on the table. Or the children can break them up with their hands in bowls.



## ACTIVITY NO. 5: HATCHING OF MASON BEE ZDENKA LARVAE

**The main goal:** Children will learn about bee development.

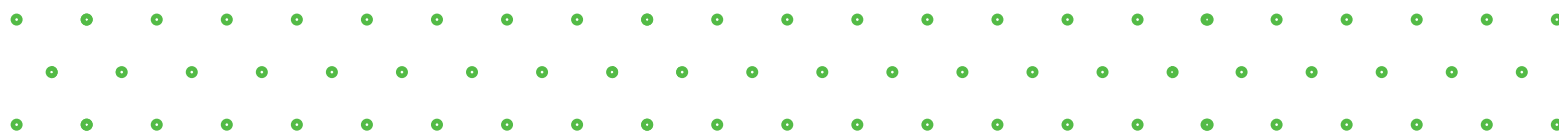
**Time:** 15 min

**Place:** Interior

**Tools:** Chairs, fabric (blanket, curtain, large scarf) to cover it or crawl tunnels and pillows, cupcakes with buns from Activity 4

## DESCRIPTION

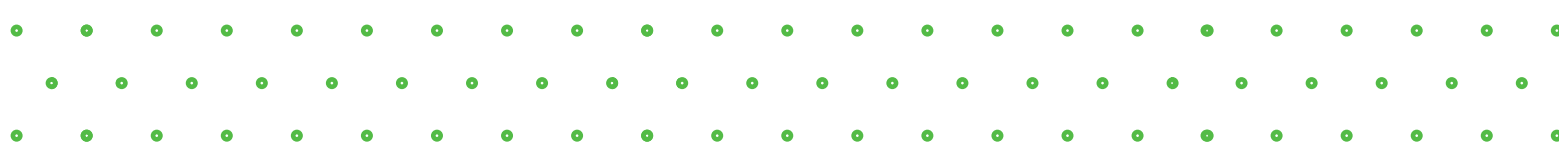
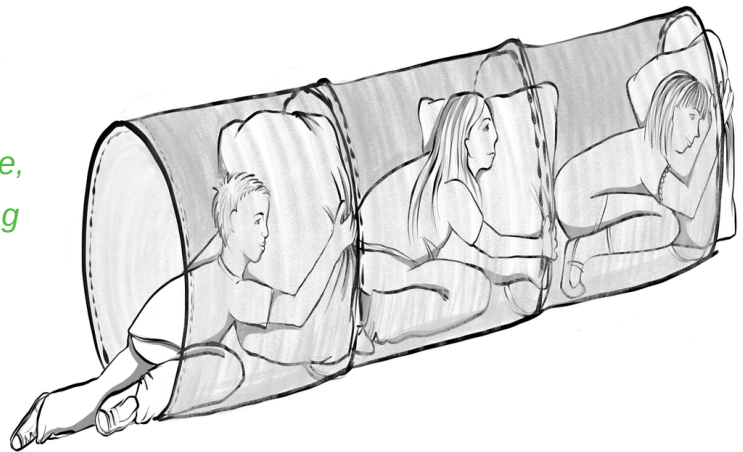
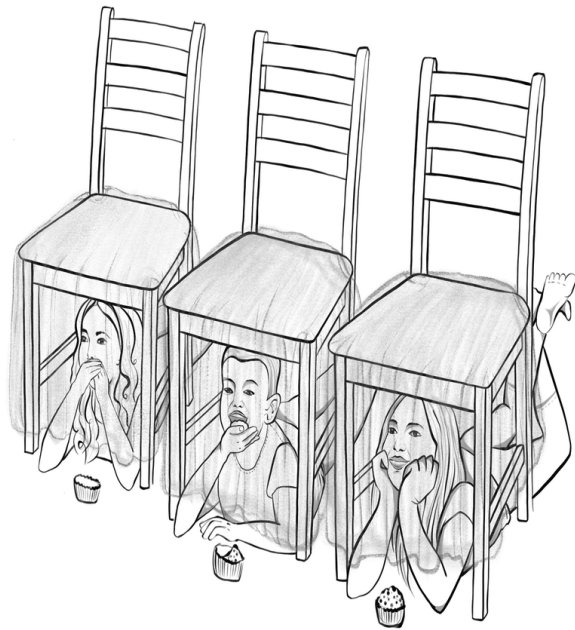
The teacher and the children prepare the rooms by placing chairs side by side in a row, covering the seats with a cloth so that it touches to the ground. The children can crawl into the chamber under the chair, hide their buns and demonstrates what the teacher talks about. The chambers can also be created so that each child takes a pillow, crawls into the crawl tunnel and uses the pillow to separate chambers from each other ("snapping"). In this case the buns should be eaten outside of the tunnel before or after this activity. During dramatization, the children first represent the mother, then the larvae and then the young bee.





### The teacher's narration:

Do you know how Zdenka the mason bee was born? Her mother first found an empty cavity in the tree and began preparing chambers in a row. She waxed the walls of each chamber properly with wax and saliva so that no water could enter. Then she placed a fragrant and sweet pollen bun in the centre of each chamber and laid an egg on it. She enclosed each chamber with a wall of clay and stones mixed with saliva. After some time, Zdenka the larva hatched from the egg and started to feed on the bun. She grew and grew until her room became small, then she formed a cocoon and fell asleep. She slept and slept, and had a dream that a cold wind was blowing outside. And indeed, first it was autumn and then winter outside. Zdenka slept sweetly in her little room. In the spring, she was awakened by the warm spring sunshine, along with her sisters in the surrounding chambers who were already biting, scratching and chewing out of their rooms. She hurried to work, chewed through the wall, climbed out of the cavity, and flew outside to the sun.





## ACTIVITY NO. 6: BEE-ROOMS

**The main goal:** Children try to make bee nests to learn about different nesting strategies of solitary bees.

**Time:** 20 min

**Place:** Outdoors – garden, sandpit

**Tools:** Nature products, pictures of bee nests (download), empty rolls of toilet paper (optional)

### DESCRIPTION

The children gather the nature materials and try to build a nest for solitary bees.

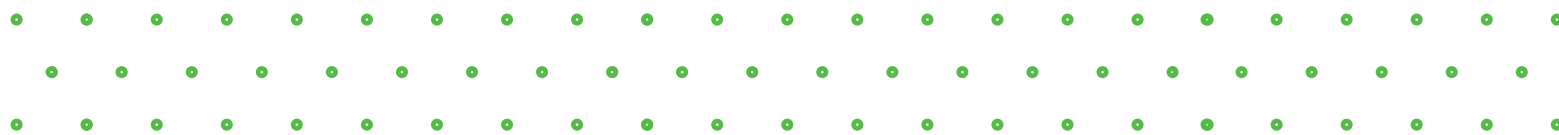


**Mason bees** use ready cavities for nest construction – for example, empty corridors in wood by beetles, crevices in the wall, shells of snails or settle in rubber hoses, bamboo sticks and reeds. The cells are placed behind each other and separated by partitions made from clay and saliva.

**Leafcutting bees** bite pieces from the leaves of trees (willow, birch, hornbeam, etc.) to make their nests which they roll up either into the ground or into the rotting wood of the tree. The children cut the circles out of the leaves, dig a hole in the sand, and put the leaves inside it. To hold a shape and make it easier the teacher can give them a roll of toilet paper and they put leaves inside it.

**European wool carder bees** build and litter their nests with hairs from plants.

**Mud bees (Megachile species)** build chambers glued from a solid mixture of sand and saliva in walls and rocks.



**Mining bees** nest in the ground, preferably sand, where they dig corridors to connect more nests.



## ACTIVITY NO. 7: THE BEE DRONES ARE LOOKING FOR AN OVERNIGHT STAY

**The main goal:** Children will find out how male bees – drones – survive the night.

**Time:** 10 min

**Place:** Exterior – garden, backyard with trees or bushes

**Tools:** None

### DESCRIPTION

The teacher explains to the children how bee drones look for places to sleep. If they do not find a suitable crevice or place to crawl, they simply firmly attach their mandibles into any plant, often grass, and hold all night and rest. The teacher explains to the children what is going on during the day, while they are running around. When they hear “It is night”, they must stop and hold with hands on any plant or hang themselves on a tree branch.

#### The story:

*It's day and the bee drones fly around the meadow, looking to see if they meet some pretty bee lady, but what is it? A wasp! They quickly fly away. Phew, she didn't see us. Then it was night... And now it is morning. The bee drones are hungry and looking for nectar and pollen in flowers.*



*The drones of some solitary bees (for example *Osmia cornifrons*) visit flowers, collect nectar and pollen and thus contribute to pollination.*



## ACTIVITY NO. 8: MAKE COLOURFUL FLOWERS

**The main goal:** Children make their own product, which they use in the next game

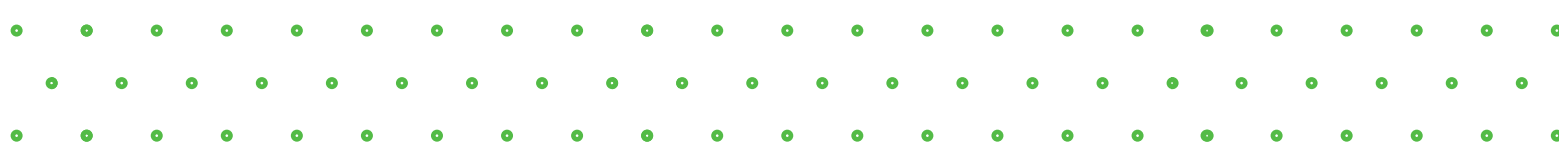
**Time:** 15 min

**Place:** Inside

**Tools:** White papers, scissors, tempers, bowls for mixing colours

**Option 1:** several boards of wood 10 x 10 cm (we can use cardboard), sturdy string, glue, pencil

**Option 2:** paper rolls of empty toilet paper



## DESCRIPTION

Children will make flowers that will be used in the following activity (each child should make at least three).

