

Learning session for pupils (age: 9-15)
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Geological Time Travel – From Ancient Rocks to Young Soils

Topics

- Geological time scale
- Geological processes: birth of rocks, birth of land materials (soils)
- Recent geoheritage: Last glaciation and the heritage of the Ice Age
- The meanings of geological processes and formations

Tools and materials

- Rope, about 10 metres long
- Sand box almost full of sand, dimensions at least: 15 cm wide, 15 cm long and 5 cm deep
- Ice blocks, diameter 3-6 cm
- Different objects for quiz (see the quiz below)

Background information for teacher

The outline of geological time scale is hard to understand for children. Geology and geological phenomena are tightly connected to our everyday life so they and their values for human beings are important to learn and know. For the learning process it is necessary to be aware of the geological time scale. Then it is possible to understand the age of different formations and realize their nonrenewable nature as natural resources as well as their valuable geological heritage. They also have an important effect to development of biodiversity and cultures. We are dependent on them, but they must be used in sustainable way. That's why it is crucial to perceive the geological time scale and the meanings of geological processes in general.

Scheme (duration 60 min)

- First step of the demonstration. Dividing to groups and burying of ice blocks. About 10 min.
- Introduction to learning session, motivation. About 10 min.
- Geological time travel with rope. About 15 min.
 - o The teacher stretches a (10 metres long) rope across the class room. Then the teacher begins to itemize different geological events that are both worth knowing and familiar to pupils. Good examples are the birth of Earth, the crystallization of oldest bedrock (in Canada), the folding of Rocky Mountains, the death of dinosaurs, the last Ice Age, Stone Age, Middle Ages and today. The pupils move to certain places along the rope, describing the relative timing of the historical event. Finally the teacher will tell the right answers.
- The meaning of geological processes (events) and related formations. About 5 min.
 - o A quiz with different objects. The task is to solve which objects contain raw materials from bedrock or soil and which don't. There will be couple of minutes for pondering the answers. In the end the right answers will be told and discussed. The objects have to be simple and familiar to pupils.
- The heritage of the Ice Age. About 20 min.
 - o A short introduction to Ice Age: what does it mean, when it was, what traces did it left. After that the results of the demonstration will be surveyed, discussed and compared to earlier experiences of pupils.
- Final words.