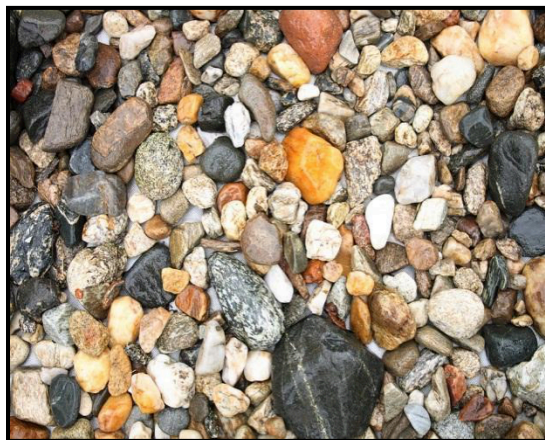




Name: _____ Date: _____ Group: _____

Classifying Rocks

- 1 Have you ever picked up an interesting rock? Maybe you wondered where it came from or how it was made. If you look, you will discover that rocks are all around us. This is not surprising since we live on the crust of Earth, which is made up entirely of rock. Would you be shocked to learn that some of these 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 by erosion. But, no matter how old the rock, they were all formed in some way.



- 2 There are three categories of rocks based on the way they were formed. Volcanic action results in the formation of igneous rock. Layer upon layer of deposited material results in sedimentary rock. Extreme heat or pressure will cause some rocks to change into metamorphic rock. These different formation processes give each type a characteristic appearance. This lets us classify rocks into one of the three categories.
- 3 Deep under Earth's crust the temperature is hot enough to melt rocks. This molten rock is called magma. Rock is formed within the crust as the magma slowly cools and hardens. Sometimes volcanic action brings magma through the crust. When this happens, the molten rock is called lava rather than magma. As the lava flows, it also cools and hardens. The types of rocks that are formed by magma or lava are known as igneous rocks. Granite is an example of an igneous rock.
- 4 Sedimentary rock is the second category. These rocks cover about three quarters of Earth's land surface. Sedimentary rocks are made of pieces of other rocks and shells. Rain, wind, freezing, and plant roots can all cause erosion of rocks. As rocks are exposed to these elements, they are slowly worn away. These pieces of rock, now called sediment, are eventually carried by rivers to the oceans and lakes. As the water slows down, the sediments settle to the bottom, layer by layer. Over millions of years, the weight from the upper layers of sand and mud turn these layers of sediment into rock. Some sedimentary rocks appear to be banded or layered because of this. Also, many fossils can be found within the layers of sedimentary rocks.



- 5 Metamorphic rocks are the third and final category. Metamorphic rocks are the least common rock found on Earth. These rocks were once an igneous, sedimentary, or even metamorphic rock. They were changed by extreme pressure and heat while deep inside Earth. Enough heat and pressure will change a rock's appearance, structure, and composition. This results in the formation of a different rock. Granite, an igneous rock, will become gneiss when it is placed under heat and pressure. Limestone, a sedimentary rock, will become marble when it is placed under heat and pressure. Think of metamorphic rocks as rocks that have changed.
- 6 Take a good 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 or by layers of sediments pressing down on each other over time? Was it changed by heat and pressure into an entirely different rock? On Earth, there are only these three types of rocks - igneous, sedimentary, and metamorphic.



- 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** As molten magma
 - B** As a sedimentary rock
 - C** As a metamorphic rock
 - D** As an 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 are slowly eroded away by 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 building up over time and pressing down forming rock.
 - B** Rain, wind, freezing, thawing, and plant roots growing cause the rock to erode away, leaving behind sediments.
 - C** Extreme heat and pressure from deep within Earth causes changes to the rock's appearance, structure, and composition.
 - D** The rock slowly changes over time into a new rock.



- 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 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
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- 5 What is similar about igneous rock and metamorphic rock formation?
- A The formation of metamorphic and igneous rock requires extreme heat.
 - B The formation of metamorphic and igneous rock occurs deep underground.
 - C The formation of metamorphic and igneous rock results in rocks that have a similar appearance.
 - D The formation of metamorphic and igneous rock requires layering.