Geology: Our Changing Earth

Grade Level: 3rd - 6th

Overarching theme:
The Earth changes; these changes occur at different rates and many forces cause the change.

Summary:
Studying the geology of Oregon Caves helps orient students to the nature of the Earth's changing landscape. By understanding and observing the present landscape, students uncover mysteries of the Earth's past and make predictions for its future. Emphasizing the Park Service's mission and Leave No Trace ethics during the programs encourages students toward responsible action and behavior while visiting other natural areas.

Goals & Objectives

Students will:

1. Enjoy Oregon Caves, above and below ground
2. Comprehend the rock cycle
3. Note human impacts on the Earth over time
4. Identify examples of weathering and erosion and describe their impact on landforms and cave formation
5. Determine the relationships between area geology and living organisms (including people)
6. Become good examples of stewardship and describe how Oregon Caves National Monument protects geologic resources

Synopsis of Lessons

Lesson 1: Ranger Visit to Classroom & Rock Changes Activity

In the classroom: Students will prepare for their site visit by developing an understanding of the speoleogenesis of Oregon Caves including the formation of the marble and the Siskiyou Mountains. Students will discover how natural acids play a role in development of cave formations. This will be accompanied by an activity with rock samples - limestone, marble, and calcite - having students describe the processes it took for each to transform into the next.

Lesson 2: Monument Visit (Field Trip to Oregon Caves)

Inside the caves: Students will visit the Caves and through the study of the geologic landscape and changes they will see, experience, and learn how the cave was formed, changed, and is continually being altered by various processes.

Forest Hike: Students will be able to make the connection between the importance of the interaction between the forest and the cave in order for the development of speleothems and speleogens. Geology journals will help solidify concepts of the rock cycle, speleogenesis, or changes.

Vocabulary

biological weathering, chemical weathering, calcite, carbon dioxide, carbonic acid, cave, crystal, drapery, erosion, flowstone, geology, igneous rock, limestone, magma, marble, metamorphic rock, mineral, pressure, rock, sedimentary rocks, speleothem, speleogen, sinkholes, stalactite, stalagmite, subduction, uplift, weathering

Related Oregon State Standards

Science, Grade 3

3.1P.1, 3.3S.1, 3.3S.2

Science, Grade 4

4.1E.1, 4.2P.1, 4.2L.1, 4.2E.1, 4.3S.1, 4.3S.2, 4.3S.3

Science, Grade 5

5.1L.1, 5.2L.1, 5.3S.1, 5.3S.2