

## Lesson 2. Planet Earth – unique place to live. Climate as supporter of life.

In this lesson pupils are given an insight into the origin and development of life on our planet Earth. Pupils have the opportunity to learn about the importance of atmosphere, as well as the difference between weather and climate. Pupils get to know different habitats and the animals living in them, creating an understanding of the great diversity of life on Earth and the importance of climate in it.

### **Lesson duration:**

depending on the duration of discussions, eco workshop and additional activities, the lesson takes 75-105 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:**

shoe boxes, paper, carton, crayons or markers, different natural materials (for example, sea shells, rocks and pebbles, plants), scissors, glue.

### **Terms:**

atmosphere – *a layer of gas that envelops Earth (note – in the following lesson we will talk about specific gasses: oxygen, which is released by plants and inhaled by living organisms; and carbon dioxide, which is taken up by plants and exhaled by living organisms).*

climate – *a long-term set of weather conditions characteristic of a particular place.*

weather – *changes in the air in a certain period of time.*

habitat – *an area that is suitable for the existence of certain plants, animals or fungi.*

### **Handouts (for printing):**

- 1) A worksheet for pupils to strengthen the new terms and to learn more about the formation of life on Earth, climate, weather and habitats. It can be completed in class or at home (especially the last task).
- 2) Handout material – origami folding instructions from [www.origamiway.com](http://www.origamiway.com), which are required for the eco workshop (first additional activity).

## The lesson

At the beginning of the lesson pupils must be introduced to the behavioural 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. The Solar System.

In the discussion invite pupils to tell what they know about the Sun and planet Earth. Pupils may know more about Earth than the Sun.

#### Papildu aktivitāte.

To get more ideas from pupils, you can stimulate them to think, you can ask pupils an additional question: “What changes in nature when there is more sunlight and heat, and what changes when there is less of it?”

### 3. Sun activity.

Pupils listen to audio information about how the position of Earth against the Sun changes the amount of heat and light received on Earth.

#### Additional activity #1.

Pupils can listen to additional audio information – the possible cause of the Ice ages, as well as the change of seasons.

#### Additional activity #2.

By choosing one of the given four months of the year and either the Northern or the Southern Hemisphere of Earth, pupils can find out how the Earth is positioned in relation to the Sun and what season it is in the respective hemisphere of Earth in this month. To make it easier to understand, it is recommended to begin with the

### 2. What is the difference between climate and weather?

Pupils listen to audio information about weather and climate. Pupils strengthen their knowledge by arranging the given statements about weather and climate in the appropriate columns.

#### Additional activity.

To make it easier for pupils to understand the differences between the terms “weather” and “climate” and to have a visual reminder, you can ask them to complete task 1 in the worksheet by connecting the given examples with the appropriate term.

### 4. The meaning of atmosphere.

Pupils listen to information about the role of atmosphere to provide life on Earth and strengthen the new term “atmosphere”. In connection with “meteor shower”, the term “meteorite” from lesson 1 can be repeated together with pupils. A meteor is a piece of rock that falls to Earth, while a meteorite is a meteor that has already fallen to Earth. Younger pupils may be allowed to use these words as a synonym.

Northern Hemisphere and the month that is the closest to the current one.

### 5. The uniqueness of Earth.

Pupils listen to information about the fact that the most interesting thing on Earth is life. To younger pupils it can be explained that life – it is us, humans, as well as animals, plants and fungi all around us.

#### **Additional activity.**

To strengthen the opinion that life on Earth exists mainly because it is neither too close, nor too far from the Sun, you can ask pupils the question: “Do planets, that are located closer or further from the Sun than Earth, also have life on them?”

### 7. The main events on Earth.

A timeline of 5 stages is offered, where the first stage is the formation of the Moon and the fifth is the emergence of man. Pupils use the knowledge obtained during the lesson and develop critical thinking by arranging the timeline.

#### **Additional activity.**

To strengthen the knowledge, you can ask pupils to complete task 2 in the worksheet, which has a similar structure to the interactive task.

### 9. Different habitats.

In the discussion invite pupils to look at the images and to share what habitats they have seen until now and in what habitat or habitats we live in. In this activity pupils strengthen the new term “habitat”.

#### **Additional activity.**

You can ask pupils the question: “Do you know any other habitat that we did not look at?”. It could be a swamp, for example.

### 6. How was Earth created?

Pupils watch a video and listen to information about how the origination process of Earth and life up to the present day would look like if everything happened in 24 hours. To understand what they see even better, pupils can choose a specific “time on the clock” or event during the origin of Earth or life, and listen to broadened information about it. It is important to pay attention to the fact that humans, compared to other living beings, live on Earth for an extremely short time.

