

Earthquakes: Shifting Foundations

Learning objective: To understand the causes of earthquakes and their impact on the Earth's crust.

Use your geographical knowledge to answer the questions below. Think carefully about how tectonic plates interact to shape our world.

Finn the dolphin has been exploring the ocean floor and has discovered that the Earth's outer layer is not one solid shell. Instead, it is broken into massive, moving sections called tectonic plates. When these plates push against each other, grind past one another, or pull apart, they create immense pressure. When the rock suddenly snaps or slips, energy is released in the form of seismic waves, which cause the ground to shake—this is an earthquake.

Word bank: tectonic plates · crust · seismic waves · epicentre · magnitude · fault line · mantle · tremor

1. Explain why earthquakes are more likely to occur near the boundaries where tectonic plates meet rather than in the middle of a plate. (2 marks)

2. Define the term 'epicentre' and describe its relationship to the focus of an earthquake. (2 marks)

3. If a town is hit by an earthquake with a magnitude of 7.2, compare the potential consequences to an earthquake with a magnitude of 3.0. Justify your answer. (3 marks)

4. What might happen if the tectonic plates beneath the ocean floor shifted suddenly? Consider the movement of water. (2 marks)

5. Max the monkey is designing a building to withstand earthquakes. Suggest two structural features he should include to prevent the building from collapsing. (2 marks)

Draw: Draw a cross-section diagram of the Earth's crust showing two tectonic plates colliding. Label the 'fault line' and use arrows to show the direction of plate movement.



Extension challenge: Research how different countries prepare for earthquakes. Create a 'Survival Guide' poster for a school, outlining three essential actions to take during a tremor. Explain why your chosen actions are the most effective for keeping people safe.