

Igneous Rocks

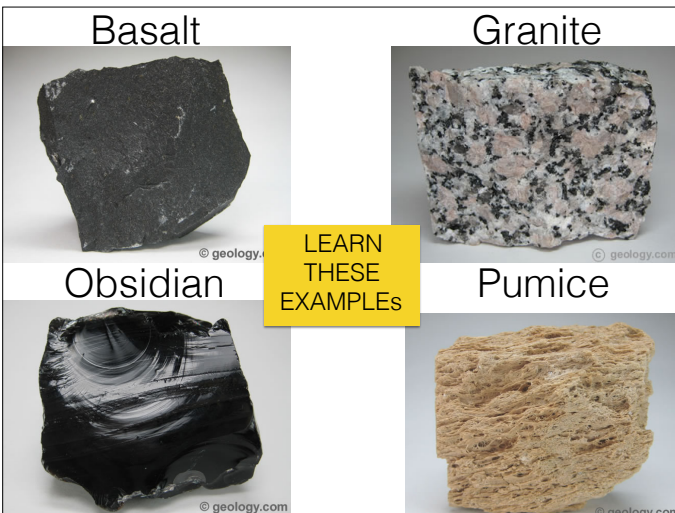
- Be able to name some igneous rocks
- Be able to describe how igneous rocks are formed? volcano, lava, magma cooled/solidified,
- Explain the difference between intrusive and extrusive igneous rocks. (inside volcano, cools slow, big crystals, outside side fast small crystals)

Lesson 5

Igneous Rocks

Starter: Look at this website
www.geology.com

We will be using it a lot during the next few lessons



Practical: You will look at and record your observations for at least 4 igneous rocks.

Colour: Write down the main colours you can see in your igneous rock sample.

Crystal size: Estimate the average size of the crystals using a magnifying glass and a ruler.

Porosity: Add a few drops of water to the rock and then wipe away, does the rock absorb water? Yes/no

Acid Test: Add a few drops of acid to the rock and then wipe away, does the rock react? Bubbling and a white precipitate means it does.

| Describing physical & chemical properties of igneous | | | | |
|--|--------|---------------|---------|--------------------------|
| Rock Name | Colour | Crystals size | Porous? | Does it react with acid? |
| Basalt | | | | |
| Granite | | | | |
| Obsidian | | | | |
| Pumice | | | | |