### How to make flowers:

#### Option 1:

Prepare the flower stamps. Children prepare the boards (approx. 10 x 10 cm). On the boards, they draw a flower with a pencil – bells, dandelions, marguerites, chicories and then stick a string on the pre-drawn flower. The children can dip these stamps into the paint, print on paper and then cut the flowers out.

#### Option 2:

Children cut off the toilet paper rolls at one end by about 5 centimetres. They bend out the “teeth” made from cutting the roll. The children can soak this flower in a colour, imprint on paper, then cut the flowers out.



### ACTIVITY NO. 9: SEARCHING FOR FOOD

**The main goal:** The children will try to find out how the solitary bees find their food.

**Time:** 15-20 min

**Place:** Outdoors, open area, lawn, playground

**Tools:** Flowers made in Activity 8 (at least 3 times more flowers than players are needed)

## DESCRIPTION

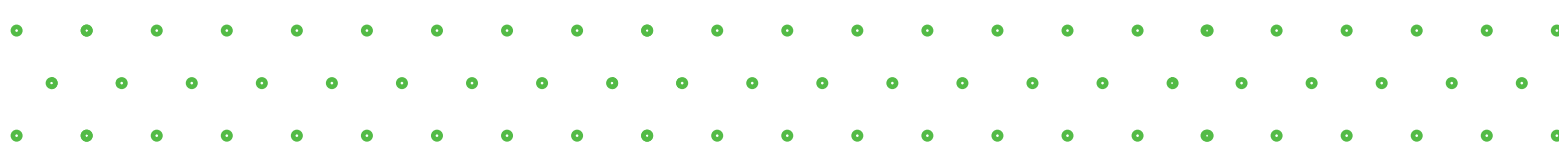
Let's play that bees are looking for flowers with sweet pollen and nectar.

### Round 1:

The teacher places all the flowers in the playing area. After the signal (bell, whistle) the children (bees) run and look for the flowers and carry them one by one into “the house” to the teacher. The teacher instructs which colours the children should collect (e.g. “dandelions bloom, bring only yellow flowers”). When the children take them, the teacher says, “The bells and chicory bloom, we pick blue flowers”. Continue until all flowers are picked. The bees get full when all the flowers are collected.

### Round 2:

Before the start of the next round, the teacher says that there was a lawn mower and now there are less flowers in the meadow. Only half of the flowers are placed in the playing area. Collection is the same.



### Round 3:

The mower cut the meadow another time. Even less flowers are placed in the playing area. The children can now collect all colours at the same time (they are lucky if they find any flower) but they can still pick flowers one by one.

### Round 4:

Even less flowers are placed in the playing area. The bees will find it difficult to look for the flowers and now they are chased by a blackbird. Whoever is caught by the blackbird, goes to “heal” in the house to the teacher and after healing (3 squats) can then go back to search for flowers.

*Chelostoma florisomne (Large Scissor-bee) is preparing pollen buns for larvae exclusively made of pollen and nectar of Ranunculus flowers, therefore it is wrong to cut the whole meadow at once.*



*Chelostoma campanularum (Small Scissor-bee) is a development tied to bellflowers. Adults can feed on several species of plants but for their larvae, they create food supplies only from nectar and pollen of different kinds of bells.*

*There are many other bee species that are dependent on specific plant species. The names of these plants often occur in the bee’s name (e.g. Andrena fulvago – Hawksbeard Mining Bee).*



## ACTIVITY NO. 10: MAKE AN INSECT HOTEL WITH THE CHILDREN

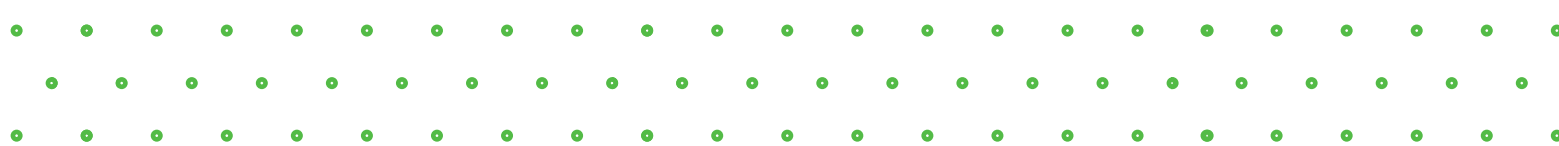
**The main goal:** Children make their own insect hotels and actively help solitary bees.

**Time:** 45-60 min

**Place:** Inside

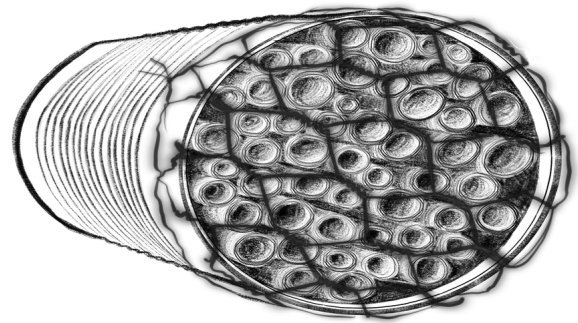
### Tools:

- can (from corn, peas or condensed milk, approx. 400 ml)
- jute or other sticking agent
- glue
- reeds
- elderberry hollow stems
- secateurs
- plaster
- water
- string
- scissors
- dry knotweed stems



## DESCRIPTION

First cover the can with the cloth. Then cut the straws and elder stalks, knotweed and / or reed to the height of the can. Mix a little gypsum and glue the stems to the bottom of the can until it is filled. Attach this simple insect dwelling to a height of about 1 metre in a suitable place, like the garden house or fence. Since most bees are thermophilic and light-loving, the insect house should be placed so that for a part of the day is exposed to direct sunlight. East is better than west because bees are more active in the morning.



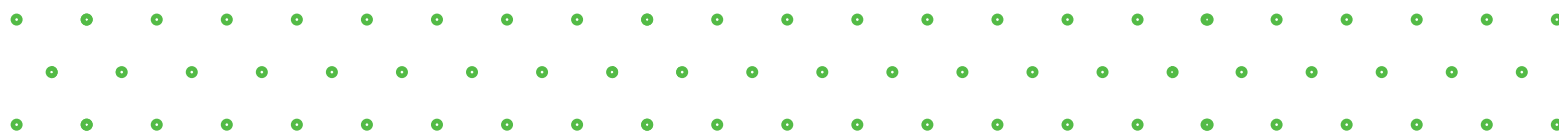
Photos of this house and other types of hotels can be found in the **Attachment 3.10**.

### Environment suitable for bees

*The wildlife needs the diverse environment. They need flowery lawns, fruit and trees for lairs, wild bushes, rock gardens with fragrant plants or stone walls, but also wetlands or garden ponds. Such an environment can serve as a shelter for many species of insects and invertebrates and as a nesting place for bees and their relatives.*

*The maintenance-free corner of the garden, the so-called "wilderness" can also serve as a hiding place and home for the insects and invertebrates. This is a space in the garden left undisturbed to allow the wild nature to live naturally.*

*Many species of bees and other Hymenoptera can find breeding grounds in piles of wood, wooden fence, or in piles of sand and clay. Other places rich in nesting space include reed mats on fences, reed roofs or hollow bamboo trellis.*





# BIODIVERSITY MEADOW ORCHESTRA



## Abstract:

Through storytelling, and related movement, creative and dramatic art activities, children will learn about the importance of meadows in the country. They will understand why meadows are dwindling and how to ensure they stay colourful, healthy so as to provide plenty of homes for insects.

## Educational objectives:

### 1) Environmental goal of the program:

Children will understand the importance of meadows and the importance of grazing and mowing to maintain the diversity of a healthy landscape.

### 2) Measurable outcomes:

- Children will explain why grazing and mowing are needed for a meadow.

- Children will get to know closer 4 meadow plants.
- Children will explain the concept of biodiversity as an example.
- Children will contribute to increasing biodiversity in their surroundings by planting local or native species' seeds.



## ACTIVITY NO.1: READING THE STORY

**The main goal:** Children realize why grazing animals are important to meadows.

**Time:** 15-20 min

**Place:** Indoors/outdoors

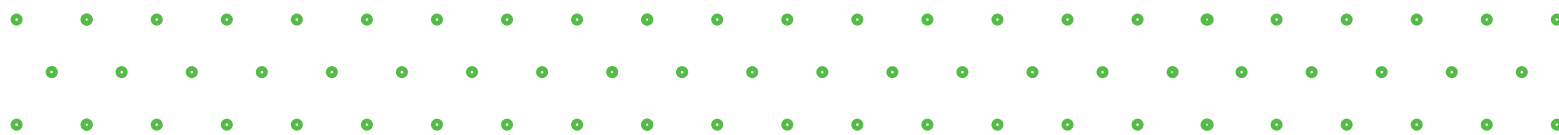
**Tools:** The book *The Extraordinary Adventures of Tola, Pola and Rascal*. No one is too young to help the environment.

## DESCRIPTION

The teacher reads the story **Meadow Orchestra**. Then questions the children about the story, encouraging them to give the answers.

### Examples of questions:

*Where do butterflies like Lady Butterfly fly? Why was Lady Butterfly was ill? Where did the rest of the orchestra disappear? How did Tola, Pola and Rascal tried to help insects. Why is biodiversity is so importants?*





## ACTIVITY NO. 2: GRAZING ON A MEADOW

**The main goal:** Children will learn why grazing animals are important to meadows.

**Time:** 10 min.

**Place:** Indoors/outdoors

**Tools:**

- 1 piece of natural colour canvas (recommended size 2 x 2 m)
- green fabric cut into pieces of approx. 10 x 10 cm (enough for all sheep)
- branches (enough for all the children in the class – goats bite the scrub)
- cards of sheep and goat (**Attachment 4.2**) with string hanging on the neck
- basket
- bells

## DESCRIPTION

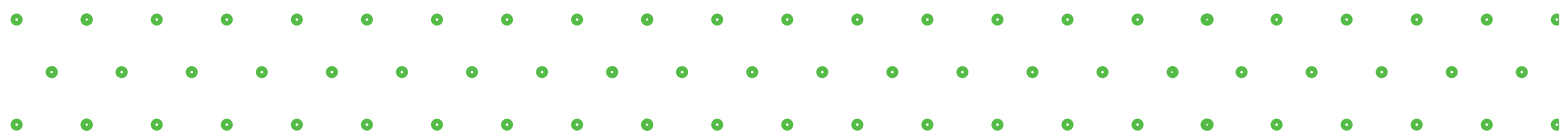
The teacher prepares one canvas of natural colour, with pieces of cut green fabric and branches to represent a meadow overgrown with tall grass and shrubbery, which prevent the flowers from getting enough space and sunshine.

