



Lesson 2: Climate change in Antarctica

Aim and introduction

This lesson reflects on the adaptations of plants and animals from the previous lesson then looks at the impact climate change is having on the Antarctic as well as possible solutions to the impacts.

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This lesson should take between 45 minutes and 1 hour to complete.

Curriculum links

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

Learning goals

1. Understand why the climate is changing.
2. Explore what climate change looks like in Antarctica.
3. Identify how climate change in Antarctica causes impacts around the world.
4. Understand some potential solutions to the impacts of climate change.

Learning outcomes

- **Greater depth:**
Pupils make clear connections between the impacts of climate change and animal/plant adaptations. They can synthesise information to fully answer the questions being asked about climate change in the Antarctic. Pupils can fully justify their points of view using evidence to support their ideas.
- **Expected level:**
Pupils make connections between the impacts of climate change and animal/plant adaptations. They can find relevant information to answer the questions being asked about climate change in the Antarctic. Pupils can fully justify their points of view using some evidence to support their ideas.
- **Working towards:**
Pupils make some connections between the impacts of climate change and animal/plant adaptations. They can find some information to answer the questions being asked about climate change in the Antarctic. This might not be fully relevant. Pupils can make decisions but may need support in justifying them.

- **Support:**
Pupils make limited connections between the impacts of climate change and animal/plant adaptations. With support, they can find some information to answer the questions being asked about climate change in the Antarctic. Pupils may need support in making a decision.

British Values (SMSC)

- **Spiritual:** Reflecting on the world around us.
- **Moral:** Understanding how our actions impact others.

Key terms

Climate change, Impacts, Actions, Solutions

Learning resources in this pack

- **Download:** Ticket to Antarctica Teacher Presentation_Impacts of Climate Change
- [Discovering Antarctica Climate Change Page.](#)

What you will need

ICT equipment (either individual sets or enough for stations to be set up around the classroom).

Key questions

- What is climate change?
- What are the impacts of climate change in Antarctica?
- How can we help solve these impacts?
- Why is it important we know about some of the impacts of climate change in Antarctica?

Challenge and support

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

AfL

Synthesis of information as well as opportunities to question on justification of decisions.

Lesson Outline

Starter

1. Using slides 3-4, explain the basic connection between greenhouse gases and a warming planet – and how this is related to human activity.
2. Using slide 5, explain that the poles are changing faster than anywhere in the world, and why.
3. Using slide 6, hear from real climate scientists about why Antarctica is important to the rest of the world, and what they are doing to study it.

Main

4. Pupils explore the 'changing climate' section of the Discovering Antarctica to analyse the information to answer the questions from the presentation. These resources mainly talk about the impact of warming on Antarctica land-based glaciers, and the result of sea level rise.

Support pupils by questioning on what they are looking for.

Challenge pupils by asking them to make connections between the different aspects of climate change in Antarctica.

- *What is happening to Antarctica?*
 - *Why is it happening?*
 - *Challenge: what do you think could be the solutions to these impacts?*
5. Class discussion on key findings using what they have found out to support their ideas.
 - If the class has access to individual ICT, then they can complete this as a paired, individual task. If access to ICT is limited, then set the class up with several stations where they can explore the website.
 6. Meet a real penguin scientist, linking climate change in Antarctica to the future extinction of the Emperor penguin.
 - *Note for teachers: loss of sea ice habitat is different to glacier melting. Glacier melting and the melting of land-based ice will cause sea level rise. Sea ice loss has impacts for animals and ecosystems that have adapted to rely on the sea surface freezing.*

Plenary

7. Class discussion on the different approaches to managing climate change.
 - Using slide 9, talk through the different approaches.
 - Display the titles of the actions around the room - the class take a vote by standing next to the action they feel would work best and challenge by justifying why they think this.