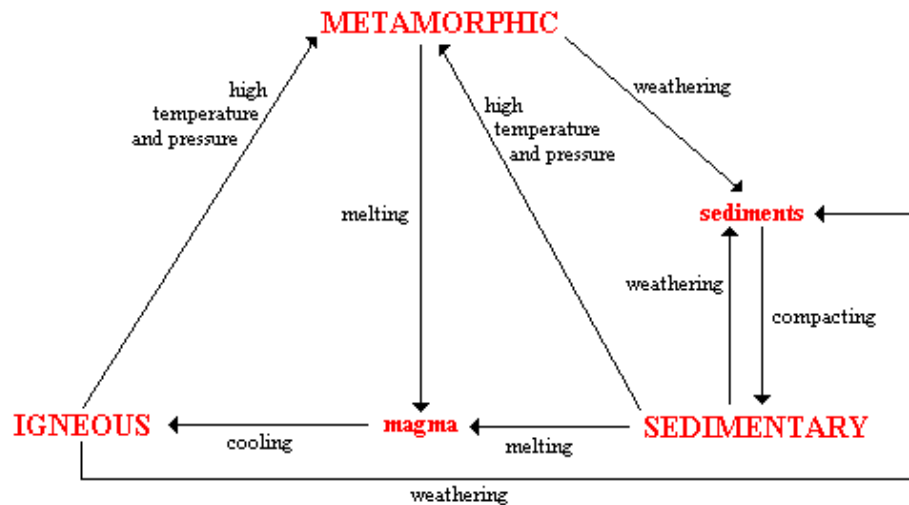
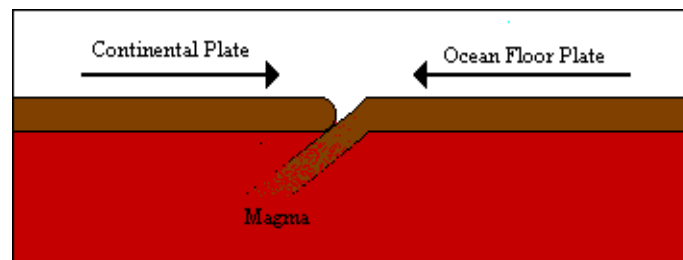


Chemistry Revision Notes – Geology

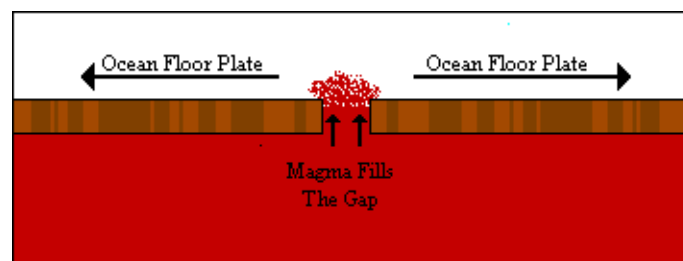
- Sedimentary rocks** are formed by layers of sediment building up and being compressed by the weight (e.g. limestone and sandstone). They often contain **fossils**.
- Igneous rocks** are formed by molten rock (magma) solidifying by cooling. They never contain fossils:
 - Intrusive igneous rocks** cool slowly within the Earth with large crystals (e.g. granite).
 - Extrusive igneous rocks** cool quickly on the Earth's surface with small crystals (e.g. basalt).
- Metamorphic rocks** are formed next to an **intrusion** due to high temperatures and pressures (metamorphic means 'changed'). They are exposed due to **weathering**, and don't often contain fossils, although they can. Examples are marble (from limestone) and slate (from mudstone).
- The **rock cycle**:



- A **destructive plate margin** can cause earthquakes, mountains and volcanoes (e.g. the Andes):

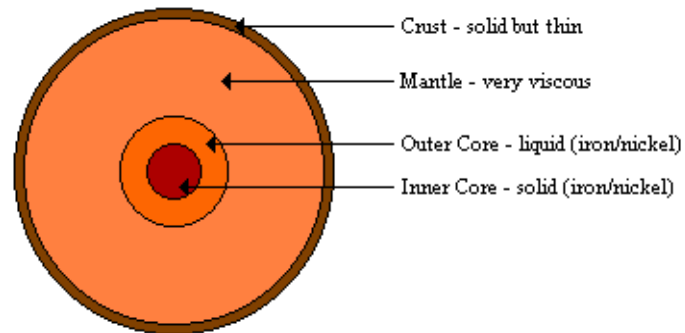


- A **constructive plate margin** forms a new basaltic ocean floor (e.g. the Mid Atlantic Ridge), and causes **sea floor spreading**. Magnetic stripes show the changing magnetic field of the Earth:



- Plates moving past each other can cause earthquakes, due to the friction building up immense forces between the plates (e.g. along the Californian coast).

8. The Earth's structure:



9. **Tectonic plates** move due to convection currents beneath the Earth's surface.
10. **Pangaea** was a single land mass that moved apart to form today's continents. Evidence for this comes from the way South America and Africa seem to fit together, and the fact that both continents have similar rocks and fossils.
11. Carbon dioxide is a **greenhouse gas** (along with methane), resulting in **global warming**.
12. Sulphur dioxide and nitrogen oxides cause **acid rain**.
13. During the first billion years of the Earth:
 - There was intense **volcanic activity**.
 - This released gases for the **atmosphere** and water vapour for the **oceans**.
 - The atmosphere was mainly **carbon dioxide** – there was very little oxygen.
14. Plants were then able to evolve on the Earth:
 - More and more **oxygen** was released into the atmosphere.
 - Carbon dioxide became mostly locked up as **carbonates** and **fossil fuels**.
 - Methane and ammonia reacted with the oxygen to release **nitrogen gas**.
 - The oxygen resulted in the formation of the **ozone layer**, to filter out ultra violet light.
15. The atmosphere today consists of about 78% nitrogen, 21% oxygen, 0.04% carbon dioxide, and small amounts of noble gases (e.g. argon) and water vapour.