

Earth's structure

Formed around **4.5 billion years** ago, Earth is the only planet in our solar system known to support life.

As early as the 5th century BC the ancient Greeks documented the idea of its spherical structure. Since then, our understanding has developed and the current model is a **layered structure**. Each layer has unique chemical and physical properties.

Did you know...?

The Earth is not a perfect sphere. It is an oblate spheroid where the diameter at the equator is approximately 42 kilometres greater than the diameter at the poles.

The layers

Crust

The thin **outermost layer** of the Earth, where we live. It is divided into: **continental crust** (land), which is made mostly from granite and **oceanic crust** (beneath the ocean bed), which mainly consists of basalt.

Mantle

The mostly solid layer between the thin **outer crust** and the dense **core**. Made predominantly of **silicates** (rocks containing silicon and oxygen) but it also contains large amounts of oxides of magnesium and iron.

Outer core

Responsible for the Earth's **magnetic field**, the **outer core** mostly consists of liquid iron and nickel with smaller amounts of sulfur and oxygen.

Inner core

Although at a temperature well above the melting point of iron, the **inner core** is solid owing to the intense pressure (nearly 3.6 million atmospheres) exerted on it.

Did you know...?

It is estimated that 90% of the sulfur on Earth is found in the core.

The layers' properties

Layer	Part of layer	State	Thickness (km)	Temperature range (°C)	Composition
Crust	Oceanic crust	Solid	5–10	0–70	O 46.0% Si 28.0% Al 8.3% Fe 5.6% Ca 4.2%
	Continental crust		10–70		
Mantle		Solid	2900	1400–3000	O 44.0% Mg 22.0% Si 21.0% Fe 6.3%
Core	Outer core	Liquid	2200	4000–6000	Fe 89.0% Ni 5.8% S 4.5%
	Inner core	Solid	1200	5000–600	

Did you know...?

The hottest part of the core reaches 6000°C – as hot as the surface of the Sun!