Earthquake Explorers: Investigating Tectonic Forces

Learning objective: To understand the physical processes of earthquakes, including tectonic plate movement, epicentres, and the impact on our planet's surface.

Use these flashcards to test your knowledge of how Earth’s internal forces shape our geography. Read the term or question on the front, then check the answer on the back.

What are the giant, moving puzzle pieces that make up the Earth's outer shell?

Tectonic Plates

Define the 'Focus' of an earthquake.

The exact point beneath the Earth's surface where the earthquake begins.

What is the 'Epicentre'?

The point on the Earth's surface directly above the focus where the shaking is usually strongest.

Explain the role of a 'Seismograph'.

A scientific instrument used to detect and record the intensity and duration of seismic waves.

What is a 'Fault Line'?

A fracture or crack in the Earth's crust where blocks of rock move past each other.

Describe the 'Mantle' in relation to earthquakes.

The thick layer of hot, semi-solid rock beneath the crust that moves, causing the tectonic plates above it to shift.

What does 'Magnitude' measure?

The amount of energy released by an earthquake, often measured on a scale such as the Richter scale.

Why do earthquakes often occur at the boundaries of tectonic plates?

Because plates are constantly grinding, sliding, or colliding, causing a build-up of pressure that is suddenly released.

Compare and contrast the Focus and the Epicentre.

The Focus is the underground origin point, while the Epicentre is the location on the surface directly above it.

What might happen if tectonic plates become 'stuck' while trying to move?

Friction causes tension to build up; when the rock finally snaps or slips, the stored energy is released as seismic waves, causing an earthquake.

Explain why scientists find it difficult to predict exactly when an earthquake will occur.

Because the movement of plates deep underground is complex, and the pressure build-up happens over long periods, making it hard to identify the precise moment of release.

Justify why buildings in earthquake-prone regions are often constructed with flexible materials.

Flexible materials allow structures to sway with the seismic waves rather than snapping, which significantly reduces the risk of collapse and injury.