Why Volcanoes Erupt and the Earth Shakes

KS2 GEOGRAPHY KS3 SCIENCE Ages 10-13 ⏰ 3 min read

The Earth Has a Moving Skin

Imagine if the ground under your feet wasn't solid all the way down. Well, it's not! The **Earth's crust** is broken into **7 major tectonic plates** — huge pieces of rock that are constantly moving, sometimes just a few centimetres each year. These plates float on a hotter, softer layer called the **mantle** beneath them.

Think of it like a cracked eggshell floating on warm honey. The cracks are your tectonic plates, and they're slowly moving around.

What Causes Earthquakes

Earthquakes happen when two tectonic plates bump into each other, rub against each other, or suddenly slide apart. When plates collide or grind together, they build up enormous amounts of pressure and energy. Eventually, something has to give — and when it does, that stored-up energy releases all at once, causing the ground to shake violently.

This is why **earthquakes happen near plate boundaries** — the edges where two plates meet. Countries like **Japan**, **Chile**, and **New Zealand** sit on or near these boundaries, so they experience many earthquakes.

Think of it like pushing two blocks of ice together on a table. When you push them harder and harder, they suddenly jump apart with a jolt — that's like an earthquake.

What Causes Volcanoes

Volcanoes form where hot, liquid rock from inside the Earth finds a way to the surface. Deep beneath the crust, it's so hot that rock melts into a liquid called **magma**. When pressure builds up, this magma pushes upwards through cracks in the crust until it erupts from a volcano.

Most volcanoes occur along tectonic plate boundaries too. When two plates collide and one slides beneath the other in a process called **subduction**, it melts the rock

above it, creating magma. When a plate pulls apart, magma can also seep up to fill the gap.

The most dangerous volcanoes are often found at **convergent plate boundaries** — where two plates crash into each other. These produce explosive eruptions with thick, sticky magma that gets trapped and builds pressure.

Think of it like shaking a fizzy drink bottle. Pressure builds up inside, and when you open the cap, liquid erupts everywhere — that's similar to a volcanic eruption.

Why This Matters

Understanding volcanoes and earthquakes helps scientists predict where they'll happen and how strong they might be. This knowledge saves lives because people in at-risk areas can prepare and evacuate if needed. By studying **plate tectonics**, we learn that our planet is constantly changing and reshaping itself — a dynamic world far older and more powerful than we are.