Keying Rocks  
5th Grade  
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References: (Checked 1/2005)

- [http://www.mii.org/3everyday.html](http://www.mii.org/3everyday.html), Source of “Rocks are Made of Minerals”

Benchmarks:

SLC 12: Identify characteristics and/or patterns in rocks and soil.  
Benchmark A: Students will classify rocks by their characteristics.  
SLC 1: Use a simple key to classify objects, organisms and/or phenomena

Objectives:

Students will use a rock key to classify rocks into three types: igneous, sedimentary and metamorphic.

Materials:

- Rocks and Minerals Packets & overheads  
- Rock Charts & overhead  
- Rocks (one per student)  
- Like a Rock! Worksheet

Initial Demonstration:

Display at the front of the class several examples of each type of rock—sedimentary, igneous and metamorphic. Have the students come up in groups to look at the rocks then return to their desks and write in their journals any similarities and differences they observed.

Target Observation:

- More than likely, the students will not be able to discern how the rocks have been separated.  
- Rather, they will probably notice only general similarities and differences among all the rocks.

Target Model:

- Rocks can be classified in many different ways.  
- This classification is not always obvious.
Procedure:

Discuss their observations then let them know that the rocks are grouped according to the scientific classifications—sedimentary, igneous and metamorphic—which are based on how the rocks are formed. Pass out the Rocks and Minerals packets and use the overheads to help illustrate the different types of rocks, how they are formed, and how long they take to form. Show them the rock cycle and discuss how all the rocks are tied together; without one element the whole cycle would be thrown off.

Many mnemonics can be used to help the students remember how the names match the way the rocks are formed. Sedimentary rocks are formed from sediments, which are smaller rocks/sand. Igneous rocks are made from fire; we generally use the term “ignite” when talking about lighting a fire. Metamorphic rocks morphed from the other two types.

Target Observation:

- There are three types of rocks—sedimentary, igneous and metamorphic.

Target Revised Model:

- Rocks can be categorized by the way they are formed.

Procedure:

Let the students choose a rock to identify. Pass out the “Like a Rock!” worksheet, along with magnifying glasses, and have them work on Tests 1 & 2—drawing a description of their rock. This will familiarize them with their rock’s characteristics.

To complete Test 3, hand out the “Rock Chart” and use the accompanying overhead to work with them to key the rock they have selected. Make sure to discuss the different attributes described in the rock chart and encourage the students to come up with explanations regarding why the different categories contain the attributes they do. For example, it should make sense that sedimentary rocks “usually [have] pores between pieces” because sedimentary rocks are made of smaller bits of rocks/sand that have been pressed together. In the same way, it should make sense that metamorphic rocks “rarely [have] pores or openings” because they were once sedimentary or igneous rocks that changed under the influence of tremendous pressure. Also, be sure to discuss the difference between rocks and minerals (the minerals resource may be helpful). Students should understand that all rocks are made of minerals, but not all minerals are rocks.

mineral: any natural occurring, inorganic (does not include carbon) substance

Note: by this definition, water (H₂O) is a mineral, but definitely NOT a rock!

Summary:

Students know that rocks are classified as sedimentary, igneous, and metamorphic. They are also familiar with the characteristics of each type.