ROCKS OF CONNECTICUT

Resource Sheet for Teachers

The Eli Whitney Museum *Rocks of Connecticut* program is designed to introduce students classifying rocks or to provide an opportunity to apply what they already know. By starting with and focusing on the processes of rock formation, we hope to encourage students to connect how rocks look with how they were formed. They can then use clues to identify how a particular rock was formed and to correctly identify it by name with tools such as books, guides, or internet resources.

We provide your students with a sample of seven common Connecticut rocks: granite, basalt, sandstone, limestone, marble, schist, and slate. We suggest that you continue to use these boxes and the rock samples in your classroom for several lessons.Having your students work together to describe, identify, and categorize the rocks will help them build description skills and start to recognize connections between how rocks were formed and how they look. This experience can also serve as an introduction to more formal learning about these processes as well as characteristics of rocks and minerals.

As a follow-up to the *Rocks of Connecticut* program, you might:

- Have your students share tips for using the microscope and hand lens. Check to make sure that all students are using these tools correctly.
- Have your students choose three rocks and complete the description sheet provided, using the microscope and hand lens. Let students use whatever language and thinking comes most naturally to them then share and discuss observations. If necessary, review any new words, such as minerals or layers.
- Have students use the Rocks Student Guide to try to identify their rocks.
- In pairs, small groups, or as a whole class have students share their guesses of which rock is which.
  See the completed rocks description chart for help identifying the rocks.
  Make sure that all students have correctly identified their rocks.
- Encourage students to bring in rocks that they find and to try to identify them, especially focusing on the categories of igneous, sedimentary, and metamorphic, using clues to identify how the rocks were formed.

COMPLETED ROCK DESCRIPTION CHART

	Granite	Basalt	Sandstone	Limestone	Marble	Schist	Slate
Minerals • How many different colored minerals do you see? • What colors?	Gray, pink, white minerals	Dark gray, light gray, sometimes with orange, like rust (oxidized iron) in color	May have just one color mineral but often has grains of other minerals	Usually white or gray with some clear bits of quarz visible	White, sometimes with other color minerals	Mica (black) and quartz (clear, grayish)	Gray, usually don't see other minerals
Layers • Do you see any layers or stripes in the rock? • Are they straight or wavy?	No clear layers	No	No Can sometimes see lines, but not layers	No	No	Layers can usually be seen, often wavy	Layers
Crystals • Can you see any crystals? • Are they large or small?	Large crystals	Small crystals	No Some small sparkly bits from pieces of quartz, but not in the form of actual crystals.	No May have some small sparkly bits from pieces of quartz, but not in the form of actual crystals	Small to medium size crystals	Medium size crystals, different size crystals within same sample	No
Texture and Feel • How hard are the minerals? • Do grains come off easily? • Does it flake?	Hard mineral grains don't come off, doesn't flake	Individual mineral grains are hard, but may flake	Hard grains, but grains can sometimes come off. Does not flake	Softer – white powder can come off like chalk	Softer rock, but feels hard and will not flake	Hard minerals, but can break or flake easily	Soft minerals. Breaks along the layers
What else did you notice?		Holes – these are where air bubbles were trapped as the rock hardened	Can see individual grains, recognize pieces of sand	Interesting texture – the result of closely packed layers of calcite	May notice smooth and shiny outer edge		Very fine grained – cannot see individual grains without a microscope

Some definitions that may be useful:

Mineral: a solid found in the earth's crust; an element or combination of elements. Minerals are the building blocks of rock.

Crystal: a solid that has formed in a regular structure with smooth faces (helpful examples include salt crystals, snowflakes, which are ice crystals, and amethyst). Crystals usually have a very clear shape; small shiny bits in a rock are not crystals, they're pieces of reflective minerals.

Hardness: scientists use hardness to describe how hard the individual minerals in a rock are, as measured by how they will scratch or be scratched by another material. Students may think about hardness as how easily a rock breaks, which is natural. Try to discuss and allow both ways of thinking about hardness. A rock like basalt may come apart easily but have very hard minerals, (the small pieces), while marble feels hard because it does not break apart easily, but the individual minerals are soft.

