Name: _____ Date: _____

Rocks and the Rock Cycle

Science Literacy Article

Rocks are solid materials that consist of one or more minerals or other substances. **Geologists** are scientists that study Earth's history through rocks and rock formations. They are able to classify rocks and group them according to their *texture* and *mineral composition*. These two factors also provide clues to the processes that formed the rocks. There are three types of rocks:

1. **Igneous rock** is formed from the cooling and hardening of magma or lava. Igneous rocks are used for constructing monuments and statues as well as for building materials used in homes and other buildings. There are two types of igneous rock:
    a) **Intrusive** igneous rock forms from magma that hardens beneath Earth's surface. This type of igneous rock typically *cools very slowly* which allows large crystals to grow. Granite is a type of intrusive igneous rock.
    b) **Extrusive** igneous rock forms from lava that has erupted and cooled on Earth's surface. This type of igneous rock typically *cools much more rapidly* than intrusive igneous rock which only allows small or no crystals to grow. Obsidian is a type of extrusive igneous rock.
2. **Sedimentary rock** is formed from the compacting and cementing of small, solid pieces of material called sediments. These **sediments** form from the weathering, erosion, and deposition of all types of rocks or the remains of living things. Sedimentary rocks make up a very small percentage of Earth's crust (only about 5%). Sedimentary rocks are used for manufacturing chalk, cement, and bricks. Limestone is a type of sedimentary rock.
3. **Metamorphic rock** is formed from extreme heat and pressure. These types of rocks are able to be formed from the extreme heat of magma *within the Earth*. They can also be formed from the intense pressure deep under Earth's surface or from the collisions of tectonic plates. Metamorphic rocks are used for building materials, artwork, roofing, and railroad ballasts. Marble is a type of metamorphic rock.

The **rock cycle** is the process in which rocks are created, changed, destroyed, and formed again. All rocks *begin as igneous rocks* formed from magma or lava, but are able to *change* due to the processes that take place on Earth. The rock cycle is never-ending and the same rock will go through it indefinitely, in many ways, over millions of years.

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