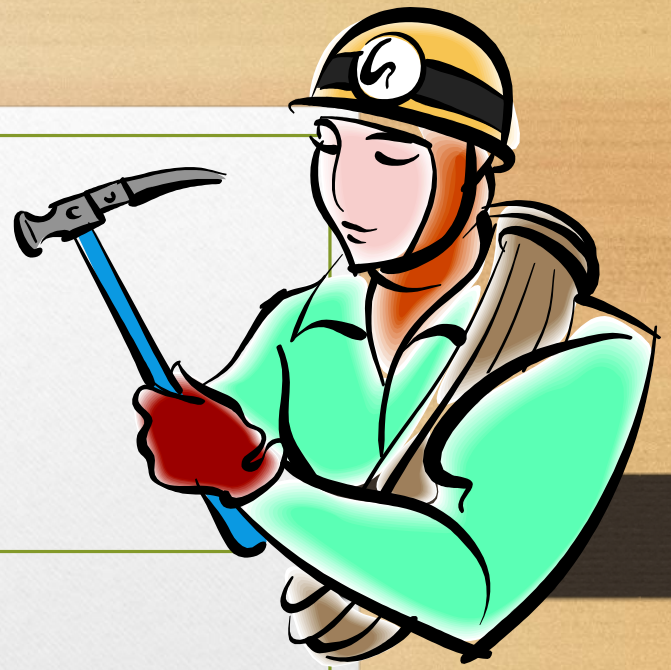
Igneous Rocks



Third Grade Field Guide

Source: AIMS

Science Specials - Askew

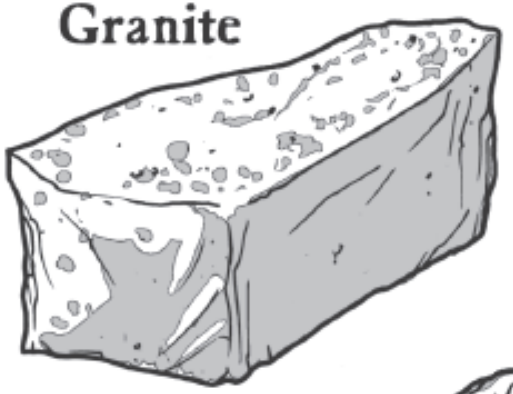
All About Igneous Rocks

The word **igneous** means "born from fire." Igneous rocks are made of magma.

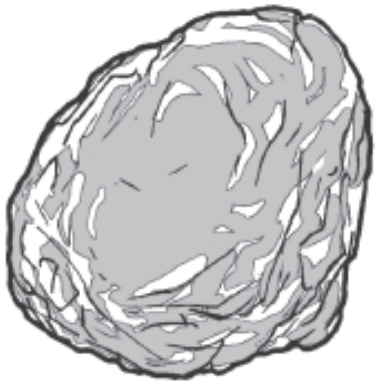
Magma is a hot liquid inside the Earth. It is melted rock, gases, and minerals. When volcanoes erupt, they release magma. Magma is called lava when it reaches the Earth's surface.

Some igneous rocks form underground. These rocks cool slowly. They are usually coarse with large mineral crystals. Granite and gabbro are this kind of igneous rock.

Granite



Gabbro



Some igneous rocks form on the surface of the Earth. Others form on the ocean floor. These rocks cool quickly. They have small crystals. Some look glassy. Basalt, pumice, and obsidian are this kind of igneous rock.

Basalt

Pumice

Obsidian

Granite

Type of rock
Igneous

Minerals common to it
Quartz, feldspar, and muscovite

Where it forms
Granite forms deep under the surface of the Earth's crust. Geologists classify this type of igneous rock as plutonic (deep igneous origin). Most of the continental crust of the Earth is composed of granite.

Fascinating Factoids
The word granite comes from the Latin *granum*. This word in Latin means grain. This describes the coarse-grained structure of granite. Granite is often used as a building material. Monuments and statues are often built using granite. The stone used in the winter sport of curling is often made of granite.

Basalt

Type of rock
Igneous

Minerals common to it
Olivine, pyroxene, and plagioclase

Where it forms
Most basalt is volcanic in origin and is formed by the rapid cooling and hardening of lava. Basalt often forms in places were the plates of the Earth are moving apart. This type of plate movement is called a divergent zone.

Fascinating Factoids
Basalt is the most common rock type found in the Earth's crust. Most of the floor of the ocean is composed of basalt. Shield volcanoes are almost all basalt. The Hawaiian Islands are a good example of shield volcanoes. The dark areas on the surface of the moon are basalt.

Gabbro

Type of rock
Igneous

Minerals common to it
Pyroxene, feldspar, and olivine

Where it forms
Gabbro forms under the Earth's crust, below the area in which basalt forms.

Fascinating Factoids
Gabbro is very similar to basalt. One of the major differences between the two is that gabbro cools at a slower rate than basalt. This difference in cooling rate produces larger crystals in the gabbro. Gabbro is one of the types of rocks often added to concrete mixtures. It is also used as a building material similar to that of granite. When used for this purpose, it is often called black granite.

Andesite

Type of rock
Igneous

Minerals common to it
Plagioclase feldspars, hornblende, pyroxene, and biotite

Where it forms
Andesite forms as a result of an oceanic plate going under (subducting) a continental plate. The oceanic plate is melted, and the melted material rises through the continental materials forming mountain chains.

Fascinating Factoids
Andesite is the second most common volcanic rock on Earth. It is named for the Andes Mountains. These mountains were formed by andesitic lava flows. Andesite is often found in areas where tectonic plates converge. The Andes, Cascades, and Carpathian Mountains are mostly andesite. Andesite is often used as gravel in building roads.