



Name _____

Hour _____ Date _____

Rocks Rock!

Directions: Read the information below carefully and answer the questions that follow on the back side of this paper. Answer the questions as completely as possible.

Rocks and Minerals

The ground we walk on, build on, and grow gardens on is made of rock. All the rocks in the world are made up of chemicals called **minerals**. Minerals are solid, inorganic (not living) substances found in and on the earth. Most are chemical compounds, which means that they are made of two or more elements. For example, the mineral sapphire is made up of aluminum and oxygen. A few minerals such as gold, silver and copper are made of a single element. Minerals are considered to be the building blocks of rocks. Rocks can be a combination of as many as six types of minerals. Through a microscope, a rock shows that it is made of crystals of different minerals, all growing together like a puzzle.

Three types of rocks make up the Earth's crust. Rocks are formed in three different ways to produce igneous, metamorphic, and sedimentary rocks. Igneous rocks form when molten magma cools and solidifies. Metamorphic rocks form when a rock is chemically changed by heat or pressure to form a new rock type. Sedimentary rocks form when fragments of rocks and other debris are cemented together.

Igneous Rocks

When a candle burns, a runny wax is formed that trickles down its side and solidifies. Igneous rocks are formed in a similar way. The rocks solidify from a mass of molten rock, such as when a lava flow cools and hardens. Because of the heat needed to form igneous rocks, they are sometimes called "rocks of fire." There are two main types of igneous rock: extrusive and intrusive. Extrusive types form when molten rock comes to the surface and cools quickly, as with lava. This produces a very fine-grained rock. Intrusive rocks are those that solidified underground, cooling slowly to produce coarse-grained rocks. Examples: Granite, basalt, obsidian.

Sedimentary Rocks

Sedimentary rocks are formed when sediment (bits of rock plus materials such as shells and sand) get packed together. They can take millions of years to form. You never know what you might find in a sedimentary rock since many rocks of this type are made up of lots of other rocks, or even animal remains, all stuck together. Sedimentary rocks are built up of particles laid down as layers or beds of sediment and are later buried, compressed, and cemented into a solid mass. Most rocks that you see on the ground are sedimentary. Examples: Sandstone, shale, limestone.

Metamorphic Rocks

Metamorphic rocks are igneous or sedimentary rocks that have been transformed by heat, pressure, or both. Metamorphic rocks are usually formed deep within the Earth, during a process such as mountain building. When you bake bread, you mix flour, yeast, and water together and bake in a hot oven. In a similar way, heat and pressure from the overlying rocks, may change the nature of the rocks below. This process is called metamorphosis, which means "change." Examples: Schist, slate, marble.

Did You Know?

Most of the ocean floor is made of basalt. This igneous rock continues to flow from the Earth through an underwater mountain ranges known as "mid-ocean ridges"?

Questions - Please write your answers in complete sentences!

1. What is the difference between rocks and minerals?
2. How many types of rocks make up the Earth's crust?
3. What are the names of the 3 types of rocks?
4. How are igneous rocks formed?
5. What is another name for igneous rocks?
6. What is the difference between two types of igneous rocks?
7. How are sedimentary rocks made?
8. How are metamorphic rocks made?
9. What does the word "metamorphosis" mean?
10. Which two layers of the Earth are made of rock?
11. What are the names of the other two layers of the Earth, and what are they made of?
12. Write the following layers of the earth in order from most dense to least dense: atmosphere, crust, inner core, mantle, outer core, water.