Earthquakes: Shaking the Earth with Finn the Dolphin

Learning objective: To understand the physical process of earthquakes, including how they occur at plate boundaries and how their impact is measured.

Read each question carefully and use your knowledge of physical geography to provide clear, detailed answers. Finn the Dolphin has been mapping the ocean floor and needs your help to understand the science behind these powerful events.

Finn the Dolphin has discovered that the Earth's outer layer is not one solid piece, but is broken into large sections called tectonic plates that are constantly moving. When these plates rub against each other, get stuck, and then suddenly slip, they release a massive amount of energy that causes the ground to shake. This is an earthquake.

Word bank: Tectonic plates · Epicentre · Seismometer · Richter scale · Crust · Fault line

1. Explain the relationship between tectonic plates and the creation of a fault line. (2 marks)

2. What is the difference between the 'focus' of an earthquake and the 'epicentre'? (2 marks)

3. If a seismometer records a high number on the Richter scale, what does this tell us about the earthquake? (1 mark)

4. Why do you think earthquakes occurring under the ocean might be particularly dangerous for coastal areas? (2 marks)

5. Max the Monkey is trying to build a stable shelter. Suggest two design features that could help a building survive the shaking of an earthquake. (2 marks)

Draw: Draw a diagram showing two tectonic plates pushing against each other. Label the 'fault line' and use arrows to show the direction the plates are moving.

Extension challenge: Research a historical earthquake event. Write a short paragraph explaining where it happened, when it occurred, and what the immediate impact was on the local environment and community.