

Earth Science

With

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Rocks

- ◆ What is a rock?

- ◆ A group of minerals bound together.
- ◆ (See picture on pg. 118 in text)

- ◆ There are basically 3 types of rocks:

Sedimentary

Igneous

Metamorphic

Igneous Rocks

- ◆ These rocks are formed by the cooling and hardening of magma.
- ◆ There are 2 types of magma:
 - ◆ Felsic – Thick, slow moving, contains large amounts of silica.
 - ◆ Mafic – Thin, fast moving, hotter, contains large amounts of iron & magnesium.
- ◆ Crystal size is dependant upon cooling rate:

Igneous Rocks

Cools Fast.....Small Crystals

Cools Slow.....Large Crystals



Igneous Rocks

- ◆ Extrusive vs. Intrusive

- ◆ Extrusive:

- ◆ Formed at the surface of the earth as a result of volcanic activity.
- ◆ Cools very fast – small crystals!
- ◆ May capture gas pockets in rock:

Vesicular

- ◆ Intrusive:

- ◆ Formed from magma underground
- ◆ Cools slowly – large crystals!

Igneous Rock Families

◆ Granite Family:

- ◆ Formed from felsic magmas.
- ◆ Intrusive
- ◆ Usually coarse grained from cooling slowly underground.
- ◆ Examples include:

Granite Obsidian
Pumice

Igneous Rock Families

- ◆ Gabbro Family:


- ◆ Mafic Rocks

- ◆ Dark in color & very dense.

- ◆ Usually contain olivine & pyroxene.

- ◆ Examples:

Gabbro Basalt

A stylized, dark teal silhouette of a mountain range is located in the bottom right corner of the slide, partially overlapping the text.

Igneous Rock Families

◆ Diorite Family:

- ◆ Intermediate composition Rocks (neither mafic or felsic, but has characteristics of both)
- ◆ Usually grey or green.
- ◆ Examples:

Diorite

Andesite

Igneous Rock Families

- ◆ Other Igneous Rocks:
 - ◆ Some do not fit into any of the families.
 - ◆ Examples:

Dunite

Peridotite

A stylized, dark teal silhouette of a mountain range is located in the bottom right corner of the slide, partially overlapping the text 'Peridotite'.

Igneous Intrusions:

- ◆ Where magma seeps up between the underground rock layers or forces its way through cracks, then solidifies into igneous rock.
- ◆ (See diagram pg. 125)

Igneous Intrusions:

◆ Features to know:

- ◆ Laccolith
 - ◆ Volcanic Neck
 - ◆ Batholith
 - ◆ Stock
 - ◆ Dike
 - ◆ Volcano
 - ◆ Sill
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That's it