

Finn's Coastal Adventures: The Changing Shoreline

Learning objective: To identify and describe the physical processes of coastal erosion and deposition.

Read the passage carefully, then answer the questions below. Use full sentences and refer back to the text to support your answers.

Finn the dolphin spends his days mapping the ever-changing British coastline. As he glides through the waves, he observes the powerful force of the ocean hitting the cliffs. This process, known as erosion, occurs when waves crash against the rock, forcing air into cracks and gradually breaking pieces away. Finn often watches 'abrasion' in action, where smaller rocks and pebbles are hurled against the cliff face, scouring it like sandpaper.

However, the sea does not just take away; it also gives. In sheltered bays, the water slows down, causing it to drop the sand and shingle it has been carrying. This process is called deposition. Over time, these materials pile up to create beautiful sandy beaches and spits. Finn has noticed that the shape of the coastline is never permanent. Hard rocks, like granite, form jagged headlands that stick out into the sea, while softer rocks are worn away to create deep, curved bays. By studying these shifting patterns, Finn helps us understand how our island home is sculpted by the relentless, rhythmic dance of the tides and the wind.

Word bank: erosion · deposition · headland · sediment · landform · abrasion · coastline

1. Identify two specific processes mentioned in the text that contribute to the changing shape of the coastline. (2 marks)

2. What is the difference between how hard rock and soft rock react to the power of the ocean? (2 marks)

3. Why does Finn describe the ocean's work as a 'rhythmic dance' rather than just a destructive force? (2 marks)

4. Explain why deposition is more likely to happen in a sheltered bay than against a steep, exposed cliff. (3 marks)

5. Justify your answer: If the Earth's climate caused sea levels to rise significantly, how would this impact the processes Finn observes? Explain your reasoning. (3 marks)

Draw: Draw a labelled diagram showing a section of the coastline. Include a jagged headland, a sandy bay, and arrows showing where erosion and deposition are taking place.



Extension challenge: Research a famous UK coastal landform, such as Durdle Door or The Giant's Causeway. Write a short paragraph explaining how you think erosion has shaped it over thousands of years. Would you classify this as a stable or unstable environment? Justify your opinion using evidence from the text.