

Lesson 8. Forests. What endangers forests? Forest fires.

In this lesson pupils will be introduced to the structure and diversity of forests. Pupils will develop an understanding of the threats affecting forests and what can be done to prevent harm. The activities in the lesson will help pupils understand how significant forests are for the animals that live in them, for people as a resource, and how important forests are for the entire planet and its climate. The lesson also includes practical activities, creating a sensory trail and an insect house from natural materials collected in the forest.

Lesson duration:

depending on the duration of discussions, eco workshop and additional activities, the lesson takes 50-80 minutes.

Before the lesson:

get to know the methodological recommendations for the lesson and prepare materials to successfully plan and conduct the lesson for your pupils.

Materials necessary for the eco-workshop:

Activity 8:

1) Sensory trail: newspapers that cover the length of the trail, natural materials (chestnuts, pine cones, twigs, pebbles, acorns, etc.).

2) Insect house: 3 - 5 wooden or cardboard boxes for one house, natural materials (chestnuts, pine cones, twigs, pebbles, acorns, etc.), insect finder

Terms:

forest levels – *the structure of forests by plant height ((1) ground vegetation – moss, ferns, understory and other herbaceous plants; (2) shrubs; (3) undergrowth – young trees; (4) large, tall trees),*

boreal forest – *the natural zone, where coniferous (pine, spruce) forests grow, the climate is cold,*

mixed and broad-leaved forests – *forests with both conifers and deciduous trees (oaks, birches, aspens), the climate is temperate,*

evergreen hardwood forests – *forests with trees with hard leaves (pines, cypresses, olive trees), these forests have both a cooler and a warmer climate,*

humid tropical forests – *forests with a great diversity of plants and a humid, hot climate.*

Hand-outs (for printing):

A worksheet for pupils to strengthen the new terms and learn more about forests. You can use encyclopedias about nature, forests or internet sources to complete the tasks.

The lesson

At the beginning of the lesson introduce pupils to the behavioral rules, emphasizing that they should listen carefully because the board does not repeat information several times. In the lesson you will need to cooperate, express your opinion and be able to catch what others say. For younger pupils or pupils who find it challenging to stay focused on work for longer periods of time, dynamic breaks can be included between tasks.



Tablets can also be used for the interactive tasks.

1. Forests.

Pupils get in the mood for the topic of the lesson, discussing and expressing their thoughts about what they think a forest is, who lives there, how it forms, and how long the formation takes. For the last question the teacher can arrange pupils' guesses about the formation of a forest in an ascending order (for example, 10 years, 50 years, 100 years, 300 years), and pupils can vote, which answer seems more likely. The teacher can tell that more than 100 years are necessary for a big, diverse forest to form, which is a long time, therefore forests should be taken care of. Afterwards pupils from the six given pictures choose three that show forests, seeing that they can be different.

3. Forest layers.

Pupils put together a puzzle and strengthen knowledge about the layers of a forest. In order to do the work quickly and for all of the pupils to be able to participate, it is possible to vote for the correct options.

Additional activity.

Putting each piece of the puzzle in the correct place, you can ask pupils to tell what they remember about the particular forest floor from the previous activity, therefore strengthening pupils' knowledge.

2. Forest structure.

Pupils click on different forest levels and listen about what a forest consists of. Pupils find out that, similar to high-rise buildings in the city, also a forest has floors, starting from the lowest with moss, ferns, bilberry bushes, until the highest with trees at a height of several tens of meters.

4. Forest types.

Pupils click on the pictures and listen to information about forest types or forms, which are formed by various trees and which are found in different places in the world.

5. The importance of forests.

Pupils discuss about how important forests are to people, the world and climate. At first pupils can think individually, then discuss in smaller groups, so that everyone has the opportunity to speak out and later on share their thoughts with the entire class.

7. Harm to the forest.

Pupils listen to information and watch an animation about what harms the forest (as a result of both, human actions and climate change).

Additional activity.

You can ask pupils the question: "How to act if you see that someone does not behave in the forest and is harming it?".

6. Forest as a protective layer.

Pupils listen to information about how trees, just like other plants, take care of themselves by producing the necessary nutrients and oxygen from sunlight and water, which not only trees themselves breathe, but also other living creatures, including us, people. Pupils learn how forests help lessen global warming and protect us from the harmful rays of the sun.

Additional activity.

You can ask pupils the questions: "What other quality do we obtain from the forest?" and "Forests give us plenty goods. How can we thank the forest for the good work and take care of it?".

8. Eco workshop.

At the beginning of the eco workshop explain how important it is to take care of nature, but natural materials can be used to create goods for yourself and other living creatures. On the screen the instructions can be seen – how it is possible to create a sensory trail from pine cones, spruce branches, chestnuts, acorns and other materials that can be found in the forest. The teacher can already prepare the necessary materials beforehand, but, if the school is located near the forest, the sensory trail's components can be gathered by the whole class together. It is possible to create the sensory trail indoors, putting newspapers underneath it or, for example, in the school yard.

