



Lesson 3: Biodiversity under threat

Scheme of Work

Aim and introduction

... This lesson covers some of the main threats to biodiversity in Antarctica, led by student research and presentations. It then asks students to learn about scientific and conservation strategies for the Antarctic biome, and apply this knowledge to an exam style question.

Curriculum links

An overview of the distribution and characteristics of large scale natural global ecosystems. For two selected ecosystems, draw out the interdependence of climate, soil, water, plants, animals and humans; the processes and interactions that operate within them at different scales; and issues related to biodiversity and to their sustainable use and management.

Learning goals

1. To know some of the main threats to the Antarctic biome.
2. To understand potential ways to manage the threats to the biome.

Learning outcomes

- **Greater depth**
Pupils will be able to make clear connections to the threats that Antarctica faces. They should be able to creatively present their ideas. Pupils should be able to apply learnt and their own knowledge to an examination style question.
- **Expected level**
Pupils will be able to make connections to the threats that Antarctica faces. They should be able to present their ideas clearly. Pupils should be able to apply learnt knowledge and understanding to an examination style question.
- **Working towards**
Pupils will be able to make some connections to the threats that Antarctica faces. They should be able to present their ideas. Pupils should be able to apply some learnt knowledge and / or understanding to an examination style question.
- **Support**
Pupils will be able to make limited connections to the threats that Antarctica faces. With guidance, they should be able to apply some learnt knowledge to an examination style question.

Key questions

- What makes this environment unique?
- What are the threats to this species?
- What are the threats to the environment as a whole?
- How can we help protect this environment?

British Values (SMSC)

- **Moral:** Developing a strong ethical framework for decision-making. Understanding the role of law and justice in society. Exploring complex moral dilemmas.

Key terms

Biodiversity, Overfishing, Shipping, Pollution

Learning resources in this pack

- **Download:** Ticket to Antarctica Teacher Presentation Biodiversity Under Threat
- Threats information on the Discovering Antarctica website:
 - [Climate change](#)
 - [Overfishing](#)
 - [Tourism](#) or [responsible tourism](#)
 - [Shipping](#) NOTE: this is quite a wordy document – it might be worth guiding pupils to explore the text on ‘significance’ then analysing the diagrams and images.
 - [Pollution](#)

AfL

Examination style question to assess application of knowledge.

Lesson Outline

Starter

1. Project an image of penguins on the ice as the pupils enter the room. Get them to think about questions around the image. Pupils think, pair, share their responses to one or all the questions.

Main

2. Slides 3-4 support a short teacher presentation on the fragility of the environment particularly focusing on the biodiversity and the main threats to Antarctica:
 - climate change
 - overfishing
 - tourism
 - pollution
 - shipping
3. Pupils complete an activity where they research further into one threat to the biodiversity of Antarctica. Materials to support research by topic are on the Discovering Antarctica website:
 - [Climate change](#)
 - [Overfishing](#)
 - [Tourism](#) or [responsible tourism](#)
 - [Shipping](#)
 - [Pollution](#)
4. Using any format they wish (i.e. poster, poem, play, news report etc), pupils present this threat to the rest of the class so that they can summarise it in their notes.
 - a. Materials to support research by topic

Plenary

5. Teacher presentation on one of the key ways the Antarctic can be protected – conservation using the video from British Antarctic Survey / [NERC](#).

There is an optional second video about the decline of emperor penguin populations – how this is monitored and what is causing it.

Pupils then write an examination style question on the effectiveness of scientific conservation strategies. This can be completed for homework if there isn't enough time in the lesson.