### 8. Where do different animals live?

Different biotopes or habitats (new term) and animals are given. Pupils have the opportunity to work in groups and look at one or several of the given habitats, choosing the animals that would live in the given habitat by dragging them to the centre of the image. Then each group briefly tells others about their habitat (the information is given when all the correct animals are in the image).

### 10. Quiz “What have you learned so far?”

With the help of the interactive test pupils have the opportunity to test the knowledge they have acquired in the lesson. The test can be taken by everyone together or individually – using tablets.

### 11. Eco workshop.

At the beginning of the eco workshop explain how important the reuse of materials as a principal of environmental conservation is, therefore used shoe boxes, paper or cardboard cuttings, also natural materials will be used instead of completely new paper sheets or brand-new cardboard boxes, which are intended for this purpose only. Pupils will create dioramas that represent a particular habitat, such as an aquatic environment and the animals and plants that live in it. Pupils will need to divide into groups and assign roles. The distribution of roles is especially important when pupils do not have the experience working in groups and when there are many pupils in the group. The number of groups depends on the amount of raw materials (shoe boxes).

### 12. Weather in different habitats.

At the end of the lesson offer a “bridge” task to lesson 3, in which pupils connect the given habitats with their characteristic weather conditions.

#### **Additional activity #1.**

To review and strengthen the terms learned during the lesson, you can ask pupils to complete task 3 in the worksheet, matching the terms with their explanations.

#### **Additional activity #2.**

To promote pupils’ understanding of weather changes both within a day and a week, you can ask pupils to complete task 4 in the worksheet – observe the weather in the nearest surroundings and fill in the calendar by drawing a corresponding picture of the weather in each day. Pupils can do this task at home and discuss it in class a week later.

### **Eko workshop has to be prepared beforehand:**

The teacher can prepare all the necessary materials in advance or prepare only cardboard boxes (one for each group), paper, cardboard, scissors (remind about safety rules!), glue, colour pencils or crayons, and if the season and weather allows, go outside together with pupils to collect all the necessary natural materials.

If shoe boxes are not available, pupils can also create habitats on A4 paper sheets. It is recommended to use, for example, pages already printed on one side, to give them another life.

An exhibition is arranged from the created dioramas and they are photographed.

Pupils will like this activity if the teacher prepares the necessary materials in the required quantity, helps pupils divide into small groups and supports them in group work.

This activity develops creative thinking, spatial awareness and group cooperation.

#### **Additional activity #1**

Pupils create origami animals using instructions from the given website [www.origamiway.com](http://www.origamiway.com). The instructions can be printed and prepared in advance. Pupils do this task individually. The origami animals can be added to the habitat dioramas.

#### **Additional activity #2**

The Venn diagram. If there is less time or materials available, it is possible to create a Venn diagram or group diagram – two overlapping circles – either individually or in pairs on paper sheets, or together on the board. The circles symbolize a habitat, for example, a meadow and a lake. In one circle pupils can draw or write in the animals that live in the meadow and in the other circle – the animals that live in the lake. Where the circles overlap, there is place for the animals that are found in both, the meadow and the lake (for example, frogs, dragonflies). The origami animals can also be placed in the Venn diagram.

**Additional activity #3**

Pupils can be taken on an excursion or hike through several habitats (for example, meadow, forest, lake, swamp; nature park too) with the task to observe the surrounding environment and animals. Back in the classroom pupils can make drawings or posters depicting what they saw.

**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

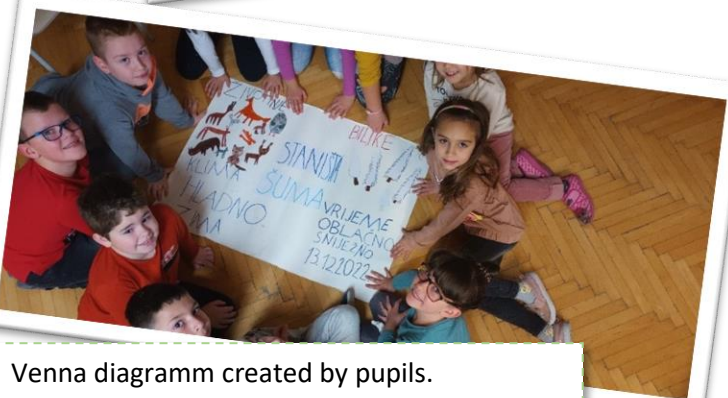
Pupils following Eco workshop instructions.



Underwater biotope diorama.



Pupils are going on excursion to discover different types of biotopes.



Venna diagramm created by pupils.

Origami fish created by pupils.