The second option is to build an insect house to put in the schoolyards from wooden boxes and different natural materials. After some time you can observe, what insects have settled in the new home.

Additional activity.

You can introduce pupils to the insect finder, which would help understand, what kind of insects live in the built insect house. In this way pupils would get to know the diversity of insects (ants, beetles). It is important to

9. Forest fires.

Pupils listen to information about forest fires.

Additional activity.

With pupils you can discuss the fire safety regulations in the forest, for example, that it is not allowed to play with matches there, to leave a fireplace unattended, because that way fire can quickly spread and do a huge harm to trees and other forest plants, as well as the animals that live in the forest.

11. Test “What have you learnt so far?”.

With the help of the interactive test pupils have the opportunity to test the knowledge obtained in the lesson. The test can be done by everyone together or individually, using tablets. Pupils can also be divided in small groups and invited to discuss each question and agree on the correct answer within the group.

Additional activity.

Pupils do tasks in the worksheet to strengthen what they have learned about forests during the lesson. In task 1 pupils circle everything in the picture that can pollute the forest with the colour red, as well as draw an unpolluted forest themselves. In task 2 in the word scramble the names of animals that live in the forest have to be found and circled. In task 3 pupils match the given animals with their footprints. In task 4 they help the fox get out of the maze and into the forest. Task 5 – connect the names of animals from different forests and other biotopes with their characteristics. Pupils can also complete the worksheet at home and discuss it at the beginning of the next lesson.

explain that the diversity of living creatures (plants, animals, including insects) on the planet is significant, because each and every one has an important role.

10. Forest conservation.

Pupils discuss about what a man can do to help conserve forests. At first pupils can think individually, then discuss in smaller groups, so that everyone has the opportunity to speak out, and then share their ideas with the whole class. It is important to also evoke ideas that are not only forest fire related, as in the previous task, for example, how to decrease deforestation, because forests are both a home for animals and an important support for climate preservation; how to act if you see a forest burning (call the fire-fighters); do not pollute the forest by leaving garbage there or do participate in clean-ups by picking up the garbage other people have left in the forest; participate in the planting of new forests.

12. Animals and forest fires.

To create a “bridge” to the next lesson “Animals and climate”, pupils reason what else except forest fires can cause animals around the world to suffer. Not to make pupils too sad about the injustice to animals, the conversation can be directed to find ideas, for example, how to help the animals that have lost their homes due to human activity or as a result of climate change (glaciers are melting, it is getting too hot and dry).

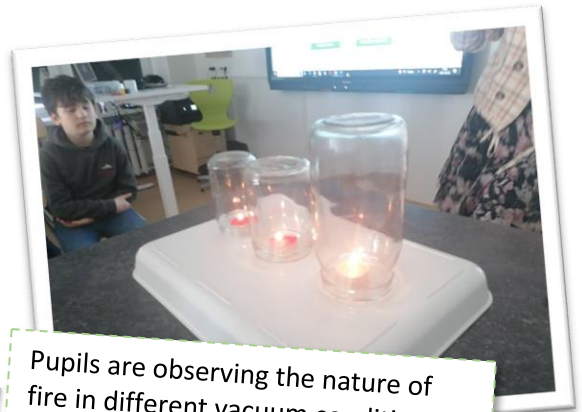
At the end of the lesson ask pupils:

What did you like the most? What new did you learn? What will you tell your parents? What else would you like to know?

Images from the lesson process



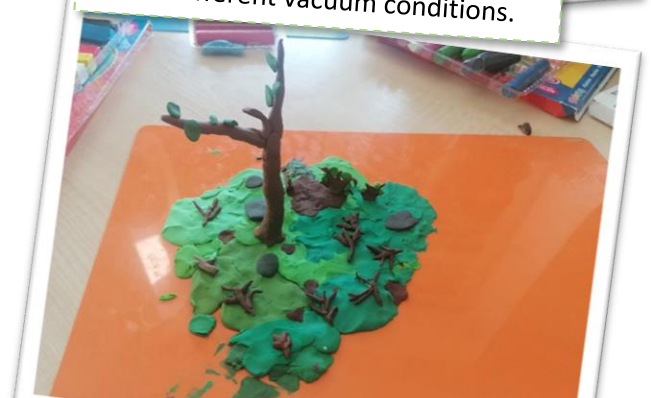
Pupils is solving an interactive task about forest layers.



Pupils are observing the nature of fire in different vacuum conditions.



Pupils are creating a sensory trail in their classroom.



Pupils are creating a forest instalation from plasticine to decorate their classroom.

Pupils are very interested in the world around them. Especially city children, who do not really have the opportunity to be in nature and the forest.

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