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.
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 in making decisions about the identity of their rocks. The students’ exhibit is also an evaluative tool.

**Teacher’s Notes:**

** Additional Resources:**

- How to teach about elements and how they influence colors of rocks [http://mineral.galleries.com/minerals/property/color.htm](http://mineral.galleries.com/minerals/property/color.htm)
- Physical properties of minerals [http://mineral.galleries.com/minerals/physical.htm](http://mineral.galleries.com/minerals/physical.htm)
- Rock descriptions [http://www.moorlandschool.co.uk/earth/](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](http://www.geology.enr.state.nc.us/proj_earth/proj_earth.html) • Downloadable resources for earth science teachers and students.
- Field Guides:
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.