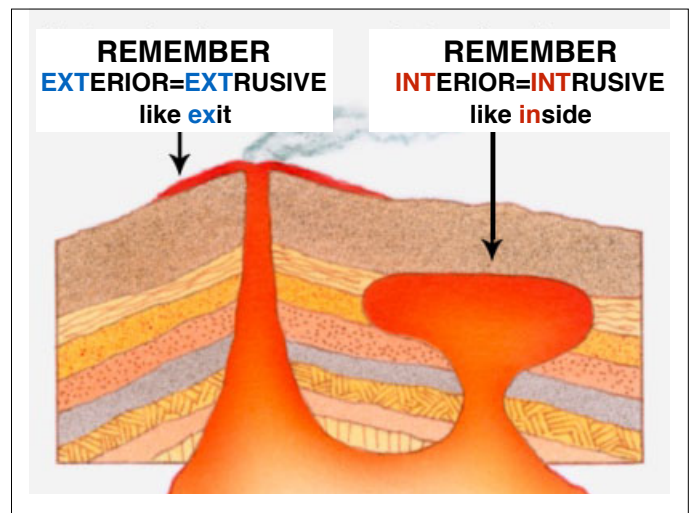
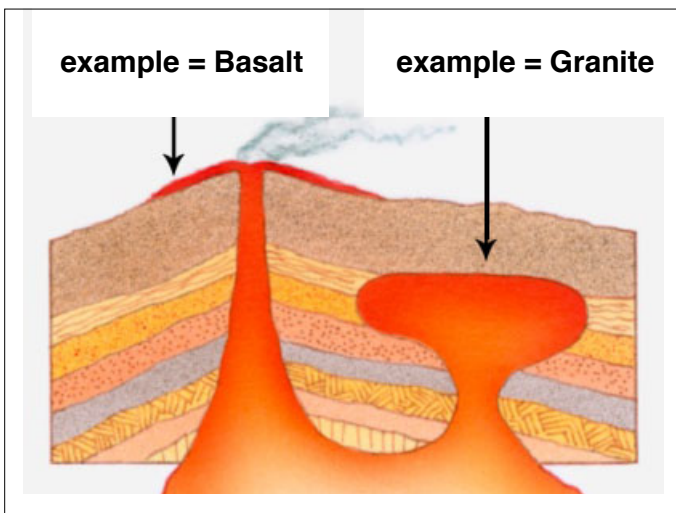
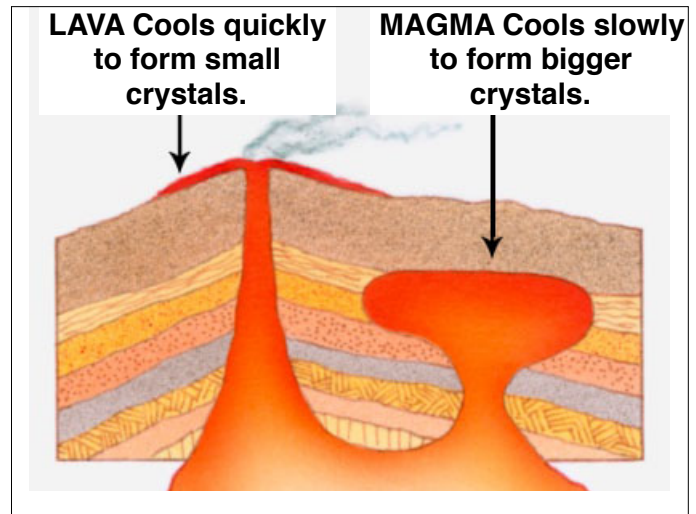
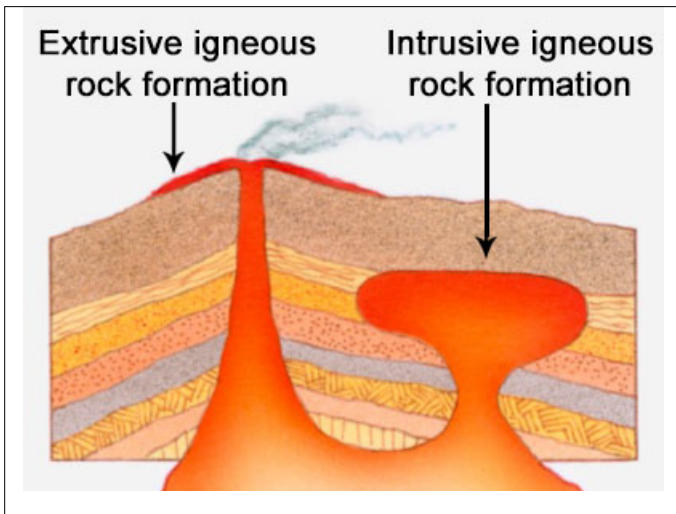
What are Igneous Rocks?

Igneous rocks are formed from the solidification of molten rock material.

There are two basic types.

Intrusive igneous rocks crystallize below Earth's surface and the slow cooling that occurs there allows large crystals to form. An example of an intrusive igneous rocks is **granite**.

Extrusive igneous rocks erupt onto the surface where they cool quickly to form small crystals. Some cool so quickly that they form an amorphous glass (**obsidian**), or trap air inside (**pumice**). An example of an extrusive igneous rock is **basalt**.



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1 Copy and complete using words from the Language bank: Igneous rocks form from cooling _____ or lava. They can be _____, which means they formed on the surface of the Earth, or _____, which means they formed underneath the Earth's surface.

2 Explain the difference between magma and lava. Which one cools to form extrusive igneous rock?

3 Why do intrusive igneous rocks have larger crystals than extrusive ones? Use the word 'particle' in your answer.

4 Typical rock densities: granite 2.75 g/cm³; gabbro 3.0 g/cm³.

a Jo measured the mass and volume of a rock; mass 364 g, volume 120 cm³. Is it granite or gabbro?

b Explain this difference in density between granite and gabbro.

Language bank

- crystals
- dyke
- erupt
- extrusive igneous rocks
- igneous rocks
- intrusive igneous rocks
- lava
- magma
- salol
- sill
- volcano

Which words have you learned so far? SPLAT

| | | | | | |
|------------------|-----------------|-------------|------------------|-----------------|-------------|
| crust | extrusive | magma | crust | extrusive | magma |
| igneous rocks | granite | tremors | igneous rocks | granite | tremors |
| plate boundaries | lava | mantle | plate boundaries | lava | mantle |
| volcanoes | tectonic plates | earthquakes | volcanoes | tectonic plates | earthquakes |
| intrusive | liquid | crystals | intrusive | liquid | crystals |
| tsunami | pumice | basalt | tsunami | pumice | basalt |