

Journey to the Frozen Frontiers

Learning objective: To understand the physical geography, climate, and unique environmental challenges of the Earth's Polar Regions.

Read the passage carefully and answer the questions using full sentences. Use your geographical knowledge to explain the impact of these extreme environments.

Finn the dolphin has travelled from the temperate seas to the icy fringes of the Earth. Polar regions, located at the extreme northern and southern latitudes, are defined by their freezing temperatures and vast, shimmering landscapes. The Arctic, in the north, consists of a frozen ocean surrounded by cold, treeless tundra. In contrast, the Antarctic is a massive, ice-covered continent, the coldest and windiest place on our planet. Both regions are vital to the Earth's climate, acting as giant mirrors that reflect sunlight back into space. Underneath the thick blankets of snow, the ground remains permanently frozen, a layer known as permafrost. These environments are home to incredible wildlife, from robust seals to migratory birds, all perfectly adapted to survive where water often turns to solid ice. However, these delicate ecosystems are highly sensitive to change. As global temperatures rise, the glaciers retreat, altering the natural habitat for creatures that call these frozen wildernesses home. Finn observes how the melting ice changes the sea levels, reminding us that these distant poles are connected to every corner of our globe.

Word bank: Arctic · Antarctic · tundra · glacier · permafrost · ecosystem · latitude · biodiversity

1. Identify two physical differences between the Arctic and the Antarctic as mentioned in the text. (2 marks)

2. According to the passage, what is the 'permafrost' and where is it found? (2 marks)

3. Explain why the author describes polar regions as 'giant mirrors' for the Earth. (2 marks)

4. Infer how a rise in global temperature might specifically impact the animals living in the polar regions. (2 marks)

5. Justify why it is important for humans living thousands of miles away to be concerned about melting polar ice. Use evidence from the text to support your answer. (3 marks)

Draw: Draw a split-screen illustration showing the Arctic tundra on the left and the icy Antarctic continent on the right, including at least one animal adapted to each environment.



Extension challenge: Compare and contrast the challenges faced by explorers in the Arctic versus the Antarctic. If you were leading a scientific expedition to one of these regions, which would you choose and what specific equipment would be essential for your survival and research? Justify your choices.