Divide the children into 2 groups. One group of about 4-6 children, holding hands to represent a solid fence, will stand in a semicircle behind the children who are playing the animals. The second group will be the rest of children playing the grazing sheep and goats. Each child in this group receives 1 sheep or goat picture card and hangs it on their neck to symbolise a grazing animal. The children in the group will be arranged in two rows – one for sheep and one for goats.

At the pre-agreed command of the teacher (e.g. a whistle or bell sound), the first child of each row runs out and takes one piece of green fabric/one branch from the meadow and then returns to the end of the sheep/goat line until all children have had a turn. Use a basket to hold all the material the children have collected.

A teacher (an older child may be entrusted with this task) can play a sheep dog to make sure that each child runs out only when the previous child returns and stands at the end of his/her line to maintain the order of participation.

At the end, praise all the children (sheep, goats), for helping to lighten the overgrown meadow. Various other flowers, which until now lacked sunshine, can grow. This activity can also be repeated after adding flowers to the meadow (*activity no. 4*) to show that the sheep and goats are always needed. Flowers on canvas can be fixed with a magnet on both sides.





### ACTIVITY NO.3: MOWING ON THE MEADOW

**The main goal:** Children learn why mowing is important for meadows.

**Time:** 10 min

**Place:** Indoors/outdoors

**Tools:**

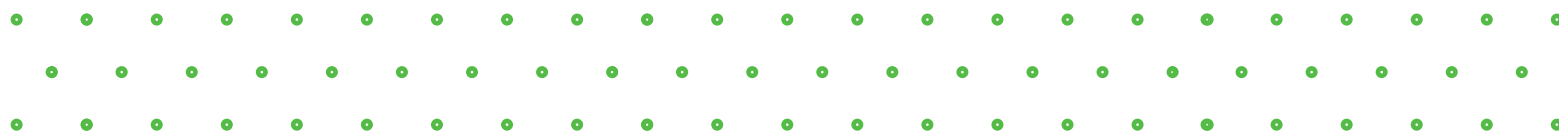
- 1 piece of natural colour canvas (to make the grass clearly visible if the carpet in the classroom is multi-coloured)
- green fabric cut into pieces (enough for all the children in the class)
- branches (enough for all the children playing sheep and goats)
- cards of sheep and goats (**Attachment 4.2**) with a string for the children to hang on their neck (enough for all the children playing sheep and goats)
- 2 small plastic hockey sticks
- string/ribbon (3 pieces 2 meters long)
- photo of a large mower (**Attachment 4.3**)

### DESCRIPTION

The teacher will place the collected pieces of grass back onto the canvas or on the carpet in the classroom (repeat 2-3 times as necessary throughout the game). Assume that the animals have grazed and the mowers have arrived. The children who formed an enclosure (4-6 children) in *Activity no. 2* will place a picture card of a mower on their neck. The teacher will mark the mowing strips (with a string or ribbon) to guide the children (mowers) to the correct cutting direction. Explain that the mowers mow from the edge towards the centre (from one side to the other) so that the small animals hiding in the grass can escape in time (rodents, nesting birds, etc.). Scatter green pieces and let the children try to mow their own strip.

Introduce the mowing activity by saying to the children that animals do not graze during the winter (depending on its harshness) because the grass is under snow, and therefore it should be mowed in advance. People take care of the animals during the winter by providing them food (hay) and a dwelling place. Hay is mowed and naturally dried grass and it also provides the bedding in the animals' dwelling place. Mowers cut and dry the grass that turns into hay during the summer.

The children assigned as sheep and goats will remain seated in a designated place in the class, while the mowers with the scythes (hockey sticks) can act mowing the grass according to the following rules:




1) Select children to stand side by side and mow with the hockey stick in the way that we throw mowed pieces of grass to one side. The scythe should be kept as low as possible so that we can pick up all the pieces of grass and have as much cut as possible per swing.

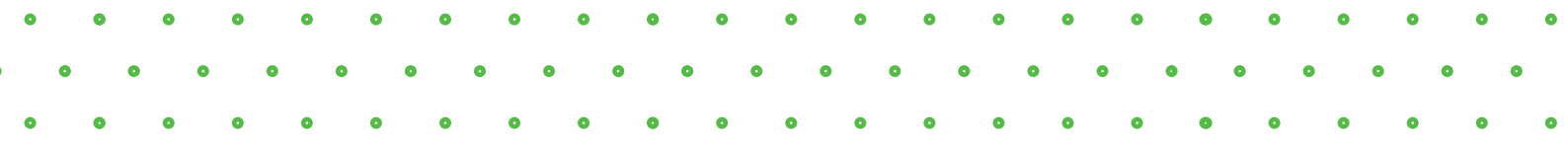
2) Let all the children who represent the mowers begin the mowing activity.



3) The teacher will mention that there are many plant species in the meadow which are popular and nutritious like clovers, juicy dandelions or nutritious grasses. Because they grow quickly and to a large height (up to 130 cm; taller than children and meadow grass) they are mowed regularly and are an important food source for grazing animals. In order to replicate the environment, meadow songs can be played as a background.

4) The game can also pose a challenge: which one of the mowers will be the first, but will have a properly mowed meadow? (i.e. all pieces of green cloth collected at the indicated strip). Once the grass is cut, arrange the pile by raking it through a few times so it can dry to form hay.

 **Activity no. 4: Sweet bun**  
**The main goal:** Children make flowers, practicing motor skills and engaging their own creativity.  
**Time:** 15-20 min  
**Place:** Indoors



### Tools:

- A5 or canvas size pictures of uncoloured flowers growing on meadows (e.g. meadow clover, dandelion, poppy, peach bellflower) (**Attachment 4.4**)
- one pre-painted picture of each flower as a template (include also real photos)
- colour-box
- scissors

## DESCRIPTION

The teacher will familiarise the children with all flowers by asking them to repeat their names aloud before giving them to each child. Allow the children to colour the pictures of the flowers according to or closely matching the template. The children can cut the flowers out after colouring them. The teacher again asks the children to repeat the flower names and their colours. The teacher asks the children who had yellow, red, pink, blue-violet flowers to stand up next to them and repeat their names. In the next activity the coloured flower cut-outs will be put onto the canvas.

### ACTIVITY NO.5: COLORFUL MEADOW OR DULL FIELD?

**The main goal:** Children will learn the difference between a single-plant field (monoculture) and a species-rich meadow.

**Time:** 10 min

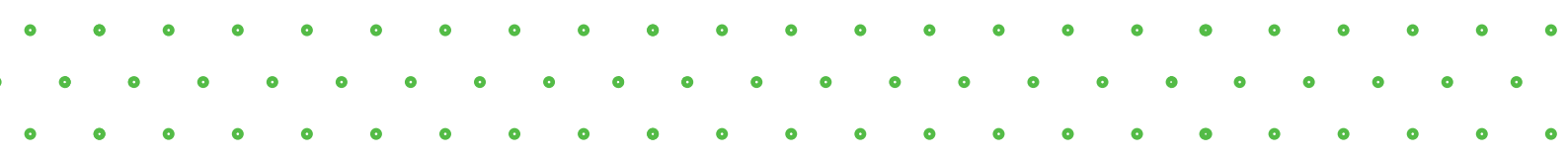
**Place:** Indoors

### Tools:

- single coloured fabric or scarf symbolizing the field (e.g. yellow as rapeseed), preferably to cover one half of the canvas (to fit the canvas size)
- pictures of single coloured vegetables, e.g. onions) (**Attachment 4.5**)
- pictures of vegetables popular with children, e.g. carrot/peas/corn. (**Attachment 4.5**)
- 2 images or real photos sized min. A4-A3 of a single coloured field and variegated meadow (**Attachment 4.5**)
- magnets – 2 pieces per flower

## DESCRIPTION

The teacher will cover one half of the natural canvas with a single colored cloth/scarf (representing a field with 1 crop). When children have painted and cut flowers, invite them to put/plant their flowers on a green open area of the canvas. Point out the difference in color of each half of the meadow and ask them which part of the meadow is more beautiful and colorful. Show them pictures of the meadow and field and explain



to the children that a meadow resembles a plate with food. When the plate is full of only one type of food, it is not so colorful and perhaps not as tasty. For example ask, “*Who would like a plate full of onions?*” A choice of different vegetables, would help us find something that he/she likes. The same applies to insects. A meadow full of different flowers attracts many insects, contrary to a field full of only yellow flowers. Share the pictures around the class and get the children to stand next to the picture of the vegetables they like most. In conclusion mention that the more varied is our diet, the healthier it is for us.



At the end of the session remind the children which part of the meadow is healthier. Explain to the children that although we need fields to grow crops (single coloured cloth/scarf), a diverse or varied landscape is better because it provides homes to a variety of insects/animals. It is preferable to alternate fields with natural landscape e.g. meadow or strips of trees or shrubs. A diversity question to ask the children: “*Where do more insects prefer to come?*” Thank the children for making a beautiful colorful and healthy meadow full of flowers that now attract a lot of insects.



## ACTIVITY NO.6: DIVERSE MEADOW AS HOME FOR POLLINATORS

**The main goal:** Children will learn about 4 types of insects living in the meadow and understand the importance of meadow diversity.

