Chapter 5 : Igneous Environments

Must completely melt to become an igneous rock

Characteristics

Depending on where it came from, it dictates what it looks like

Oceanic vs. Yellowstone

Volcanoes can have weak spots, not one single point in the mountain

Textures

- Pegmatite : large individual crystals
- Coarse Grained :
- Medium grained :
- Fine grained
- Glassy
- Porphyritic
- Vesicular : trapped gasses inside the rock and floats (pumicis)
- Welded

High pressure, high heat rock wants to push its way up because hot things want to rise. The rate in which it cools is proportional to how fast it is coming up from the ground

Water plays a big role in volcanic rocks

Felsic

- Granite
- Rhyolite

Takes a long time for this to break down

Cooling at the surface : extrusive (Rhyolite is volcanic ash) Cooling under the ground : intrusive

Intermediate

- Diorite
- Andesite

Mafic

- Gabbro
- Basalt

Ultramafic

Melting

Converting solid to liquid

You will get some new type of rocks when you do that

Temperature and pressure graph (insert here)

Role of Source Area

Different viscosity (how easily it flows) - High : honey - Low : water

How much water is in the subsurface is important

Pillow basalts form when lava comes in contact with water directly

Irregular Plutons

Small amount of exposed igneous rock

Batholith

When giant igneous rocks were buried and now has been uplifted

Dikes

Vertical cut

Sill

Horizontal cut

Apache Tears

- Teardrop shaped obsidian