The Layers Inside the Earth Explained

KS3 Ages 11-14 ⏰ 3 min read

Earth Has Layers Like an Onion

If you could slice Earth in half like a giant apple, you'd see it's made of different layers. Each layer has its own special properties, temperature, and thickness. Scientists have discovered **four main layers**: the **crust**, the **mantle**, the **outer core**, and the **inner core**.

Think of it like an onion or a jawbreaker sweet — the outside is hard and thin, the middle parts are thicker and hotter, and the very centre is solid and extremely hot.

The Crust: Earth's Thin Outer Shell

The **crust** is the layer you live on. It's the thinnest layer, like the skin of an apple. It's only about **5 to 70 kilometres thick**. This hard, rocky layer is made of **solid rock and soil** and includes all the continents and ocean floors. Even though it feels solid beneath your feet, the crust is actually broken into large pieces called **tectonic plates** that slowly move around.

The Mantle: Hot and Flowing Rock

Beneath the crust is the **mantle**, which is much thicker and hotter. It reaches temperatures of between **1,000 and 3,500 degrees Celsius**. The mantle is made of very hot, dense rock that slowly flows like honey — extremely slowly, over millions of years. This movement of the mantle helps drive the movement of the tectonic plates above it.

Think of it like a pot of thick syrup being heated on a stove — it moves and churns, but much more slowly than water would.

The Outer Core: Liquid Metal

Below the mantle lies the **outer core**, which is roughly **2,300 kilometres thick**. The temperature here reaches about **4,000 to 5,200 degrees Celsius**. This layer is so hot that the metal inside it actually melts into a liquid. The outer core is made mainly

of **iron and nickel**. The movement of this liquid metal creates Earth's **magnetic field**, which protects us from harmful radiation from space.

The Inner Core: A Solid Ball of Metal

At the centre of Earth is the **inner core**, a solid ball of metal about **1,220 kilometres in radius**. It's even hotter than the outer core — around **5,200 degrees Celsius** — almost as hot as the surface of the Sun! Despite being hotter, the inner core stays solid because of the enormous pressure from all the layers pressing down on it from above.

Think of it like a marble that stays hard even when heated, because there's such enormous weight crushing down on it.