

Year 5 Geography: Exploring the Polar Regions

Learning objective: To demonstrate knowledge of the physical and human characteristics of the Arctic and Antarctic, and to understand the environmental challenges facing these biomes.

Read each question carefully. Use your knowledge of geography and scientific evidence to provide clear, detailed answers. Ensure your spelling and grammar are accurate.

Finn the dolphin has been mapping the world's oceans and has reached the extreme North and South. He notes that while both regions are characterised by freezing temperatures, they are vastly different. The Arctic is a frozen ocean surrounded by land, home to diverse indigenous communities, whereas the Antarctic is a massive, elevated continent covered by a thick ice sheet, with no permanent human inhabitants. Both regions are currently experiencing significant environmental shifts due to rising global temperatures, affecting the delicate balance of their unique ecosystems.

Word bank: Arctic · Antarctic · Tundra · Glacier · Permafrost · Latitude · Indigenous · Sustainability · Climate change · Biodiversity

1. Identify one major geographical difference between the Arctic and the Antarctic. (2 marks) (2 marks)

2. Define the term 'permafrost' and explain how it influences the type of vegetation that can grow in the Arctic tundra. (3 marks) (3 marks)

3. Explain why the Polar Regions are vital to the Earth's climate system, even for countries located far away from the poles. (4 marks) (4 marks)

4. Compare and contrast the human impact on the Arctic versus the Antarctic. Why is the Antarctic governed by a specific international treaty? (4 marks) (4 marks)

5. What might happen to global sea levels if the ice sheets in the Antarctic continue to melt at an accelerated rate? Justify your prediction using geographical reasoning. (3 marks) (3 marks)

6. Extended Writing Task: Imagine you are a scientist working in the Arctic. Write a formal report (approx. 100-150 words) describing the impact of climate change on local biodiversity and suggest one strategy for international cooperation to protect these fragile environments. (5 marks) (5 marks)

Draw: Sketch a labelled diagram showing the difference between sea ice and land ice. Include a cross-section of a glacier to demonstrate your understanding of glacial movement.



Extension challenge: Total: /25. Greater Depth Challenge: Research the concept of 'albedo' in geography. Explain how the melting of polar ice creates a positive feedback loop that accelerates global warming. Why is this considered one of the most critical tipping points in our planet's future?