Earth Science 11
Unit 3 – Minerals and Rocks
Day 4 – Introduction to Igneous Rocks

Name: _____

Date: _____

Block: _____

Igneous comes from the Latin word for "_____" FIRE

Two Types of Igneous Rocks:

Igneous Intrusive: _____

Rocks that form when magma hardens beneath Earth's surface

This is because they intrude into the existing rocks.

Granite is a common igneous rock.

_____

Igneous Extrusive: _____

Formed when lava hardens on earth's surface.

This is because they extrude onto the surface

Rhyolite is a common example.

cools fast

Rhyolite   cools slow granite   NOT GRANITE!!!!!!!!

Magma vs. Lava:

Magma: a mixture of silicate melt plus crystals (minerals) coexisting with the melt plus gases (if present).
As long as the material is partially molten and can flow it can be considered a magma.

Lava: a magma that has reached the Earth's surface.

Classification of Igneous Rocks:

Texture: mainly just the size of the minerals. Very subjective.
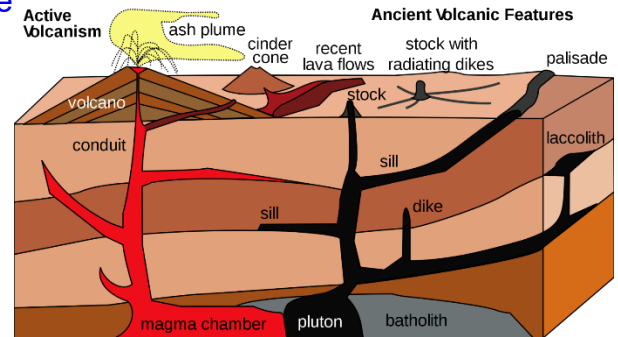Course grained, fine grained and mixed grained. Generally indicated where rock is formed.
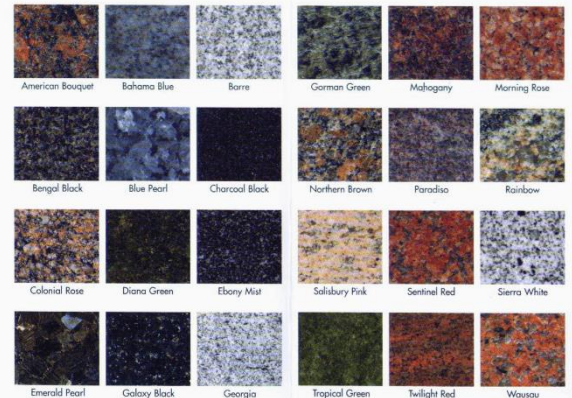
Course Granite

Fine Rhyolite

Remember what I said about colour being a bad indicator

1) **Coarse Grained Texture:** _____
   magma cools very slowly and results in the formation of large crystals.
   _____

2) **Fine Grained Texture:** _____magma cools very fast and results in the formation of rocks with small,
   interconnected mineral grains.
   _____

3) **Glassy Texture:** ____magma cools so fast that it does not have time to form a network of crystals,

   _____therefore it looks shiny (like glass)._____

4) **Porphyritic Texture:** ___magma that cools and has both large crystals and fine-grained minerals in the
   rock that is formed. Magma sits a bit and cools slowly before errupting.
   _____

Composition: _____

   Granitic Composition – made almost entirely of light-colored minerals (quartz and feldspar).
   _____

   Basaltic Composition – made almost entirely of dark-colored minerals (magnesium and iron).
   _____

   Andesitic Composition – rocks with a composition between granitic and basaltic rocks.
   _____

   _____

   _____
   _____Felsic and coarse grained_____mafic and fine grained_____

Granite   **Basalt**

Felsic: Mafic:
light stuff   dark stuff

Andesite   Mixed stuff