

Volcano Investigator: Mapping the Earth's Layers

Learning objective: To identify, describe and understand the key parts of a volcano and the processes that cause them to erupt, as per the UK Class 4 Geography curriculum.

Finn the dolphin has been exploring underwater volcanoes and needs your help to label a cross-section diagram. Use the word bank provided to correctly identify the features of a volcano. Once labelled, use your knowledge to answer the questions below.

Word bank: Magma · Lava · Vent · Crater · Crust · Mantle

1. Explain why the temperature of the Earth increases as you travel from the crust down into the mantle. What evidence do we see of this heat on the surface? (2 marks)

2. Compare and contrast 'magma' and 'lava'. At what point does the substance change its name? (2 marks)

3. Justify your answer: Why do you think most volcanoes are found near the edges of tectonic plates rather than in the middle of a continent? (3 marks)

4. What might happen to the shape of a volcano after a massive, explosive eruption? Consider the role of the crater. (2 marks)

5. If a tourist wanted to visit a volcanic region, what safety precautions might local authorities put in place? Explain your reasoning. (2 marks)

6. Imagine a new island is formed by a volcanic eruption. Why might this island be a 'blank canvas' for scientists studying the natural world? (2 marks)

Draw: Draw a cross-section of a volcano. Ensure you clearly label the Magma, Lava, Vent, Crater, Crust, and Mantle. Add colour to show the intense heat deep underground compared to the cooler surface.



Extension challenge: Research the 'Ring of Fire'. Create a detailed map showing why this area is significant for volcanic activity. Write a short, persuasive speech from the perspective of a geologist explaining to a local community why it is important to monitor volcanic tremors.