☐ Activity 2: A Closer Look at Metamorphic Rocks

Metamorphic rocks are classified primarily by looking at their texture. The two main classifications of metamorphic rock are foliated and non-foliated. **Foliated** rocks are layered, meaning that sheets or bands are visible in the rock. The layers are caused by the application of intense pressure. **Non-foliated** rocks do not have regular layers, and large or small grains may be visible. These types of metamorphic rocks were often influenced more by heat than pressure.

Gather the metamorphic rocks from your Rock Science Kit and the booklet and magnifying glass that came with the kit, and then complete the "Metamorphic Rock Observations" page. For the texture of each rock, you can use the descriptions on the activity page or your own descriptions.

When you are done, search online if you'd like to learn more about any of your metamorphic rocks.

NOTE: If you're not sure how to describe the texture of any of your rocks, you may want to view the rock on the following website to see a different example of it and learn more about it. Note that the website uses the term "granular" instead of "non-foliated."

Metamorphic Rocks
www.movingbeyondthepage.com/link/9599/ This website provides good information about the rocks in your kit. Click the rock name on the left side of the page.

☐ Activity 5: A Closer Look at Sedimentary Rocks

You will now look at some sedimentary rocks more closely. Gather the five sedimentary rocks from your Rock Science Kit and the booklet and magnifying glass that came with the kit, and then complete the "Sedimentary Rock Observations" page.

When you are done, search online if you'd like to learn more about any of your sedimentary rocks.

Sedimentary Rocks
www.movingbeyondthepage.com/link/9575/ You can learn more about any of your sedimentary rocks at this webpage. (To learn more about calcareous tufa, click the link for limestone and scroll down to the "Tufa" section.)

Metamorphic Rock Observations

Metamorphic rocks contain so many different minerals that scientists often don't use the minerals or colors to classify them in the field. The structure (foliated or non-foliated) and the texture of metarmorphic rocks are the main ways that scientists classify them.

You're going to take a closer look at your metamoriphic rocks and try to figure out the structure and texture of each one. Write down the name of each rock on the chart below.

Name:	Name:	Name:	Name:	Name:
Texture:	Texture:	Texture:	Texture:	Texture:
Foliated or Non-foliated	Foliated or Non-foliated	Foliated or Non-foliated	Foliated or Non-foliated	Foliated or Non-foliated

Metamorphic Structures

Use your magnifying glass to look closely at your five rocks.

FOLIATED

long parallel sheets of minerals stacked and pressed together

NON-FOLIATED

mix of minerals throughout with no bands or sheets

Metamorphic Textures

FOLIATED	NON-FOLIATED
Slaty A slaty rock is all one color and separate sheets of rock are hard to see	uniform texture throughout
Phyllitic A phyllitic rock is slightly shiny with sheets of rock that can be seen with a magnifiying glass. It is all one color	
Schistose Visible sheets of rock that are mostly one color with small bands of another color	marbled, when 2 or more rocks have been melded together
Gneissose Visible sheets of rock with large bands of different colored rocks pressed and molded together	

Sedimentary Rock Observations

Directions: You're going to take a closer look at your sedimentary rocks and try to figure out the texture and any imprints found in each one. Write down the name of each rock on the chart below. Use the information found on this page to help you complete this chart.

Sedimentary rocks are sorted by:

1. The rock's texture and the way it was formed
2. Types of imprints made in the rock

Name:	Name:	Name:	Name:	Name:
Imprints:	Imprints:	Imprints:	Imprints:	Imprints:
Clastic or Non-clastic	Clastic or Non-clastic	Clastic or Non-clastic	Clastic or Non-clastic	Clastic or Non-clastic

Sedimentary Rock Textures

Feel each rock and study it with the magnifying glass. Scientists classify sedimentary rocks by their texture and the way they were formed.

Clastic: has visible grains of sediment. Clastic rocks were formed by pieces of other rocks that were compacted and/or cemented together.

Non-clastic: may contain crystals. No grains are visible. Non-clastic rocks were formed either by organic matter (e.g., shells), chemical reactions, or from the evaporation of water.

Sedimentary Rock Imprints

Bedding
layers of sediment deposited separately

Ripples
made by waves

Mud
honeycomb-shaped cracks formed in dry areas

Fossils
bones, shells, plants, etc. embedded in the rock

Activities

Activity 2: A Closer Look at Metamorphic Rocks

For this activity, your child will explore the five metamorphic rocks found in her Rock Science Kit. For texture, she can use her own descriptions or ones provided on the activity page. Some answers may differ from the answer key.

Answer Key:

- slate: slaty, fine grained, brittle; foliated
- marble: granular, gritty; non-foliated
- quartzite: granular, gritty; non-foliated
- gneiss: gneissose, coarse grained; foliated
- schist: schistose, fine grained; foliated

Activity 5: A Closer Look at Sedimentary Rocks

For this activity, your child will explore the five sedimentary rocks found in her Rock Science Kit. Imprints may vary depending on the specimen. They may or may not be visible.

Answer Key:

- shale: clastic
- calcareous tufa: non-clastic
- sandstone: clastic
- conglomerate: clastic
- limestone: non-clastic