



The Rock Factory

A Pre-Visit Information Guide for Teachers

Meets Next Generation Science Standards: 5-PS1-3; MS LS4-1,2; MS ESS1-4; MS-ESS2-1

How does our Earth create so many different types of rocks? Learn about the different processes that form and reform rocks as you identify many types of rocks, minerals and fossils. Students will learn to think like geologists as they move through interactive investigation stations packed with specimens from the Museum's collections.

OBJECTIVES

- **The Rock Cycle:**

Students will examine the three types of rocks - igneous, metamorphic and sedimentary – and discover the processes that create them. Tracing the connections between shale and slate, limestone and marble, students will discover how the rock cycle changes the very ground beneath our feet!

- **Characteristics of Rocks**

Students will learn how to observe and identify rocks through their unique characteristics, looking for telling clues such as layering, crystal size, fossils, magnetism, and more. Students will practice their observational skills as they describe the Museum's unique rock and mineral specimens.

- **Investigation Stations:**

Students will explore Museum geology specimens up close at investigation stations to answer such questions as: "Why do fossils form only in certain rocks?" "How do rocks form from volcanic eruptions?" "How can I recognize different types of rocks?".

ACTIVITIES

Teachers are encouraged to conduct pre-visit and post-visit classroom discussions and activities with their classes to make the most of their experience. Encourage your students to start a classroom rock collection, and create an exhibit with the rocks organized by type – igneous, sedimentary and metamorphic. A collection of activities relating to plate tectonics can be found at:

<http://geology.com/teacher/plate-tectonics.shtml>

HELPFUL VOCABULARY

Magma – molten rock that forms beneath the surface of the Earth and collects underground in magma chambers.

Plate Tectonics – a theory describing the large-scale motions of the Earth's lithosphere.

Lithosphere – The solid outer layer of the Earth, which includes the crust and the uppermost mantle.

Igneous Rock – Rock that forms from the cooling of magma, either underground (intrusive rock) or on the Earth's surface (extrusive rock).

Metamorphic Rock – Rock that forms when existing rock undergoes profound physical and chemical changes as a result of intense heat and pressure.

Sedimentary Rock – Rock that forms from the compaction of sediment through the process of lithification.

WEBSITES

US Geological Survey:

<http://education.usgs.gov/>

Exploring Earth Website with animations:

http://www.classzone.com/books/earth_science/terc/navigation/home.cfm#

American Geological Institute Education Home:

<http://www.agiweb.org/geoeducation.html>