



Reading Science

Name: _____

Date: _____

Classifying Rocks

1. Have you ever picked up a cool rock? Maybe you thought about where it came from or how it was made. Look around. Rocks are everywhere. This is not surprising. We live on the crust of Earth. The crust is made up of only rock. Some rocks have been around for billions of years. Most aren't quite so old. New rocks are slowly formed all the time. Old rocks are slowly worn away. All rocks were made at some time no matter how old they are.



2. There are three kinds of rock based on the way the rocks were formed. Igneous rocks are made by volcanoes. Sedimentary rocks are made layer upon layer of material. Metamorphic rocks are made by heat and pressure. The way rocks are made make them all look different. This lets us put rocks into one of the three categories.
3. The temperature is hot enough to melt rocks under the Earth's crust. This melted rock is called magma. Rocks are made when the magma in the crust cools and hardens. Sometimes volcanoes bring magma through the crust. This is called lava. Lava also cools and hardens on the Earth. Rocks that are made by magma or lava are igneous rocks. Granite is an example of an igneous rock.
4. Sedimentary rock is the second category. These rocks cover most of Earth's land. Sedimentary rocks are made of pieces of other rocks and shells. Erosion causes rocks to slowly wear away. Erosion can be caused by rain, wind, freezing, and plant roots. Sometimes small pieces of rock are made because of erosion. The small pieces of rock are called sediment. Rivers take sediment to oceans and lakes. The river drops the sediments as it slows down. The sediments settle to the bottom in layers. More and more layers of sediment are dropped over millions of years. The weight from the top layers turns the bottom layers of sediments into rock. This makes some sedimentary rocks look layered. Fossils are often found in sedimentary rocks.



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5. Metamorphic rocks are the last category. Metamorphic rocks are not found on Earth much. These rocks were started out as an igneous or sedimentary rock. They were changed by extreme pressure and heat while deep inside Earth. A rock's appearance can change with enough heat and pressure. This changes it into a different rock. Granite is an igneous rock. Granite will become metamorphic with enough heat and pressure. Limestone is a sedimentary rock. Limestone will become metamorphic marble when it is placed under heat and pressure. Think of metamorphic rocks as rocks that have changed.

6. Take a look the next time you pick up a rock. Think about how it could have been formed. Was it formed by molten magma cooling and hardening? Was it formed by layers of sediments pressing down on each other over time? Was it changed into an entirely different rock by heat and pressure? On Earth, there are only these three types of rocks. Each rock is either igneous, sedimentary, or metamorphic.



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- 1** As a volcano erupts, it produces lava. As this lava flows, it cools down and hardens, forming a rock. How could you classify this rock?

 - A** Molten magma
 - B** Sedimentary rock
 - C** Metamorphic rock
 - D** Igneous rock

- 2** Sometimes fossils can be found in sedimentary rocks. Which statement best explains why?

 - A** Heat and pressure from deep within Earth cause fossils to form.
 - B** The remains of dead plants and animals settle to the bottom of an ocean or lake and are covered by mud. Pressure eventually forms these layers into rock.
 - C** Lava may flow over an animal or plant, and as it cools and hardens, a fossilized rock is formed.
 - D** Larger rocks slowly erode away due to the elements on Earth.

- 3** A metamorphic rock can also be thought of as a rock that changes. What causes the rock to change?

 - A** Layers of sediment build up over time and press down, forming rock.
 - B** Rain, wind, freezing, thawing, and plant roots cause the rock to erode away, leaving behind sediments.
 - C** Extreme heat and pressure from deep within Earth cause changes to the rock's appearance, structure, and composition.
 - D** The rock slowly changes over time into a new rock.



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- 4 Based on the context in paragraph 4, **fossil** refers to _____.
- A how igneous rocks were formed over time
 - B the remains of dead plants and animals that settle to the bottom of an ocean or lake and are covered by mud
 - C a trace or print, or the remains of a plant or animal of a past age preserved in Earth or rock
 - D layers of sediment building up over time and pressing down, forming rock
- 5 What is similar about the formation of igneous rock and metamorphic rock?
- A They both require extreme heat.
 - B They both occur deep underground.
 - C They both result in rocks that have a similar appearance.
 - D They both require layering.