Geology Synopsis 3rd—6th, upper

Hartley Nature Center

MN Academic Standards

supported during HNC program. More standards can be supported with pre- and post lesson activities.

Science

3.1.1.1.1 Support claims with evidence
3.1.1.2.3 Record observations
3.1.1.2.4 Evidence based explanation
3.1.3.4.1 Use tools such as a hand lens
4.3.1.3.1 Mineral composition of rocks
4.3.1.3.2 Describe and classify minerals
5.1.1.1.1 Scientific process
5.1.3.4.1 Science tools and data
5.3.1.2.1 Weathering of rocks into soil
6.1.3.4.1 Science investigation
7.1.1.2.3 Scientific conclusion
8.1.3.4.2 Appropriate science procedure
8.2.1.1.2 Metal vs nonmetal
8.3.1.1.1 Earth layers
8.3.1.1.3 Geologic events
8.3.1.2.2 Weathering, erosion, glaciers
8.3.1.3.2 Classify rocks
8.3.1.3.3 Rock composition

Language Arts

0.8.1.1 D, 0.8.3.3, 1.8.1.1 C, E, 1.8.3.3, 2.8.1.1 C, E, 2.8.3.3, 3.8.1.1 C, D, F, 3.8.3.3, 4.8.1.1 C, D, 5.8.1.1 C, D, 6.9.1.1 C, D, 7.9.1.1 C, D, 8.9.1.1 C, D, 9.9.1.1 C, 11.9.1.1 C

Authenticity

Students observe local rocks in their natural form and location in Hartley Park.

Goals & Objectives:

This program will:

- Expose students to rocks found in Hartley Park
- Provide an overview of basic geologic concepts and how they apply to our local surroundings
- Help students connect geologic concepts to what they observe in the field

Students will be able to:

- Define and recognize the three main rock types: igneous, sedimentary and metamorphic.
- Categorize four local types of igneous rocks, based on observation of the rocks' qualities.
- Explain the major geologic events that formed Lake Superior and local landforms.

Activities

In the Classroom

- What is a rock? Talk about the ingredients of rocks and how they form.
- What are the three rock types? Name igneous, sedimentary, and metamorphic, and define each.

In the Field

- Hike to a rock outcrop in Hartley Park. Explore the rocks using magnifying glasses and toothbrushes to scrub a "fresh face" on the rock.
- Use observations and field guides to identify several rock types.
- Talk about the formation of Lake Superior and the north shore. Tell the geologic story of Duluth.
- Categorize major kinds of rocks found on the north shore.

Bad Weather Alternative

- Use field guides to observe and identify several rocks types
- Discuss the formation of Lake Superior and the north shore. Tell the story of how Duluth got here (geologically speaking).
- Categorize four major kinds of rocks found on the north shore. Talk about why they are mostly one rock type.