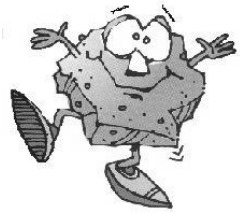
Name: _____ Types of Rocks



Igneous Rocks

All rocks on Earth were initially igneous in nature. Igneous rocks form when liquid magma cools, forming crystal-structured rocks.

There are many different types of igneous rocks. Scientists divide these different types into two main categories: Those which cooled *below* the earth's surface, and those that cooled on the surface. Those which began their lives below the surface are called **intrusive** rocks, while those which cooled on the surface are referred to as **extrusive** rocks.

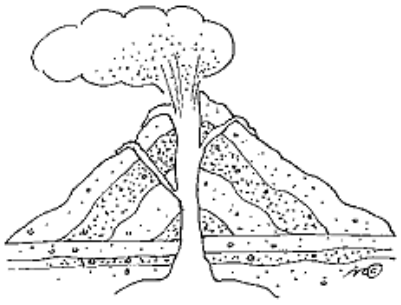
Igneous rocks that form deep within the Earth's crust where temperatures are very high might take thousands of years to cool down. This causes the crystals to be large and easy to see. (Why?—Because they have a very long time in which to grow.) Igneous rocks formed on the surface cool down in just a matter of a few hours. The crystals in these rocks are much smaller—often, too small to be seen without a microscope.

Intrusive Igneous Rock

Intrusive igneous rock—igneous rock formed *beneath* the earth's surface—has large coarse grained crystals. If you look closely at the rock you can see the mineral crystals.

Granite is an intrusive igneous rock. The earth's continents (large land masses) are mostly formed of granite. If you look closely at a piece of granite you will see little flecks of white, black, gray, and sometimes pink. These flecks of color are crystals. If you can see the crystals that form an igneous rock, you're looking at an intrusive igneous rock.

Extrusive Igneous Rock



Extrusive igneous rock is formed *at the earth's surface*. When magma reaches the surface of the earth, people call it lava. The place that magma erupts to the surface is called a volcano.

Name: _____ Types of Rocks

Extrusive igneous rocks are formed when the escaping lava cools and forms into solid rock. This cooling is much faster than the slow cooling that forms intrusive igneous rocks. This fast cooling means that most extrusive igneous rocks contain either no crystals or else very fine-grained crystals that are too small to see.

There are many different types of extrusive igneous rocks. The type of rock you get depends on the kind of lava the rock was formed from, and on how fast the rock cooled. Three common extrusive igneous rocks are obsidian, pumice and basalt.

Obsidian is a smooth, glossy, black igneous rock that looks like black glass. It forms when volcanic lava cools very, very rapidly—much too rapidly for any crystals to form.

Pumice is a light-colored igneous rock, packed full of tiny air bubbles. (The lava cooled and hardened so fast that bubbles of air got trapped inside.) The air bubbles make pumice so light that it floats on water.

Basalt is a dark-colored igneous rock that makes up the ocean floor. The Hawaiian Islands are made of basaltic rock that formed millions of years ago when volcanoes erupted on the ocean floor.