



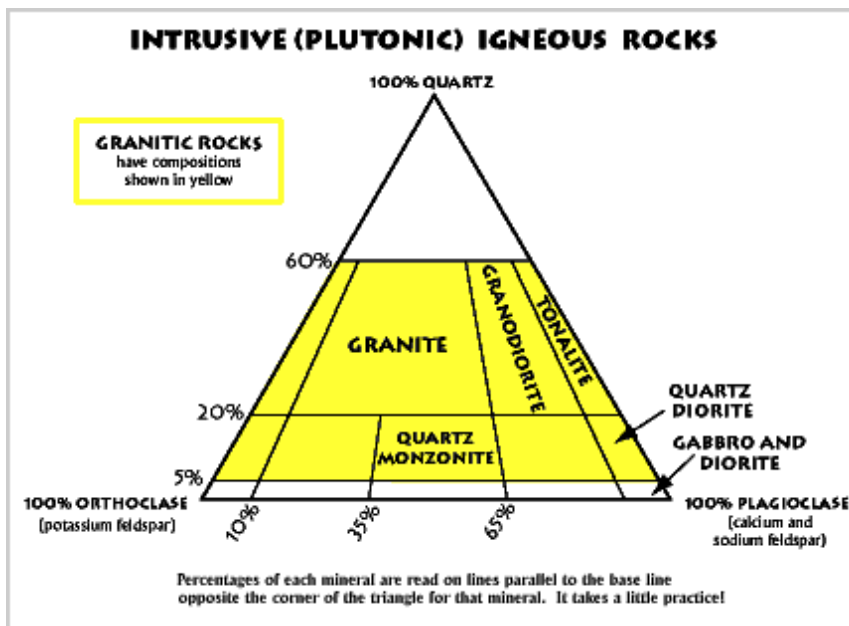
Naming Igneous Rocks

The names we give igneous rocks are based on their chemical compositions. The relative amounts of just three main minerals; quartz, plagioclase feldspar, and potassium feldspar are all you need to know to start naming igneous rocks. In addition to these three light-colored, *felsic* minerals, the abundance of dark, *mafic*

INTRUSIVE PLUTONIC	GABBRO	DIORITE	GRANODIORITE	GRANITE
EXTRUSIVE VOLCANIC	BASALT	ANDESITE	DACITE	RHYOLITE

MAFIC ←————→ FELSIC
 INCREASING DIFFERENTIATION
 INCREASING SiO₂, Na, K
 DECREASING Fe, Mg, Ca

Making a First Guess



The chart above will help you get started. Once you know you have an igneous rock, look at the texture to decide if it is *intrusive* or *extrusive*. Then use this chart to make your first *guess* based on how dark (mafic) or light (felsic) your rock appears.

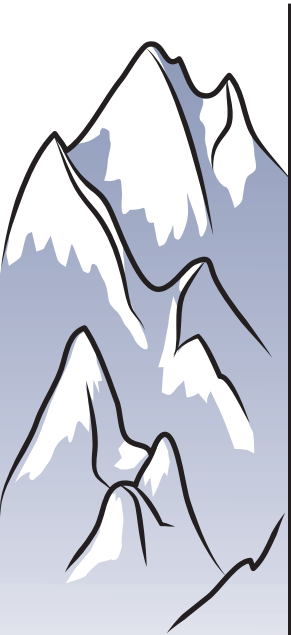
Name That Rock!

To be sure you've named your rock correctly you need to compare the amounts of *plagioclase feldspar*, potassium feldspar, and *quartz* and plot it on the chart. It takes a little practice to get used to a triangular graph!

Try this: suppose your rock is coarse-grained, so you know it's intrusive. It has 40% quartz, 30% potassium feldspar, and 30% plagioclase feldspar, it is called *granite*.

GEOLOGY Word Search

The words can be horizontal, vertical, or diagonal.



Find the terms listed below in the word search puzzle!

Volcano: A vent in Earth's surface through which molten rock and gases escape.

Continent: Large landmasses of the Earth.

Subduction: An oceanic plate is pushed underneath either another oceanic plate, or a continental plate.

Magma: A mixture of molten rock and other materials beneath the Earth's surface.

Lava: Molten rock expelled by a volcano during an eruption.

Hotspot: Areas of the mantle that are unusually hot and cause volcanic activity on the Earth's surface

Caldera: A cauldron-like volcanic feature caused by the collapse of land after a volcanic eruption.

Weathering: The breaking down of rocks, soils, and minerals through direct contact with the Earth's atmosphere.

Erosion: The process of the transport of solids from their natural source to a different location, usually through wind, water, and ice.

Igneous: One of the three types of rocks. Igneous rock is formed through the cooling and solidification of lava or magma.

Sedimentary: One of the three types of rocks. Sedimentary rocks are formed from the deposition of mineral or organic sediments.

Metamorphic: One of the three types of rock. Metamorphic rocks are created by the transformation of existing rock through heat and pressure.

Seamount: A mountain rising from the bottom of the ocean, but that does not reach above the surface of the water.

Mountain: A landform that stands higher than the surrounding land, and often has steeper sides than a hill. They are usually formed through volcanism, plate tectonics, or occasionally erosion.