

# Earth

## 1. Earth structure

### CONCEPT 1

### STRUCTURE OF THE EARTH

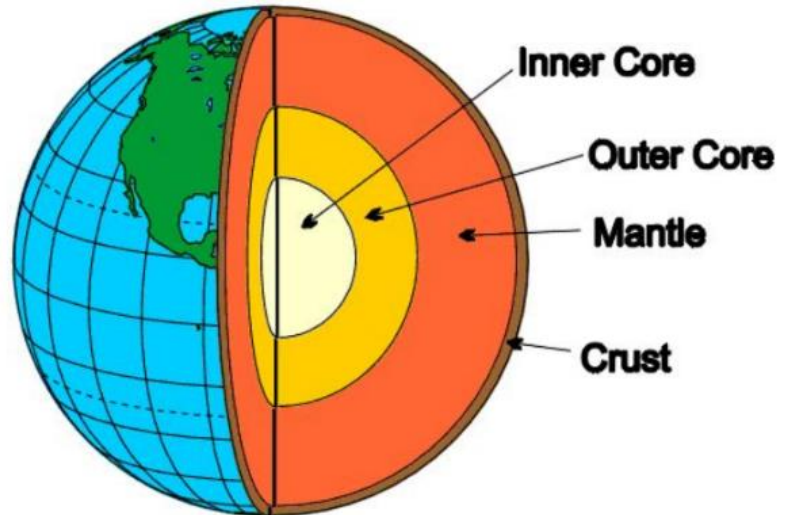
#### NOTES

#### The Earths layers

The Earth is made up of 3 different layers:

- **core** (part solid and part liquid)
- **mantle** (semi-liquid and solid)
- **crust** (solid)

The crust and the outer (solid) part of the mantle are called the **lithosphere**. This is made up of **tectonic plates** (large pieces of rock) that float on the semi-liquid mantle. The tectonic plates move about slowly.



#### Evidence of the Earths layers

It is difficult to study the structure of the Earth as the crust is too thick to drill right through. However, scientists can explain how waves made by earthquakes and explosions travel through the Earth. This gives them evidence of the different types of material in the different layers.

#### Features of the layers

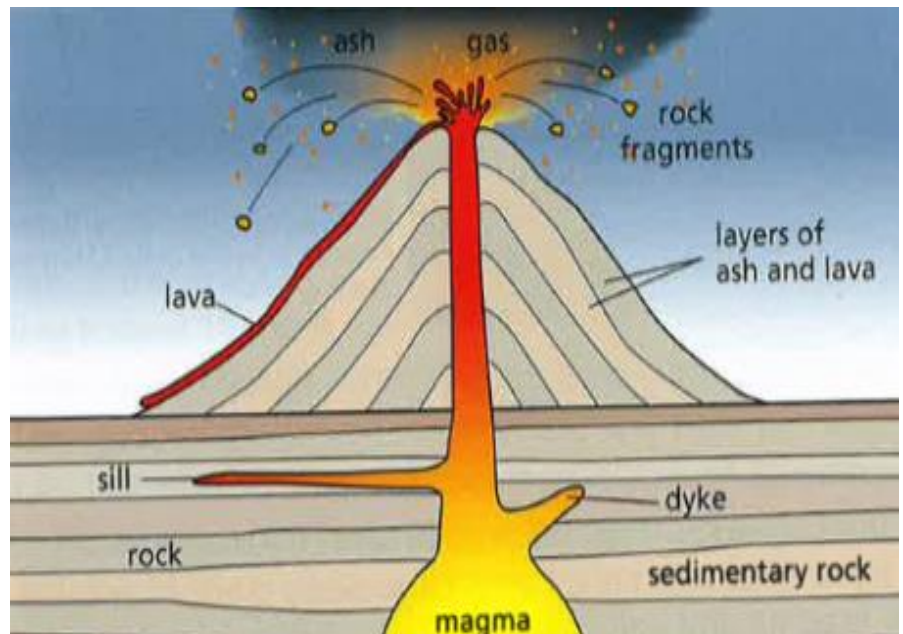
The Earth's **core** is very hot and is made of nickel and iron.

The **mantle** is the very thick middle layer (about 3000km thick). It contains silicon oxide, magnesium oxide and iron oxide. The mantle **flows** and this transfers heat outwards from the core.

The **crust** is relatively thin (5km to 100km thick) and rocky. There are 2 types: **oceanic crust** and **continental crust**.

The oceanic crust is dense and thinner, and made of basalt.

The continental crust is less dense and made of granite.



The Earths **lithosphere** is a relatively cold part. It is made up of 20 tectonic plates which move at a speed of 2.5cm a year on average. Over millions of years whole continents have moved kilometres apart – this process is called **continental drift**. Where tectonic plates meet and move under or over one another, earthquakes and volcanic eruptions can occur. **Magma** (molten rock from the mantle) can rise to the surface through weak areas of the crust, volcanoes. **Lava** is the molten rock that escapes onto the Earth's surface.