Earthquakes: Shaking the Earth

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

Read the passage carefully and answer the questions below using full sentences.

Finn the dolphin has travelled the world's oceans, but even he knows that the most dramatic changes happen beneath the waves. The Earth's outer shell, called the crust, is not one solid piece. Instead, it is broken into massive sections known as tectonic plates. These plates are constantly moving, though they usually shift so slowly that we do not notice. However, sometimes these plates become stuck at their edges due to friction. When the pressure finally builds up enough to overcome this friction, the plates slip suddenly. This release of energy sends powerful seismic waves rippling through the ground, which we experience as an earthquake.

The point directly above where the slip occurs is called the epicentre. While earthquakes can happen anywhere, they most frequently occur along fault lines where plates meet. Scientists measure the intensity of these tremors using the magnitude scale. A minor earthquake might only cause a light rattle, while a major one can reshape the landscape, cause buildings to sway, and create significant challenges for communities living in those regions. Understanding how these plates move helps experts design safer structures to protect people worldwide.

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

1. According to the passage, what are the Earth's tectonic plates? (2 marks)

2. What is the name given to the point directly above where the plate slip occurs? (1 mark)

3. Why might an earthquake happen at a fault line rather than in the middle of a plate? (2 marks)

4. How does the passage suggest that friction plays a role in causing an earthquake? (2 marks)

5. Why is it important for scientists to study how tectonic plates move? Justify your answer. (3 marks)

Draw: Draw a cross-section of the Earth showing two tectonic plates pushing against each other, with jagged lines representing the energy waves spreading out from the fault line.

Extension challenge: Research a famous historical earthquake and create a fact file detailing the location, the magnitude, and how the local community recovered afterwards.