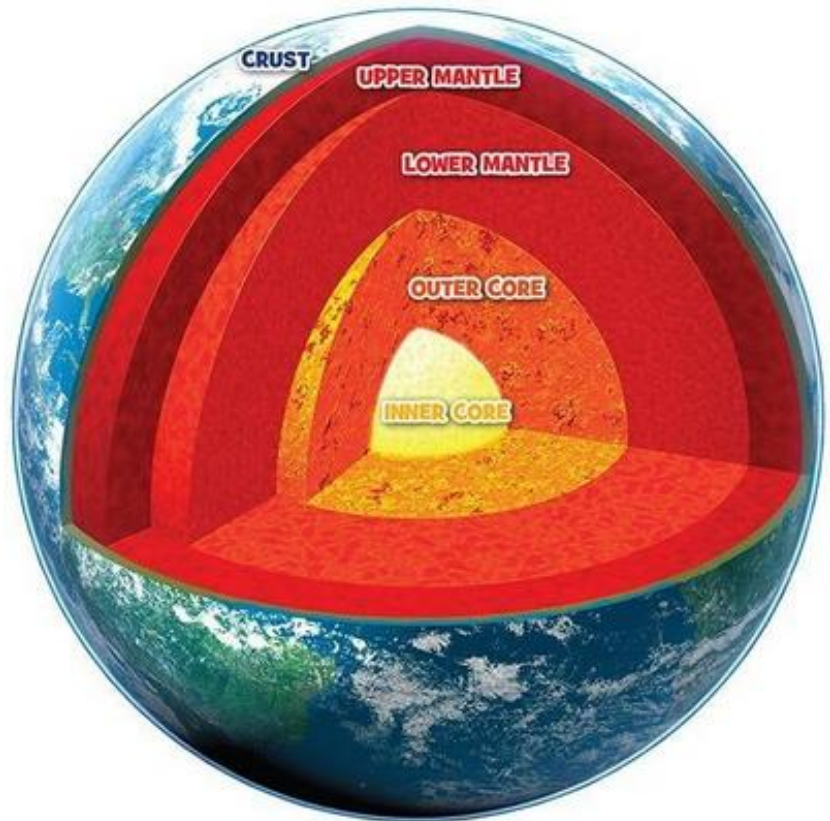


Structure of the Earth

Join us on our journey to the centre of the Earth!

Get ready to dig deep, gang, and join us on a fascinating journey to the centre of the Earth...

The secrets buried inside our planet are revealed by recording and studying things called **seismic waves**. Caused by things like earthquakes, explosions and the movement of our oceans, there are two types of seismic wave - a **shear wave**, which won't travel through liquid; and a **pressure wave**, which moves through both liquid and solids. These waves show that the Earth is made from five layers: the inner and outer core, the lower and upper mantle, and the crust.



Inner Core

Temperature: 5,000°C - 6,000°C

State: Solid

Composition: iron and nickel

The Earth's inner core is a huge metal ball, **2,500km** wide. Made mainly of iron, the temperature of the ball is **5,000°C** to **6,000°C** - that's up to 6,000 times hotter than our atmosphere and scorching enough to make metal melt! The metal at the inner core stays solid because of the incredible pressure surrounding it.

Outer Core

Temperature: 4,000°C - 6,000°C

State: Liquid

Composition: iron, nickel, sulphur and oxygen

This liquid layer of iron and nickel is **5,150km** deep. The outer core flows around the centre of the Earth, and the movement of the metals creates our planet's magnetic field.

Lower Mantle

Temperature: 3,000°C

State: solid

Composition: iron, oxygen, silicon, magnesium and aluminium

The lower mantle is found between **670km** and **2,890km** below the surface, and is made from solid rock. The rock is hot enough to melt, but is solid because of the pressure pushing down on it.

Upper Mantle

Temperature: 1,400°C - 3,000°C

State: liquid / solid

Composition: iron, oxygen, silicon, magnesium and aluminium

This layer is up to **670km** below the Earth's surface. The lower part of the upper mantle is made from both solid and melted rock (liquid), while the rock in the upper region is stiffer, because it's cooler.

Crust

Temperature: Around 22°C

State: Solid

Composition: *Oceanic crust* made up of iron, oxygen, silicon, magnesium and aluminium.

Continental crust made up of granite, sedimentary rocks and metamorphic rocks.

The Earth's surface is covered by its thinnest layer, the crust. Land is made of **continental crust**, which is **8km** to **70km** thick and made mostly from a rock called granite. The layer beneath the ocean bed is made of **oceanic crust**, which is about **8km** thick and made mainly from a rock called basalt.

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