**Time:** 10 min

**Place:** Indoors/outdoors, depending on weather conditions

**Tools:**

- individual images of 4 species of flowers from *Activity no. 4* (**Attachment 4.4**)



- laminated images of colorful flowers growing on meadows (meadow clover, dandelion, poppy, peach bellflower) with one pollinator (e.g. scarlet admiral, honeybee, bumblebee, green rose chafer) (**Attachment 4.6**)

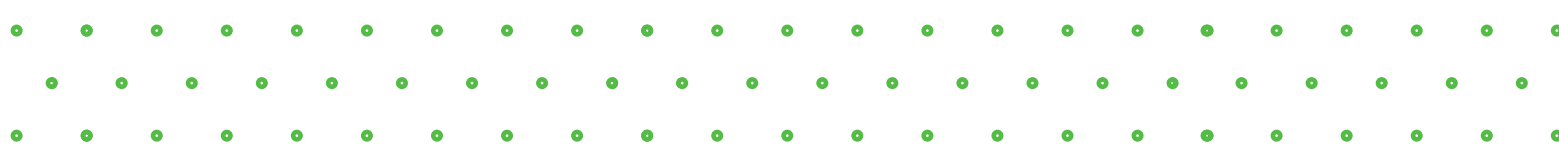
## DESCRIPTION

The teacher prepares the same laminated pictures of different flowers made in Activity no. 4 with different insects sitting on them (one flower with a pollinator for each child). Show the children pictures of 4 species of flowers and get them to repeat their names together.

As the children name each type of pollinators (insect friends) they also imitate the movement of each species. Give each child a flower with an insect and let them place this flower on the same flower that is already on the canvas so that it overlaps it. Every time a child goes to put an insect on a flower, the child will mimic its movement and all the children will repeat the name of the insect (depending on the age we can add or repeat the name of the flower). Flowers with insects can be laid by species (e.g. in groups of butterflies). The child mimics the movement of a butterfly and names the type of insect on the flower.



The teacher asks why there are insects on the meadow. Through this activity, the children will understand that it is due to the greater number of flowers added to the meadow. It is evidence of diversity (having many different species) and that means our meadow is healthy.





## ACTIVITY NO. 7: LET'S PLANT A SEED

**The main goal:** Children will learn how to contribute to increasing the diversity of plants and insects around them.

**Time:** 10-15 min

**Place:** Indoors

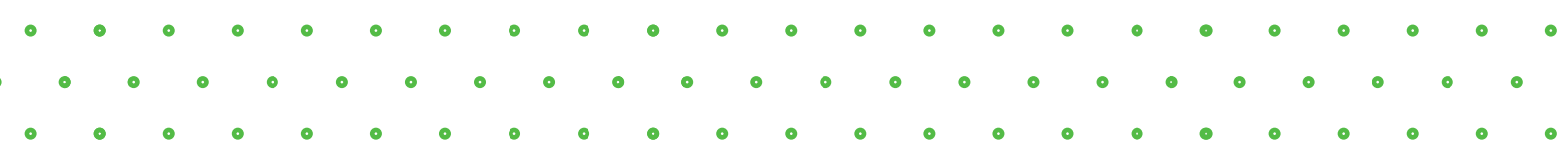
**Tools:**

- small flower pot with a hole on the bottom
- seeds of local flower species in different colors (marigold, forget-me-not, flax, hyssop, etc.)
- soil
- plastic mat/PVC tablecloth/old newspaper to cover the table in the case of planting flowers indoors.
- for kindergartens – images of sun, water, soil, soil profile (for better imagination)
- permanent or any other marker for signing flower pots

## DESCRIPTION

Explain to children that many places around us are adapted to be used by people. Ask the children what is put on the ground so the cars can drive on it (*asphalt*). It is a solid material through which flowers hardly (if at all) grow. In the garden, people often have lawns, which they mow as soon as it grows too high and so drive away important pollinators.

To help pollinators such as butterflies and bees who live in the city, plant flowers at home on the window/balcony/garden where such insects can gather food (pollen, nectar). The children will plant the flower seeds, take care of them while they grow and intently observe the benefits to the insects. First, find out what the flowers need. Where do flower seeds grow? *In the soil*. What do they need to grow? *The sun and water*. The teacher will show the children a picture for each answer.



Before starting the work with the flower pots, mark each of them with the pupils' names. Then commence planting. The children can leave the soil bag/container open, when planting outdoors, but should be careful not to waste the soil. Loosely fill the pots to three quarter full with soil. The children will follow the teacher and form a hole in the pot with a finger to create a place for approx. 3 seeds which are handed out by the teacher (e.g. 3 seeds of marigold). Pour the seeds into the hole and gently cover with some soil. Water the seeds so that the substrate remains moist but not wet. Put the pots with planted seeds out on the balcony or on the sunny window sill.



## ACTIVITY NO. 8: MEADOW ORCHESTRA

**The main goal:** Review the diversity of the meadow including the recognition of various “meadow” sounds. Final reflection, repetition of new knowledge, and highlighting opportunities to help and solve situations.

**Time:** 10 min

**Place:** Indoors/outdoors, depending on weather conditions

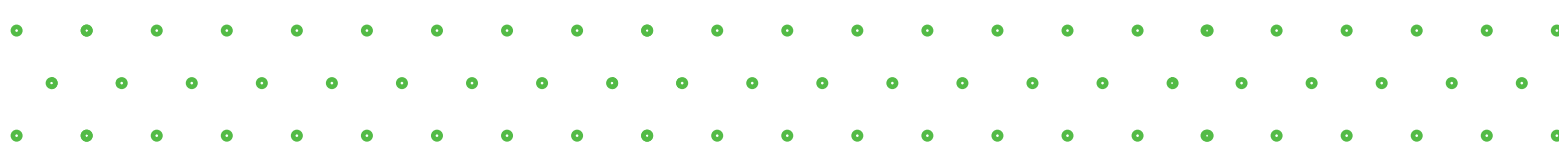
**Tools:**

- natural materials – pebbles, poppy heads, wooden sticks and others
- possibly pictures of a field cricket, common green grasshopper, etc.
- **recorded sounds of the meadow** (e.g. field cricket, common green grasshopper and bees on the meadow to create an atmosphere)

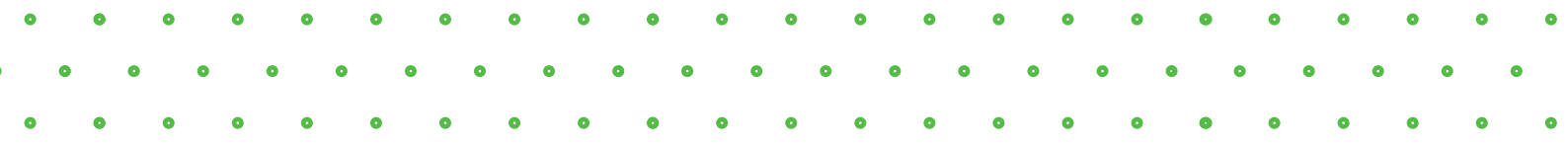
## DESCRIPTION

The teacher mimics the atmosphere of the meadow by playing a recording with different sounds of the meadow and ask the children what sounds they hear on a meadow. *Who makes these sounds? Can they identify any kind of insect?* (e.g. chirping field crickets, humming bumble bees, etc.). The teacher then leads the children in remembering the meadow orchestra that was in the story earlier on; the insect played Ode to Joy by Ludwig van Beethoven every year. We do not have meadow insects here, but we can use things from nature that can copy what we find on the meadow. Every child now gets one natural material in their hands, sits in a circle (on a carpet or outside on the grass) and, according to their own imagination, presents their musical instrument. Then together pick a rhythmic song with the theme of flowers or spring, and accompanied by singing, the children will beat/knock/blow/rub with the natural materials together. So they will create a meadow orchestra.

At the end of the program, ask the children to stay in the circle for a while. Thank them (in kindergartens do it in the name of the Meadow Empire) together with Lady Butterfly and ask them: *“Why and for whom is the meadow important? Why is grazing and*



*mowing important to meadows? Which four meadow plants do you know? What do you think is biodiversity/diversity?"* Whenever a child answers correctly, the rest of the children can cheer them on by playing/drumming with the instruments. The teacher concludes the program with the words: *"I believe that thanks to you, children, our country and our meadows will be colourful and full of useful pollinators."*



THE ENDANGERED SPECIES

# THE LIFE STORY OF THE BELUGA



## Abstract:

This story is based on the real environmental problem of fish migration and through a variety of activities, children will be introduced to the river and the impact of human activity on the life of the once-common Danube species the Beluga Sturgeon.

## Educational objectives:

### 1) Environmental goal of the program:

Children will acquire knowledge of the river ecosystem where the Beluga Sturgeons are located, what makes up the ecosystem and learn its importance. They will understand what migration is and how human activities can affect river life.

## 2) Measurable outcomes:

- Children will learn where the Danube flows, its specific qualities and describe at least two inhabitants of the river.
- Children shall explain in their own words the terms “migration” and “endangered species”.
- Children will explain how fish adapt to living in the water.
- Children will create their own paper fish – the Beluga Sturgeon.



### ACTIVITY NO. 1: READING THE STORY

**The main goal:** Motivating the children

**Time:** 15 min

**Place:** Classroom (or outdoor classroom)

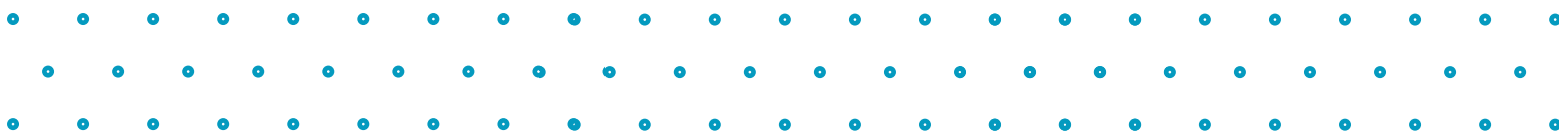
**Tools:** The book Extraordinary Adventures of Tola, Pola and Rascal

## DESCRIPTION

The teacher will read **the story on the website** and ask questions.

