

Geology every day! – an example of educational workshop to teach the geology

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Teaching of geological contents in primary and secondary schools presents an issue in Slovenia, due to often lack of understanding of the specific topics by the teachers as well as dispersed geological topics between subjects. Therefore, in the framework of Slovenian Geological Society, the educational workshop was created where we would present the significance, appearance and use of geology in everyday life. In design and implementation of workshop, geologic experts from various scientific fields and from different institutions (educational, research, governmental and end users) were involved.

The workshop is conceived in a way that schools can choose it as part of additional extracurricular education, i.e. natural day. The goal of the workshop is to interconnect selected objects (pencil, phone, lamp, water, cosmetic product, etc.) that we use in our everyday life with the importance of geological knowledge. Participants learn about how the geologists provides raw materials as a base for the objects, the connections with their use, and how to recycle them to contribute to transition to circular economy. The emphasis was on actively involving participants to solve the geological challenges.

The workshop is based on the principle of geocaching. Participants solve the challenges in groups where each choose an object that is later geologically described during the workshop. According to the instructions and with the help of the map, each group visits at least 4 stations. Seven thematic stations have been established where the pupils and students actively participate. Different active learning techniques are used to achieve the set goals. The first four stations are related to recognize the importance of minerals, rocks, fossils and groundwater. Participants solve the challenge related to mineral raw materials using the basic investigation methods and simple experiments at the "Observe and Investigate" station. The goal of the "KamenCheck" station is to recognize different rocks, using the KamenCheck mobile application (learning application for rock recognition), and learn about various use of rocks. The station "All live" represents the scientific and useful aspects of fossils and fossil fuels. Participants are challenged to test the properties of groundwater, and to connect it to its origin at the station "Good Water". The remaining three stations deal with the issues for more sustainable society. The challenges connected to material extraction, pollution and environmental protection issues are presented with the aim to inform participants about recycling and sustainable mining. At the "Find It" station, the participants learn about the sources of individual raw materials using various maps. The station "Do not Pollute" describe the potential and different aspects of pollution on the model of aquifer, and at the station "Separate, recycle and protect the environment" all the materials are safely stored or recycled and with thus complete the circle of the circular economy. At the end, when the group respond to all the question posed from a certain topic, they can solve the final password. Answers of each group are debated and resolved at the final "Omniscient" station where all receive the prize.