

Finn's Earth-Shaking Expedition: Understanding Tectonic Plates

Learning objective: To understand the causes of earthquakes, identify the layers of the Earth, and explain how plate tectonics result in seismic activity.

Finn the dolphin has been mapping the ocean floor and has discovered some fascinating facts about how the Earth moves. Use the word bank to label the diagram parts and answer the questions below to help Finn document his findings. For the 'True or False' section, you must justify your answer by explaining the reasoning behind your choice.

Word bank: Crust · Mantle · Outer Core · Inner Core · Tectonic Plates · Epicentre · Seismic Waves · Fault Line

1. 1. Explain why the Earth's crust is often described as being like a giant jigsaw puzzle. How does this movement lead to an earthquake? (3 marks)

2. 2. True or False: Earthquakes only happen on land. Justify your answer using your knowledge of ocean geography. (2 marks)

3. 3. Compare and contrast the 'epicentre' of an earthquake with the 'fault line'. (3 marks)

4. 4. If you were a structural engineer, what features might you include in a building design to ensure it is resilient during a seismic event? (3 marks)

5. 5. Justify your answer: Why do scientists find it difficult to predict the exact time and date of an earthquake? (2 marks)

6. 6. What might happen if the tectonic plates stopped moving entirely? Discuss the potential impact on the Earth's surface. (3 marks)

Draw: Draw a cross-section of the Earth showing the four main layers (Crust, Mantle, Outer Core, Inner Core). Label the tectonic plates on the surface and draw an arrow showing how two plates might slide past each other.



Extension challenge: Imagine you are a reporter for a scientific journal. Write a short, formal report (150 words) describing the impact of a magnitude 5.0 earthquake on a coastal town. Use the vocabulary from our word bank and explain how local geography influences the amount of damage caused.