### Examples of questions:

*What does it mean endangered species? Why are they endangered? What was the purpose of Raluca's adventure? How can we help Raluca?*





## ACTIVITY NO. 2: WHAT DOES THE RIVER HIDE?

**The main goal:** Provide the information on the river ecosystem, the Beluga's birthplace and habitat.

**Time:** 15 min

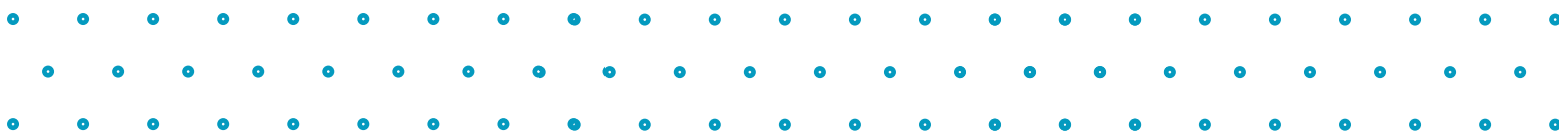
**Place:** Classroom (or outdoor classroom), on the carpet or on the ground

### Tools:

- the book "The Extraordinary Adventures of Tola, Pola and Rascal"
- MP3 player with river sounds (2 min)
- bands of blue fabric (for the river and its arms—approx. 3 meters long and 0.5 meters wide)
- real nature artefacts from the river and surroundings (e.g. river shells, duck feathers, pebbles, etc.)
- blue string for the sea boundary
- photo of the Danube in Bratislava, a photo of the Danube Delta (**Attachment 5.2**)

## DESCRIPTION

The teacher will imitate the river environment by playing the sound of the river from the MP3 player. Then asks the children questions related to the story. The teacher then follows on with the story: *Do you remember where the story took place?* (on the river Danube – create the river with the blue cloth on the ground together with children, add real nature artefacts from the river and surroundings (river ecosystem), mark the city of Bratislava by one photo and the place where the river flows into the sea by another one (Danube Delta), mark the sea border with a blue string).



*Who helped Tola, Pola, and Rascal? Now imagine you are such a huge fish! Does anybody know how big an adult Beluga Sturgeon fish is? Let's show you:* Now invite five children to stand side by side holding hands to form "snakes" revealing the length of the Beluga Sturgeon which measures roughly 7.5–8 meters long. Then ask children to swim along the river and into the sea like a Beluga Sturgeon. *Children, where did Raluca come from? (from the far Black Sea – children show this place on the ground).*



### ACTIVITY NO. 3: (NON) DANGEROUS MIGRATION

**The main goal:** Get to know the Beluga Sturgeon and the term of migration. Understand the main reasons for the migration of some animals, specifically the Beluga Sturgeon fish.

**Time:** 20 min

**Place:** Classroom (or outdoor classroom)

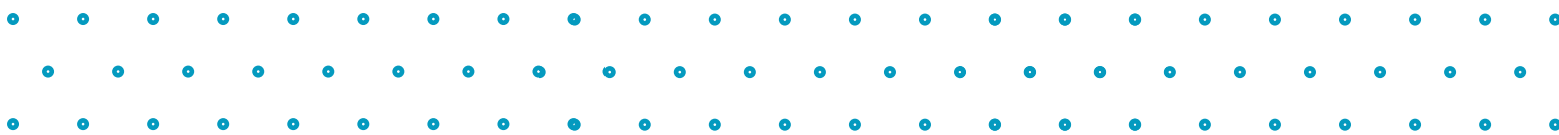
**Tools:**

- map of the migration of the Beluga Sturgeon, picture of Gabčíkovo dam (**Attachment 5.3**)
- bench
- coloured paper (paperboard)
- models of different Danube fish (northern pike, zander/pike-perch, european perch, common bream) (**Attachment 5.3**)
- 1 wooden pin/peg for each Beluga Sturgeon (1 pin/peg for 5 children)
- bony plates – scutes made from felt (depending on the number of children – 1 Beluga Sturgeon has two sets of labels)
- 1 paper model of a tail for each Beluga Sturgeon (**Attachment 5.3**)
- blue string for sea boundary and yellow for spawn area boundary

## DESCRIPTION

The teacher: *Do you remember why Raluca migrated such a long way* (hundreds of kilometres) *from the sea to below the city of Bratislava?* (She wanted to lay eggs to preserve her lineage/origin/species, as her grandmothers did). Her lineage/origin/species is very old, as Beluga Sturgeons have been living on Earth for over 200 million years. That's why today they are called "living fossils".

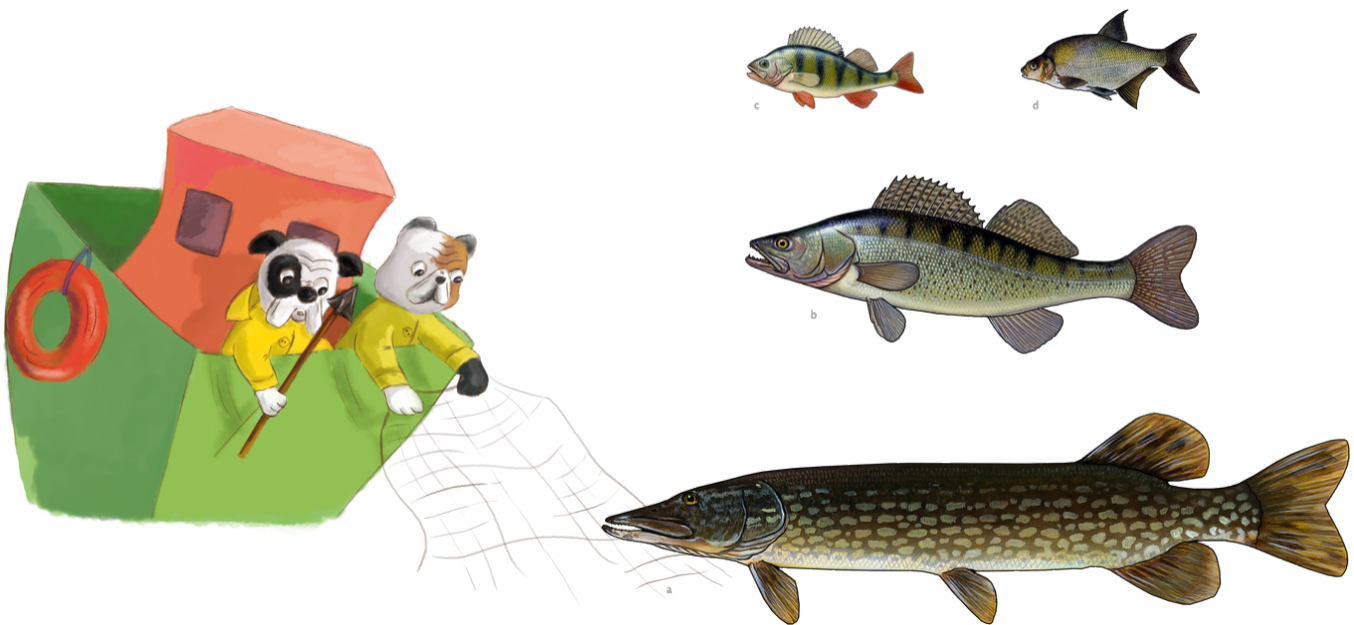
*Before you go on a journey, it is very important to remember what you need to survive. What would that be? FOOD – you must catch something. What do Beluga Sturgeons catch? They are such huge fish* (with a mouth represented by a wooden pin)! *And what do these big fish eat?* (e.g. smaller river fish). *Do you know any other Danube fish?*



The teacher shows the children different species of Danube fish with life scale models, or at least of relative size and places them in the river (on the ground).

Now the teacher invites the children to make groups of five and pretend to be a Beluga Sturgeon (in a group of 15 there will be 3 Belugas, in a group of 20 children there will be 4 Belugas, etc.).

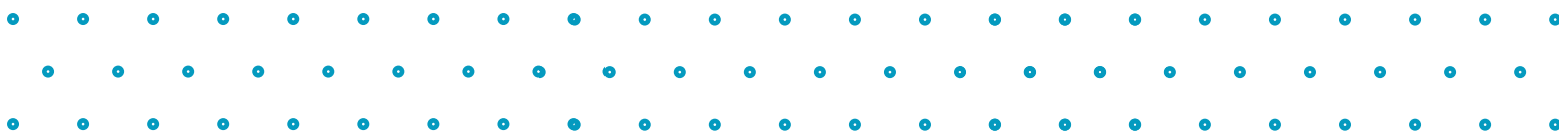
Every child represents a part of a Beluga Sturgeon and is given one function: the 1st child gets a wooden pin. **Their task** is to catch/hunt at least 1 fish from the river (pin/peg = mouth; plus 4 barbels that help them find food) while migrating from the sea to Bratislava; the 2nd child opens and closes his mouth as their gills breathe (gills – breathing); the 3rd and 4th child receive bony plates – scutes made from felt (scutes – protection) and the 5th child moves with a paper tail from side to side (tail as a rudder – movement). Each part of the body is very important for survival during a long journey. For the smallest children, we can simplify the task and each child will represent the Beluga Sturgeon with a pin/peg in their hand (without functions).



Before the migration begins, it must be clear to the children where the river is (blue cloth on the ground), where they migrate for spawning (the photo of Bratislava, behind the yellow string) and where the sea is (behind the blue string). Once again, the teacher repeats it to the children. Use the entire classroom for the game.

### 1st ROUND (swimming as a Beluga Sturgeon):

It is autumn and before going on the journey, all the Beluga Sturgeons (about 3-4 children out of 5) gather in the sea (behind a blue string). Their aim is to migrate safely



upstream, to spawn in a place near Bratislava (above the border marked by a yellow string and a photo of Bratislava). The children will now identify themselves with the role of the Beluga Sturgeon and their functions – they make a “test voyage”, by swimming upstream to Bratislava and back to the Black Sea.

### 2nd ROUND (food):

In order to survive such a long journey, they must catch (with a wooden pin/peg) at least one fish during the migration. When they reach their spawning place, the teacher checks to see if each child has caught a fish and how many survived. After that they migrate back to the sea, respecting the same rules.

