

## The heritage of Ice Age – the colourful world of glacial erratics

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### Objective:

1. Participants will understand the ice age alternation cycles on Earth, the causes of ice ages.
2. Participants will learn about the various traces of ice age seen in the Estonian landscape;
3. Participants will learn about different types of rocks.
4. Participants will learn about rock forming minerals and fossils that can be found in rocks.
5. At the rock park exposition, participants will learn by experience how to find information and focus on the most important information.

**Target group:** 7<sup>th</sup> – 9<sup>th</sup> grade

**Duration:** 2 hours

**Location:** the rock park of the Ice Age Centre, the 1<sup>st</sup> and 2<sup>nd</sup> floor exposition of the Ice Age Centre

### Tools:

- Worksheets:  
*Boulders*  
*Minerals and fossils*
- Rock forming minerals, fossils found in rocks
- Mohs scale
- Clipboards and writing instruments

### Activities

**Introduction** – approx. 15 minutes

The students are introduced to the subject and familiarised with the schedule and programme. The students will be divided into groups. Different rocks can be used to divide students into groups.

### Subject development

1. Discussions with the students about the occurrences and causes of ice ages on Earth. When did the last ice age end and how thick was the ice then? The creation of glacier sheets and the movement of glaciers. How does ice age affect the wildlife and terrain – approx. 30 minutes.
2. “Workshops” – approx. 60 minutes

Three “workshops” are held at the rock park where the students will impersonate representatives of different geological sciences. Information stands and signs on the rocks will be used at the rock park. The availability of a smart device with Internet connection is advised.

**Petrologist** – studies the origins, structure, and components of rocks. The students will study different types of rocks and the formation of rocks. The students will observe the distribution of glacial erratics in Estonia and study their origin.

**Mineralogist** – studies the minerals contained in rocks. The students will learn about the most common minerals found in rocks. The students will acquaint themselves with the mineral hardness scale, i.e. the Mohs scale.

**Palaeontologist** – studies the fossils contained in rocks. The remains or traces of animals or plants conserved in rocks help us perceive the ecological communities that existed in the past. The students will learn how to notice traces of wildlife in rocks.

**Conclusion** – approx. 15 minutes

To conclude, the most important information will be reviewed and the studied subjects will be discussed. Future is discussed as well – is it possible that we will also leave fossils behind? What might a future scientist find when studying the traces of our existence?

### **Correlation with the national curriculum**

Regulation No. 1 of the Government of Estonia of 6 January 2014 “National Curriculum for Basic Schools”.

### **Annex 13 Predominant topics**

#### **2) the environment and sustainable development**

##### **2.3.4.2. Geology**

###### **Learning outcomes**

1. explains the weathering of rocks, the movement and sediment of weathered material, and the formation of sedimentary and igneous rocks;
2. describes and recognises sand, gravel, clay, moraine, granite, sandstone, limestone, oil shale, and coal in nature, as well as on pictures, and gives examples of their use;
3. understands the necessity of geological studies and has an idea about the work of geologists.

##### **2.3.4.3. Relief**

###### **Learning outcomes**

## Active Study Programmes at the Ice Age Centre 2016

1. Gives examples of how landforms and the relief changes due to different factors (weathering, wind, water, human activity).