

FORMATION OF IGNEOUS ROCKS

- Igneous Rocks form when hot magma cools and hardens
- Magma
 - Located near the surface to 150 km below the surface
 - Temp. of magma ranges from 650 to 1,220 C depending on chemical composition and pressure
 - Heat that melts rock comes from inside the earth, radioactive elements, and heat left over from the formation of the planet
 - Magma is less dense than surrounding rocks and is forced upward to the surface
 - When magma reaches the earth surface it is called **lava**.

Intrusive Rocks

- Rocks that form from magma below the surface.

Extrusive Rocks

- Rocks that form as lava cools on the earth's surface

Volcanic Glass

- Rocks that cooled so quickly that few or no mineral grains formed, atoms in these rocks are not arranged in orderly pattern- pumice, obsidian, scoria
- Pumice and scoria, gases become trapped and holes are left behind.

Classifying Igneous Rocks

- Intrusive and Extrusive
- The type of magma they are formed from- basaltic, andesitic, or granitic magma
 - **Basaltic igneous rocks** are dense, dark- colored rocks, form from magma rich in iron and magnesium, poor in silica
 - Basaltic magma flows freely from volcanoes in Hawaii
 - **Granitic igneous rocks** are light- colored, lower density than basaltic rocks
 - Granitic magma is thick and stiff and contains lots of silica but lesser amounts of iron and magnesium
 - **Andesitic igneous rocks** have mineral compositions between basaltic and Granitic rocks
 - Volcanoes around the Pacific Ocean