### 3rd ROUND (danger – poachers):

*Can something stop/threaten the Beluga Sturgeons during their migration? Remember what threatened Raluca when she met Tola, Pola and Rascal?* Bulldogs – poachers! The teacher will be a poacher. The teacher describes his role: during a game of migration, he/she sits down by the river and represents a poacher who hunts with his hands. If any Beluga Sturgeon comes within the reaching distance to the poacher, the poacher touches or catches it. Caught fish can't continue its journey.

### 4th ROUND (another danger – river dam):

Now, the teacher blocks the river with a bench so that the children cannot get to the other side. How do Beluga Sturgeons/children behave? How do they feel? (confused, etc.) Ask the children what the bench represents? The river dam which cannot be safely crossed (in the story it was the Gabčíkovo River Dam, but the lowest dam is the Iron Gate II about 860 km from the Danube's delta). It completely stopped the Beluga Sturgeons from going to their spawning places. *What can we do to help the Beluga Sturgeons?* Continue with the following *Activity no. 4*.

## ACTIVITY NO. 4: RETURN THE BELUGA STURGEONS BACK INTO THE RIVER

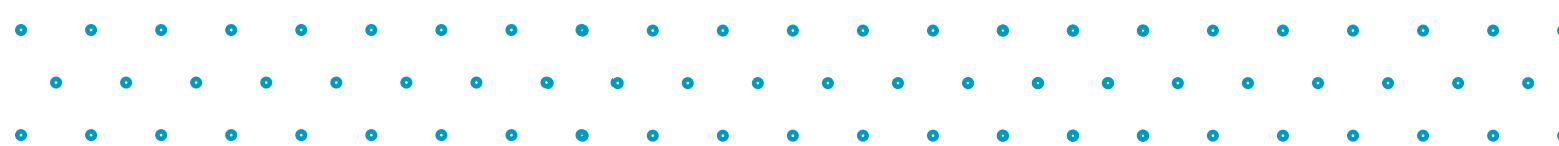
**The main goal:** Identify the main features of the fish (Beluga Sturgeon) and its adaptation to living in water.

**Time:** 10-15 min

**Place:** Classroom (or outdoor classroom) – on the bench

#### Tools:

- coloured papers
- pieces of fabric
- colour-box/dyes
- picture of a fish flow channel (**Attachment 5.4.1**)
- paper model of Beluga Sturgeon (**Attachment 5.4.2**)
- glue
- thin string
- scissors



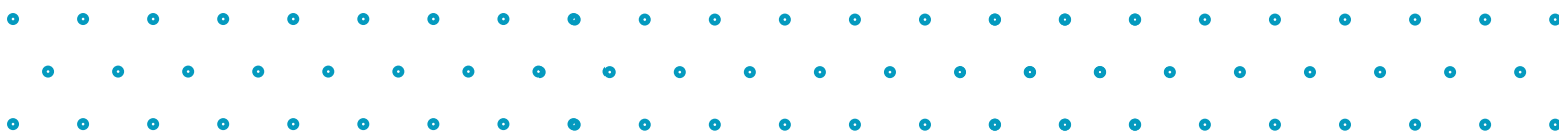
## DESCRIPTION

The teacher explains the activity: because of the poaching and construction of large dams across the Danube, almost all Beluga Sturgeons became extinct (worldwide in the IUCN Red List they are critically endangered CE, in Slovakia regionally extinct RE). The Beluga Sturgeons in the story are waiting for a solution and remember that they live up to 100 years old. One that could be brought by children like you. Does anyone have an idea how to help them?

**Suggestions for guiding the children:** *Let's talk about the importance of migrating (to preserve the genus and biodiversity of a species)! Do not pollute rivers (keep the river clean)! Let's educate others about the Beluga Sturgeons (give talks, have museum exhibits, read books, etc.). Let's suggest some safe paths/fishways through which they can cross dams (show the children an example of a functional fishway in the picture)!*



The teacher hangs up a photo of a big Beluga Sturgeon and prepares artwork material and paper models/dummy of Beluga Sturgeon for each child so that everyone can create their own fish. The children will learn the typical features of the Beluga Sturgeon's body – a dark grey back, light grey hips and a white belly (using dyes, coloured paper), huge lower mouth with no teeth (almost across the entire width of the head), 4 barbels on the lower jaw (using 4 pieces of string), bony plates or scutes (5 rows of scutes: 1 on the back, 2 on the sides, 2 on the abdominal side – e.g. from paperboard), an elongated nose – snout, typical long forked heterocercal tail, the top tail is longer than the bottom.





## ACTIVITY NO. 5: WHY ARE BELUGA STURGEONS IMPORTANT?

**The main goal:** Summarising and feedback – consolidation of knowledge, awareness of the importance of each species and focus on various solutions through the positive emotional experience of the child.

**Time:** 10 min

**Place:** Classroom (or outdoor classroom) – on the carpet/on the ground

**Tools:** Large paper model / dummy or pillow in the shape of a Beluga Sturgeon (or coloured cards for dividing into groups)

### DESCRIPTION

Divide the children into four groups and let them briefly explain the following themes (marked in bold) to each other:

**Group 1** – What is migration (*What is associated with migration? What kind of animals migrate and why?*).

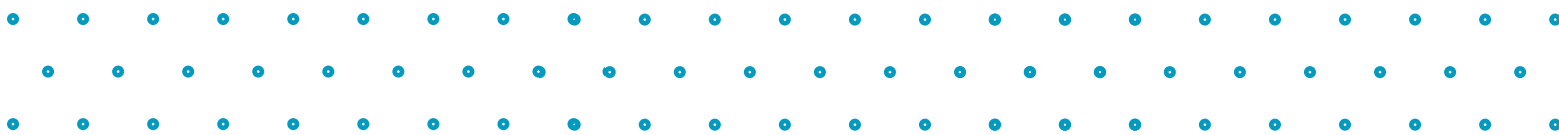
**Group 2** – What is an endangered species (*When is a species endangered? Can you name any?*).

**Group 3** – Describes the river Danube and minimum two inhabitants of the river (*Where does the river flow? What lives by/in the river?*)

**Group 4** – How do fish adapt to live in the water (*See their body – fins, body shape, scales, gills?*)

Finally, let the children sit in a circle and put a yellow crown on the Queen Beluga Sturgeon announcing her the biggest fish ever to have lived in the Danube. The children can give a message to the river and its inhabitants. Say it now. *Why do we want the Beluga Sturgeon to live in the Danube?* (e.g. an important part of the river, biodiversity). In reflection, let's share the children's impressions. When it comes to the teacher, he/she closes the program saying: *"I believe that thanks to you, children, one autumn day again, we will see Raluca and her friends on the river Danube as they swim up the river to lay eggs to preserve their old species."*

At the end of the activity let the children release their paper Beluga Sturgeon into the river (the middle or lower Danube - where they are missing now - outside the Delta).





## ACTIVITY NO. 6: DESIGN SOLUTIONS

**The main goal:** The children will name different ways to help fish migrate.

**Time:** 20 min

**Place:** Classroom – on the bench

**Tool:** Existing fishways photos, paper, scissors, clay modelling / plasticine, colour-box/dyes etc.

### DESCRIPTION

First, explain to the children that a fishway is a passageway for fish (as well as other aquatic animals) and is a substitute path that will allow them to safely cross the upstream barrier (dam). Show the photographs to the children and allow the children to explore their imagination and creativity.



## ACTIVITY NO. 7: WHO SAID IT?

**The main goal:** Memory learning; can be linked to foreign language phrase learning.

**Time:** 5-10 min

**Place:** Classroom (or outdoor classroom)

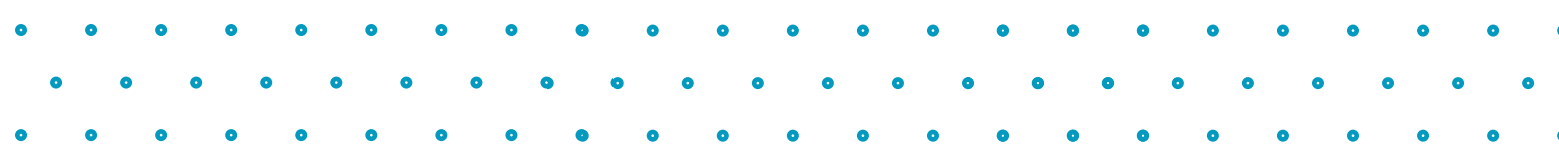
**Tools:** Book "The Extraordinary Adventures of Tola, Pola and Rascal", printed pictures of 5 characters from the story ([Attachment 5.7](#)), 5 cards with statements.

### DESCRIPTION

The task for the children (by age) will be to join the characters in the story with the correct statement below and to arrange the statements in the order they followed in the story (see the number in parentheses).

#### Examples of statements:

- Rascal the dog: *This will be the best autumn adventure we could ever imagine!* (1)
- Beluga Raluca: *I come from the Black Sea, it's very far away from here.* (2)
- Pola the owl: *But... aren't Belugas an endangered species? Are you sure you can catch them?* (3)
- Bulldog the poacher: *We were not hunting, sir. It's not our fault that a Beluga got caught in our nets. We were only protecting our ship and ourselves.* (4)
- Tola the kitten: *It's not fair. As soon as we come back from our holidays, we will find out what to do to help you!* (5)



# CLIMATE CHANGE TIME IS UP WE NEED TO ACT!



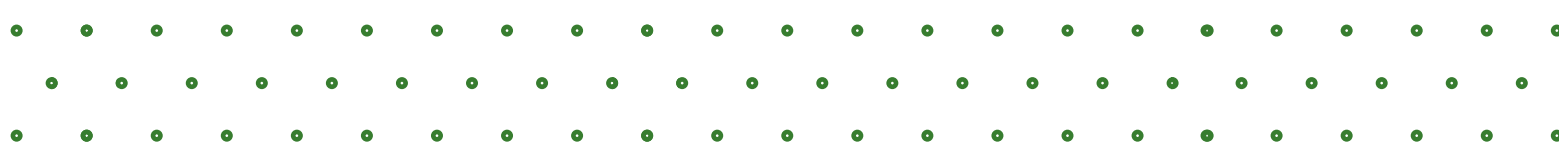
## **Abstract:**

The tale Time is up, we need to act tells about the climate change summit that took place in Katowice (Poland) in 2018. During the summit, world leaders tried to create a plan to reduce CO2 emissions. The heroes of the tale: Tola the kitten, Pola the owl, Rascal the dog and Greta the reindeer, also struggled to find a solution to this problem. It turned out that they were more determined to save the world than the adults.

