



# Mineral Mania!

## A Pre-Visit Information Guide for Teachers

Meets Next Generation Science Standards: 3-LS4-1; 4-ESS1-1

Experience mineral mania at the museum! Discover the amazing array of rocks and minerals found all over our Earth and how geologists classify them. Students will test the properties of different minerals, including streak, crystal shape, magnetism and fluorescence. Spectacular rock and mineral specimens from the Museum's collections are sure to delight students and show them why geology rocks!

### OBJECTIVES

- **Rocks vs. Minerals:**

What is a mineral, and how is it different from a rock? Both are non-living solid objects found in nature. Rocks are made up of minerals, but minerals are not made up of rocks. Minerals have specific compositions and physical characteristics; rocks can be made up of one or more minerals and their composition can vary. Students will observe a rock (granite) and the minerals of which it is composed (mica, feldspar and quartz).

- **Properties of Minerals:**

What properties make each different mineral unique? How can we tell hematite from fluorite? Minerals can be identified by testing for certain characteristics. Each mineral has a unique combination of certain characteristics, including hardness, color, transparency, streak, luster, and crystal form. Students will learn how to classify minerals and will test these properties together as a class.

- **Mineral Testing Stations:**

Students will become mineral detectives at a series of testing stations, using clues to identify different minerals. Given a set of clues about a mineral's properties, students will test the samples to identify the mineral that matches the clues. Students will be delighted by some of the surprise properties, including fluorescence and magnetism.

### 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. Spark your students' interest in rocks and minerals by encouraging students to collect rocks to bring to class and identify through mineral testing. Start a class rock and mineral collection, or create a mineral exhibit in your classroom:

[http://smithsonianeducation.org/educators/lesson\\_plans/minerals/lesson1\\_main.html](http://smithsonianeducation.org/educators/lesson_plans/minerals/lesson1_main.html). Learn about crystal growth and properties by growing your own crystals:  
<http://www.sdnhm.org/kids/minerals/grow-crystal.html>.

## **HELPFUL VOCABULARY**

**Mineral** – A naturally occurring solid with a specific chemical composition and characteristic physical properties.

**Rock** – A naturally occurring aggregate of minerals

**Crystal** – A solid in which the atoms are packed in a regularly ordered, repeating three-dimensional pattern.

**Luster** – The description of the way light interacts with a rock or mineral.

**Transparency** – The degree to which light passes through a material.

## **WEBSITES:**

Mineral Information Institute:  
<http://www.mii.org/>

US Geological Survey:  
<http://education.usgs.gov/>

The Mineral and Gemstone Kingdom: Complete Information Guide to Rocks, Minerals and Gemstones:  
<http://www.minerals.net/>