

Classroom Rock Museum

STANDARD COURSE OF STUDY CORRELATIONS:

Science, Grade 4, Goal 2: The learner will conduct investigations and use appropriate technology to build an understanding of the composition and uses of rocks and minerals.

2.01 Describe and evaluate the properties of several minerals.

2.02 Recognize that minerals have a definite chemical composition and structure, resulting in specific physical properties including:

- Hardness.
- Streak color.
- Luster.
- Magnetism.

2.03 Explain how rocks are composed of minerals.

2.04 Show that different rocks have different properties.

2.05 Discuss and communicate the uses of rocks and minerals.

2.06 Classify rocks and rock-forming minerals using student-made rules.

2.07 Identify and discuss different rocks and minerals in North Carolina including their role in geologic formations and distinguishing geologic regions.

Science, Grade 6, Goal 3: The learner will build an understanding of the geological cycles, forces, processes, and agents which shape the lithosphere.

3.03 Explain the model for the interior of the earth.

3.04 Describe the processes which form and the uses of earth materials.

- Rock cycle.
- Minerals.
- Characteristics of rocks.
- Economic use of rocks and minerals.
- Value of gems and precious metals.
- Common gems, minerals, precious metals and rocks found in North Carolina.

INTRODUCTION TO LESSON: Students will learn about native minerals. They will use field guides and other sources to identify and describe rocks, and they will prepare them for display in a classroom rock exhibit.

BACKGROUND FOR TEACHER: Familiarity with the basic facts about classification of rocks and minerals will enable students to gain the maximum benefit from this activity. Rocks, such as granite or marble, are composed of two or more minerals. Minerals are made of a single element or compound—they are the same material throughout, with no specks or flakes. An object is considered a mineral if it is neither plant nor animal. The Web site <http://www.coaleducation.org/lessons/primary/other/minand.htm> provides a list of minerals used in everyday items.

engage ➤ Lead a discussion about the difference between rocks and minerals. Encourage students to suggest possible distinctions. Next, introduce the importance of minerals in everyday items. Play an alphabet game in which students name examples of objects that are classified as minerals. The first student is to provide the name of a mineral beginning with the letter A, for example, *airplane*. The next student is to name a word beginning with the letter B, for example, *bicycle*. The students are to continue, each taking a turn, through the letter Z.



MATERIALS

- ★ “Rock Star” activity sheets (1 per student)
- ★ Field guides on rocks and minerals (see *Additional Resources*)
- ★ Rocks (Students may bring rocks they find around their homes; you may scour the school grounds for rocks; or you can use a collection available at your school as a substitute or supplement.)
- ★ Colored pencils or markers
- ★ Shoe boxes

PREPARATION

A field trip to a place where students may collect minerals would be an ideal component of this lesson (see *Additional Resources*).

Tell students that they will later do several exercises that will lead them to create a class “rock museum.” [Show the video.](#)

explore > Make sure each student has at least one rock specimen. Hand out the activity sheets. Have each student complete one sheet for each specimen.

explain > Have students work in groups to try to identify their specimen or to determine what minerals it might contain. Each student should write a description of his or her specimen, including where it was found and its characteristics. The description should also include the identity of the rock or mineral—or a best guess. Have students share their rocks and what they discovered about them with the class.

elaborate > Each student is to create a display case for his or her rock, which will be exhibited within an overall collection. Have each student make a case (out of a shoe box) for displaying his or her rock. Students should decorate their boxes and label each with the student’s name, the name of the rock, a description of the rock and where the rock was found. Have students brainstorm ways to organize their rocks to create a cohesive classroom exhibit. For example, they might place the rocks or minerals in categories based on size, color or place of origin. Once the shoebox cases are arranged, have students number the entire collection. Encourage them to think of a clever title for the classroom exhibit. When the exhibit is complete, invite parents and other classes to visit the rock museum.

evaluate > Throughout the lesson, evaluate how students make their observations and how they progress to making decisions about the identity of their rocks. The students’ exhibit is also an evaluative tool.

Teacher’s Notes:



BEYOND THE CLASSROOM

A field trip is an ideal way to spur students’ interest in rocks and minerals. North Carolina is home to a wide variety of precious and not-so-precious gemstones and minerals, and there are many places students can visit to learn about the geological history of the state. At some of these places, students can explore and search for specimens that they can take home.

Exploring the Geology of the Carolinas: A Field Guide to Favorite Places from Chimney Rock to Charleston by Kevin G. Stewart and Mary-Russell Roberson (2007. Chapel Hill, N.C.: UNC Press) will help you find places to visit.

- Emerald Hollow Mine in Hiddenite (<http://www.hiddenitegems.com/>) is a good place for students to load up on gems and minerals.
- Reed Gold Mine in Midland (<http://www.nchistorisites.org/Reed/reed.htm>) is a good place to pan for gold.

Additional Resources:

How to teach about elements and how they influence colors of rocks • <http://mineral.galleries.com/minerals/property/color.htm>

Physical properties of minerals

- <http://mineral.galleries.com/minerals/physical.htm>

Rock descriptions • <http://www.moorlandschool.co.uk/earth/>

N.C. Geological Survey’s Project Earth

- http://www.geology.enr.state.nc.us/proj_earth/proj_earth.html
- Downloadable resources for earth science teachers and students.

U.S. Geological Survey Science Education

- <http://education.usgs.gov/>
- Tips on collecting and identifying rocks • <http://pubs.usgs.gov/gip/collect1/collectgip.html>

Field Guides:

Pellant, Chris. 2002. *Rocks and Minerals* (Smithsonian Handbooks). New York: DK Publishing.

Pough, Frederick H. 1998. *Peter-son First Guide to Rocks and Minerals*. Boston: Houghton Mifflin Company.

Prinz, Martin et al. 1978. *Simon and Schuster’s Guide to Rocks and Minerals*. New York: Simon and Schuster.

Assignment

Rock Star Activity



1. Draw a detailed sketch of your rock using colored pencils for shading where necessary.
Be sure to clean the rock before you draw it.
2. Where did you find the rock?
3. Does the rock seem to be made of only one substance, or does it look like it contains different kinds of minerals?
4. What color is the rock? How might the color help you determine what the rock is?
5. Is the rock smooth? If so, what do you think caused it to look this way?
6. Is it dull or shiny? If it is shiny, what do you think the rock might contain?
7. Write down any other observations you made about your rock.