## **Educational objectives:**

### **1) Environmental goal of the program:**

Children learn about the concept of climate change and understand that it is one of the greatest environmental problems humanity is facing today. They also find out how they can prevent climate change themselves.



## 2) Measurable outcomes:

- Children understand the difference between a weather and a climate. They can explain the differences between them.
- Children can explain why Earth's climate is changing and why melting glaciers pose a threat not only to animals, but also humans.
- Every child creates their own Aurora Borealis artwork.
- Children learn how to reduce the negative impact on the climate and how to stop its changes.



### ACTIVITY NO. 1: READING THE STORY

**The main goal:** Introducing children to the subject

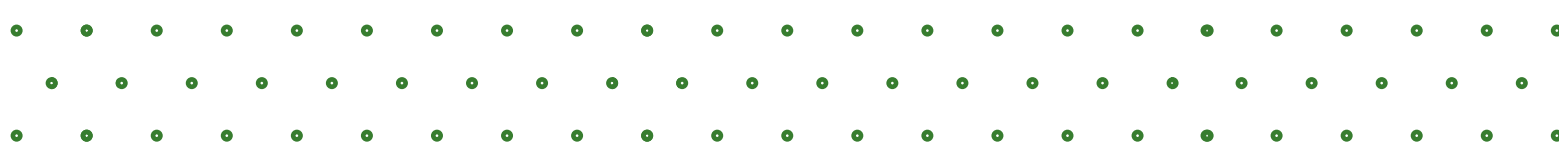
**Time:** 20 min

**Place:** Classroom

**Tools:** The book "The Extraordinary Adventures of Tola, Pola and Rascal"

### DESCRIPTION

The teacher reads out the tale Time is up, we need to act from the book "The Extraordinary Adventures of Tola, Pola and Rascal" or the [website](#) and asks questions: *What is a climate change summit? Which animals took part in the discussion about climate change? What were the animals concerned about? What arguments of the adult delegates/summit participants did Greta and her friends hear? Why do we need to take care of our planet? Can children also fight against climate change?*





## ACTIVITY NO. 2: CLIMATE OR WEATHER?

**The main goal:** Teaching children the meanings of 'weather' and 'climate'.

**Time:** 20 min; a month for filling in the weather calendar

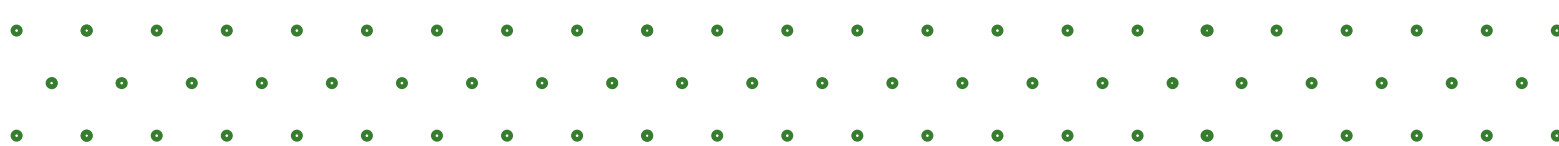
**Place:** Classroom

**Tools:** Weather calendar and weather markers ([Attachment 6.2.1](#)), photos of crops ([Attachment 6.2.2](#)), photos of different weather conditions ([Attachment 6.2.3](#)) and climate zones ([Attachment 6.2.3](#)).

### DESCRIPTION

What is weather? What is climate? These are questions which should open every discussion about climate change. Children usually confuse the two terms.

1) First, the teacher asks: *When we get up in the morning and look outside to know what to wear on, do we check the weather or the climate? When we say it's rainy or sunny, do we describe the weather or the climate?* These are questions about the weather, which is the state of the atmosphere at a given time. The weather may change as time passes. We also talk about weather anomalies which are departures from a typical weather pattern in a given geographic area. When we describe the weather, like during a weather forecast, we usually talk about the temperature, the type and amount of precipitation, the speed of the wind, cloudiness and other atmospheric phenomena, like storms or hailstorms.




2) The teacher announces that during the next month children will have to check the weather daily and record it in their weather calendars. For this task children will need the weather calendar and weather markers included in the **Attachment 6.2.1**. Depending on the weather outside, children will use appropriate sticks (weather markers). This task will help to consolidate children’s knowledge about different weather conditions and remind them that weather is defined as daily changes in the state of the atmosphere.

3) The teacher asks whether the climate can be described based on the weather on a given day. The answer should be ‘no’, as climate is defined as the usual condition of the atmosphere – the information gathered by meteorologists over a number of years.

The teacher may give an example of a farmer who decides whether he should harvest crops the following day. He makes his decision based on the weather forecast. On the other hand, the decision concerning the type of plants he should grow – rice, manioc or rye (which are typical in different climate zones) – is made based on the type of climate zone where the farmer lives. Rice likes warmth and humidity, manioc prefers to grow in the tropical climate, whereas rye is popular in the temperate climate. The teacher may show the crops on photos included in the **Attachments 6.2.2**.

4) The teacher shows the children photos of climate zones and weather conditions (**Attachments 6.2.3 and 6.2.4**) and asks: Which picture shows weather and which shows climate?



### ACTIVITY NO. 3: GLOBAL WARMING EXPERIMENTS

**The main goal:** Teaching children about climate change and its causes.

**Time:** 40 min

**Place:** Classroom

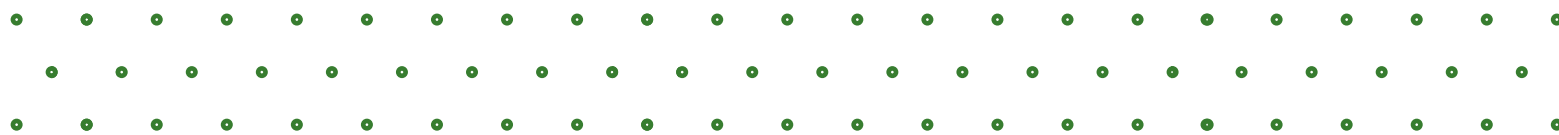
**Tools:**

- 2 jars and 1 jar lid or 2 boxes and 1 lid
- 2 thermometers
- 1 big blanket

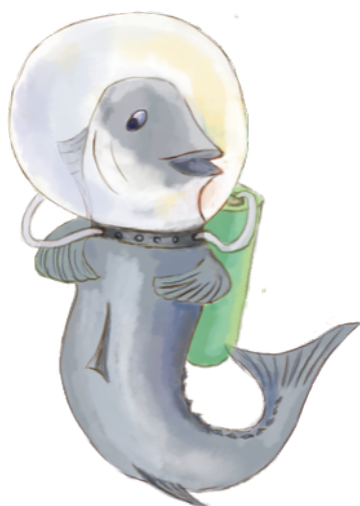
## DESCRIPTION

In the tale *Time is up, we need to act*, Greta the reindeer tries to stop climate change. *Do you know why the climate is getting warmer?* First, the teacher asks the question and children try to answer it. Then, the teacher invites children to conduct two experiments.

1) The teacher puts a thermometer into each jar/box, then screws the lid/closes one of them, leaving the other open. The jars/boxes are then left in a sunlit place for some time.



After around 30 minutes children open the jar/box, check the temperature inside and compare it with the temperature in the open jar/box. *In which jar/box the temperature will be higher? Why?* Children try to explain it.



2) If they do not know, the teacher conducts the second experiment. Ask the children to stand close together and covers them with a big blanket. Children should stay like that for several minutes. After taking off the blanket, children are asked whether they were hot. *When did it feel hotter? Standing together under the blanket or sitting separately without it?*

This is analogous to what happened to the air in the jars/boxes. When the jar/box is closed, the air inside warms up, because the sun heats it up. The heat cannot escape because of the lid and consequently, the temperature inside rises. The same happens to our planet. Greenhouse gasses surround the Earth like a blanket. Sun rays can get through, but the warm air cannot cool down, because it is heavier than the greenhouse gasses and cannot escape. The air gradually heats up, causing climate change and therefore reducing the production and emission of greenhouse gasses is so important.



#### ACTIVITY NO. 4: EXPERIMENTS WITH MELTING GLACIERS

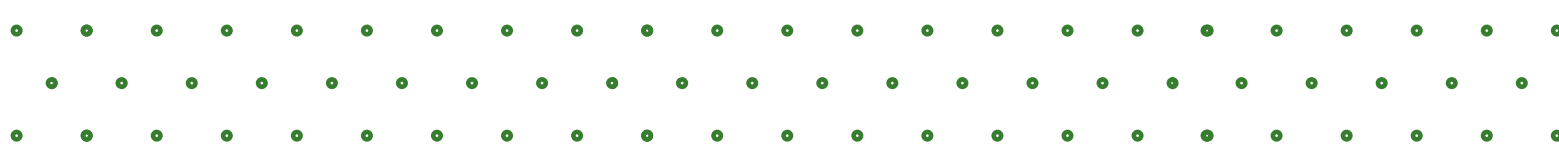
**The main goal:** Teaching children about melting glaciers and the causes of this phenomenon.

