



Lesson 1: Antarctic climate and adaptations

Aim and introduction

This lesson explores what pupils already know about the Antarctic as well as identify key features of the biome including the climate. They then use this information to discover how plants and animals have adapted to survive in this biome.

This lesson should take approximately 1 hour to complete.

Curriculum links

Physical geography, including: climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes, and the water cycle.

Learning goals

1. Interpret information to locate places on a map.
2. Explore the Antarctic biome.
3. Understand how plants and animals have adapted to the Antarctic biome.

Learning outcomes

- **Greater depth:**
Building on existing knowledge, pupils show excellent understanding of the Antarctic. They filter information to apply the most relevant to show how a plant or animal has adapted to the Antarctic biome.
- **Expected level:**
Building on some previous knowledge, pupils show good understanding of the Antarctic. They use information to apply understanding how a plant or animal has adapted to the Antarctic biome.
- **Working towards:**
Pupils show sound understanding of the Antarctic - this may be from previous knowledge. They use information to apply understanding how a plant or animal has adapted to the Antarctic biome, some may be inaccurate or irrelevant.
- **Support:**
Pupils show limited understanding of the Antarctic. They use information to show how a plant or animal has adapted to the Antarctic biome, expect some inaccurate or irrelevant information.

British Values (SMSC)

- **Spiritual:** Reflecting on the world around us.
- **Social:** Developing communication

Key terms

Climate, Adaptions, Temperature, Rainfall (precipitation), Biome

Learning resources in this pack

- **Download:** Ticket to Antarctica Teacher Presentation_Antarctic Climate and Adaptions
- [Wilderness challenge quiz](#) – Discovering Antarctica
- **Download:** Ticket to Antarctica 5Ws Sheet
- **Download:** Images of Antarctica *and/or* [Being There – Discovering Antarctica](#)
- [Sound of Silence – Discovering Antarctica](#) for sound clips

What you will need

- A world map

Key questions

- What biome is Antarctica?
- What do you know about Antarctica?
- What is the temperature like in Antarctica?
- How do plants / animals adapt to the Antarctic climate?

Challenge and support

Ideas for challenge and support are included in the suggested teaching and learning activities.

AfL

Use the wilderness challenge quiz to gauge understanding of Antarctica.
Annotations of plant / animals to show application of knowledge and understanding.

Lesson Outline

Starter

1. Pupils use the 5Ws sheet to ask questions about the images placed around the room linking to the Antarctic.
2. Using the information from the class discussion, pupils identify on the map where they think they might be looking at in the lesson and why.

Main

3. Pupils use the Wilderness Challenge Quiz to see how much they already know about Antarctica.
 - *What were you confident about?*
 - *What would you like to find out more about?*
4. Using slides 4-7 from the teacher presentation, pupils identify what biome Antarctica is.
 - *Here are some examples of cold environment biomes. Which do you think best fits the Antarctic?*
5. Pupils discuss how plants and animals adapt to the Antarctic.
 - *What do you think plants and animals need to survive in the Antarctic biome?*
 - Note: Slide 9 has a reference list of Antarctic adaptations.

Plenary

6. Pupils apply their knowledge of plant/animal adaptations by annotating an image of a real Antarctic plant/animal.

As a challenge task, pupils could create their own plant/animal and explain how it has adapted to the Antarctic environment.

7. Using slide 10, pupils watch a video with polar scientist Professor Melody Clark, who studies adaptation and genetics at British Antarctic Survey.