

# Igneous rock

## Intrusive (plutonic) rock:

Eighty-seven percent of igneous rocks are intrusive, formed from magma that cools and solidifies deep beneath the Earth's surface. The insulating effect of the surrounding rock allows the magma to solidify very slowly. Slow cooling means the individual mineral grains have a long time to grow, so they grow to relatively large sizes. As a result, intrusive rocks have a characteristically coarse grain size, where the mineral crystals are easily seen with the unaided eye.

## Extrusive (volcanic) rock:

Extrusive igneous rocks are formed from magma that cools and solidifies at or near the Earth's surface. Exposure to the relatively cool temperature makes the erupted magma solidify very quickly. Rapid cooling means the individual mineral grains have only a short time to grow, so their size is very tiny (fine-grained). Sometimes the magma is cooled so rapidly that individual minerals have no time to grow forming a volcanic glass (e.g., obsidian)

## Igneous Rock Classification

Colour	Light coloured	Medium coloured	Dark coloured
Coarse Grained (intrusive)	<b>Granite</b>	(Diorite)	<b>Gabbro</b>
Fine Grained (extrusive)	<b>Rhyolite</b>	(Andesite)	<b>Bassalt</b>

**Pumice:** Pale colour, low density, very porous and will initially float on top of water until pores fill with water (may have cooled in presence of water)

**Obsidian:** glassy surface with dark colours. Almost no crystal formation (very rapid cooling)

## Extras:

**Mica:** breaks off in very thin sheets

2 types:

- **biotite** (dark mica)
- **muscovite** (white mica)

## **Feldspar:**

- Most common mineral in earth's crust
- often a component in igneous rocks (rose coloured flecks in Granite rock)
- can range in colour from red/pink (high in potassium (k-spar)) to green, to other colours.

## **Quartz:**

- second most common mineral in earth' crust
- translucent white to almost transparent depending on the amount of gas trapped during formation
- usually hexagonal crystals are formed in quartz
- **amethyst** is a sub-type of quartz, but with a purple hue