**Time:** 20 min

**Place:** Classroom

**Tools:**

- 2 large glasses or other containers to freeze water
- water
- a large container (preferably transparent)



- a few small stones marker
- animal figure/small doll (optional)

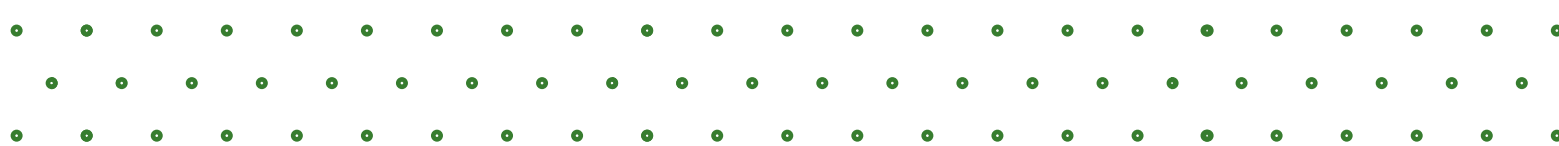
## DESCRIPTION

*Why are the glaciers melting? Does climate change affect that? What are the results of melting glaciers?* This experiment will make children aware of one of the dangerous consequences of climate change.

1) It comprises of two parts. In the first part the children will find out what happens to a glacier when the air temperature rises. The teacher freezes water in a glass, then removes the ice cube which will serve as a glacier. The teacher pours water into a container (preferably transparent) and marks its level. Then, children put the ice into the water and watch whether the water level changes. They then mark the new water level.



A similar phenomenon is observed when, due to climate change, chunks of ice tear off glaciers and start to drift in the ocean. Ice is lighter than water, so it is not fully submerged. Its tip is always visible, though the remaining 90% of it stay below the water surface. Huge chunks of ice push the water up and its level rises. If there are more such glaciers in the oceans, some islands, as well as countries and cities in the coastal areas may be flooded. This effect of climate change will be presented in the second part of the experiment.



2) The teacher puts stones into the bigger container and places a doll/figure on top of one of them. They symbolise the islands and their inhabitants. Then, the teacher puts the ice cube into the dish, which represents a glacier. Children carefully pour water (the sea) into the container. The water shouldn't cover the stones entirely – it should not touch the figure/doll. This installation should be left for around half an hour, depending on the temperature inside the classroom. After that time, children check out what has happened to the glacier, the sea, the islands and their inhabitants. The glacier should have already melted, causing the rise of the sea level – the water should now reach the figure/doll.

This experiment illustrates one of the consequences of climate change. Currently, almost all glaciers around the world are melting down. Since the 1980s the melting rate of glaciers has significantly increased. New York, Los Angeles, Mumbai and Tokyo may be entirely flooded because of the warming climate.



### ACTIVITY NO. 5: AURORA BOREALIS ARTWORK

**The mail goal:** Creating a work of art using knowledge about climate zones.

**Time:** 30 min

**Place:** Classroom

**Tools:**

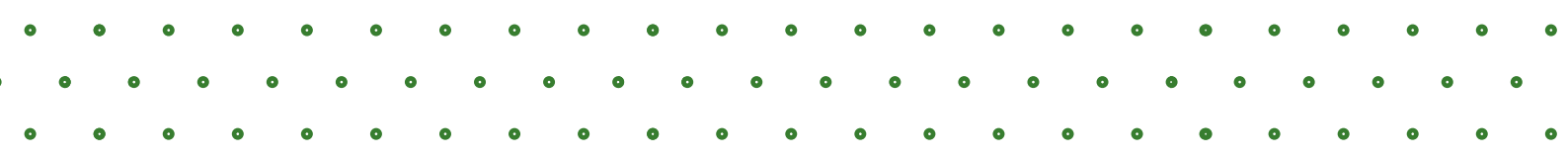
- glue
- shaving foam
- black paper
- dry pastels
- paints (optional)
- **pictures of Aurora Borealis**

## DESCRIPTION

Melting glaciers cause irreversible changes and destruction of whole ecosystems. The first of such that already suffers is the Arctic Circle. We suggest taking inspiration from nature and paint the Aurora Borealis. To do this children will need dry pastels – they are perfect to draw the sky, easy to use and will allow them to create an interesting effect on the picture.

Before children settle down to work, the teacher shows them photos of the Aurora Borealis.

Children use the thicker side of the pastels to draw lines and zigzags on the black paper. Then, they smear them with their fingers, to get rid of sharp edges. After the work is done, the teacher sprays it with pastel fixative or hairspray.





While the children are painting their pictures, the teacher prepares the “fluffy” paint, mixing glue and shaving foam (50:50 ratio). The paint will be used to create snow. It is vital to keep the proportions, or else the paint will not be fluffy or will not dry. The snow can be white, but it will be more interesting to add one or two colours to the paint, e.g. blue or violet.

Until the fluffy paint dries, children may shape snowy hills and glaciers. After the paintings are done, they should be put away for about an hour to fully dry. The fluffy paint will not be sticky, but smooth and elastic.



## ACTIVITY NO.6: CLIMATE MEMORY GAME

**The main goal:** Introducing the ways to reduce climate change.

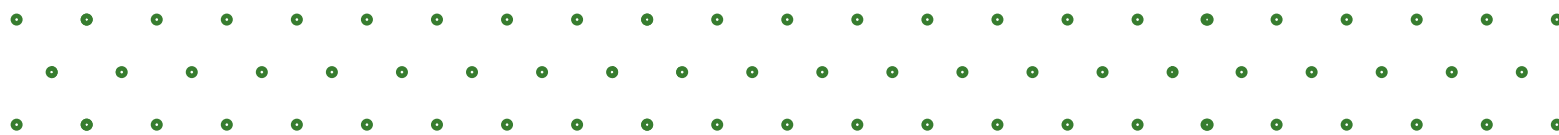
**Time:** 10 min

**Place:** Classroom

**Tools:** Memory cards ([Attachment 6.6](#)), scissors

## DESCRIPTION

*What can we do to at least reduce climate change?* There are plenty of ways, but the most important ones are included in the picture below.



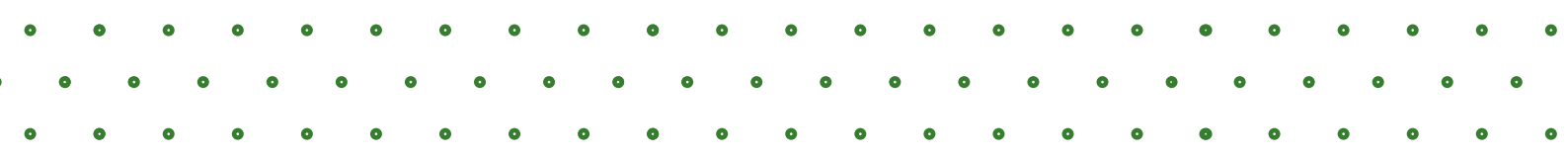


- *Save energy*
- *Save water*
- *Use energy-saving electrical equipment and renewable energy sources*
- *Choose a bike over a car*
- *Segregate waste*
- *Plant new trees and flowers*
- *Eat less meat and dairy products*
- *Choose a train over a car*

After introducing the ways to stop climate change, the teacher invites children to play the memory game. The teacher prints out the memory cards from the **Attachment 6.6** on a thick paper or laminates them. The memory cards are a set of two sheets: one with the ways to stop climate change, the second with pictures presenting non-ecological behaviour. The cards should be cut out beforehand and put on a desk with pictures facing down. Children's task is to find pairs of identical pictures and determine whether they depict a pro-ecological behaviour.

The teacher chooses the first child to try (this child can be picked randomly to prevent arguments). The child chooses two cards. If they pick up a pair, they should say whether the pictures show a pro-ecological behaviour.

This pair of pictures is then put aside. If the child fails to choose a pair, the cards should be placed back with the pictures down. It is the next child's turn. The game ends when all pictures match.



# LIST OF ATTACHMENTS





## LITTER SEPARATION

**Attachment 1.2** Cards with waste symbols and bins for waste segregation

**Attachment 1.3** "Compare drawings" board

**Attachment 1.4** Types of litter and periods of litter decay

**Attachment 1.5** Templates of fish, duck and seal



## DROUGHT AND DESERTIFICATION

**Attachment 2.2.1** Pictures "Use of water in households"

**Attachment 2.2.2** Sounds of water



## PROTECTION OF BEES

**Attachment 3.2** Photos of different bees' species

**Attachment 3.4** Photos of the chambers of solitary bees

**Attachment 3.6** Pictures of the nests of solitary bees



## BIODIVERSITY

**Attachment 4.2** Photos of goats and sheep

**Attachment 4.3** Photo of the mower

**Attachment 4.4** Coloring pages with flowers

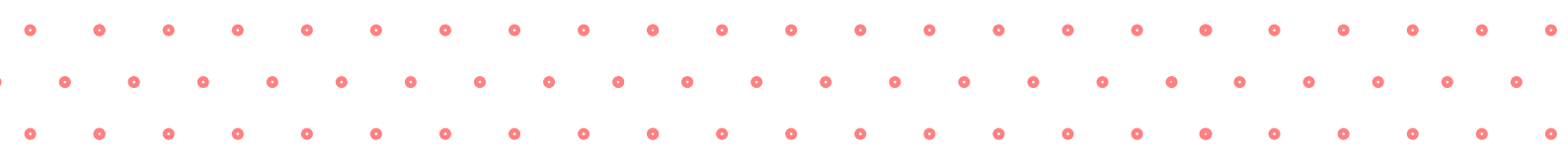
**Attachment 4.5** Pictures of vegetables, one-color field and colorful meadow

**Attachment 4.6** Drawings of colorful flowers on which pollinators sit



## ENDANGERED SPECIES

**Attachment 5.2** Photo of the Danube Delta, photo of the Danube border in Bratislava





**Attachment 5.3** Beluga range map, photo of the Gabčíkovo dam, models of fish inhabiting the Danube (a - pike, b - zander, c - European perch, d - bream), Beluga tail template

**Attachment 5.4** Photo of the channel for fish collection

**Attachment 5.5** Drawing and photo of the beluga, beluga template

**Attachment 5.7** Printed pictures of 5 heroes from a fairy tale (Tola, Pola, Urwisa, Raluka, Bulldog)



## CLIMATE CHANGE

**Attachment 6.2.1** Weather markers and weather calendar grid

**Attachment 6.2.2** Pictures of arable crops

**Attachment 6.2.3** Photos of weather conditions

**Attachment 6.2.4** Photos of climate zone

**Attachment 6.6** Memory playing cards

