

Teaching notes

This programme is a short documentary about Antarctica. Sophie, the presenter, tells us the Antarctic as a 'desert' and gives us some interesting facts about Antarctica. She also visits the headquarters of the British Antarctic Survey, where she interviews one of the scientists who work there.

Background information

The British Antarctic Survey is a research centre based in Cambridge. For over 60 years it has undertaken the majority of Britain's scientific research on and around the Antarctic continent. It now shares that continent with scientists from over 30 countries.

BAS employs over 400 staff, and supports three stations in the Antarctic, at Rothera, Halley and Signy, and two stations on South Georgia, at King Edward Point and Bird Island. The Antarctic operations and science programmes are executed and managed from Cambridge, and rely on a wide-ranging team of professional staff.

Before you watch

1a Warm up Ask the class to think of as many weather words as they can in two minutes and write them on the board. Add any from Exercise 1a that the class hasn't thought of and explain their meaning. Explain that *extreme* can describe very high or very low temperatures. Ask students to give examples of animals that live in hot, cold and wet climates. Ask students to do Exercise 1a.

1b Ask the class to answer the question in Exercise 1b. They might suggest that both places have extremes of temperature and both places are windy. They may also say that both places are cold (deserts get cold at night) and dry. Avoid confirming their answers at the moment, just write down their ideas on the board.

While you watch

2a Students watch the first part of the video (0:39:02-0:41:45), to check their answers to 1b.

2b Ask students to predict words which complete the gaps in 2b. Play the second part of the video (0:39:15-0:39:56) again, pausing for students to complete the gaps.

2c Play the third part of the video (0:39:57-0:41:45), without sound and ask students to guess the answers to Exercise 2c. Then play the clip with sound. Write *The headquarters of the British Antarctic Survey* on the board.

3a Ask students to look at the pictures and read the descriptions. Ask them to discuss questions 1-3 in Exercise 3a.

3b Play the third part of the video again and ask students to check their answers to Exercise 3a.

4 Ask students to read the two parts of the sentences in Exercise 4. Explain the meaning of *carbon dioxide*, *greenhouse gases* and *atmosphere* if necessary. Play the third part of the video again, pausing after each sentence so that students can match the sentence halves.

5 Play the third part of the video a final time and ask students to do Exercise 5. Elicit the meaning of *melt* after students have watched the video.

After you watch

6a Revise what students know about global warming before asking them to do Exercise 6a. You could do this by writing the three questions in the exercise on the board and asking students to discuss them in pairs. When you're confident they will be able to complete some of the exercise, ask students to do Exercise 6a.

Lo tech Ask students to make notes about the information which they got from the video and to plan a short presentation using their notes. Select a few students to give a presentation to the class using their notes. Ask students to write up their presentation in a paragraph for homework.

Hi tech If you have access to a video camera, film the presentations. If students have access to a camera phone or a digital camera they can make their own short video to show in groups in the next lesson.

6a Ask students to work in pairs interviewing each other.

Key

Before you watch

- 1a** Picture a (Sahara desert): 3, 5, 6, 10
Picture b (Antarctica): 2, 3, 4, 5, 7, 8, 9

- 1b** Students' own answers.

While you watch

- 2a** Both places are deserts because both get very little rain.

- 2b** 1 desert 2 coldest 3 99 4 year
5 sand 6 rain 7 penguins 8 ice

- 2c** 1 Sophie's at the headquarters of the British Antarctic Survey, in Cambridge.
2 Tamsin is a scientist who works at the British Antarctic Survey.

- 3a** 1 ice 2 ice

3 It can tell them how many greenhouse gases there used to be in the atmosphere compared to the amount today.

- 4** 1 d 2 a 3 c 4 b

- 5** 1 causes 2 melt

After you watch

- 6a** 2 atmosphere 3 create 4 atmosphere
5 melts 6 rise 7 get 9 animals

- 6b** Students' own answers.

Video script

1 Headquarters of the British Antarctic Survey 0:39:00-0:39:13

Sophie Here's a quick question. What's the largest desert in the world? The Sahara Desert? No. The answer's surprising. It's at the South Pole. And it's Antarctica.

2 Antarctic footage 0:39:14-0:39:56

Antarctica is a place of extremes. It's the coldest, driest and windiest place on Earth. But although ice covers over ninety nine percent of the land, there's only one to two centimetres of snowfall every month. And that makes it a desert. Because you don't need sand for a desert. A desert gets very little rain. In spite of the extreme conditions, some land animals have learned to survive, such as the Antarctic penguins. You won't find many humans though. But international scientists come here to study the wildlife and the ice.

3 The British Antarctic Survey 0:39:57-0:41:45

Brrrr... I've never been so cold in all my life...OK, OK. I'm not really in the Antarctic. I'm actually in Cambridge inside the headquarters of the British Antarctic Survey. This is an environmental research centre which has three bases in Antarctica. Tamzin is one of the scientists working here.

Tamzin To find out what happened in the past you can drill down through the ice. I call the drill a time machine because you are collecting snow that fell millions of years ago. And when that snow falls, it traps bubbles of gas. So, you can see in this thousands-of-years-old snow, like, tiny bubbles. And those bubbles are capturing the atmosphere: the air as it was when the snow fell. So we can find out things like how much carbon dioxide and other greenhouse gases there used to be in the atmosphere and compare that to how much we've got now. Some people think life in Antarctica could be a bit boring because you can't, you know... Go out to the cinema, or anything like that. But you can go skiing, you can go climbing, and... I like snowboarding, personally. That's my favourite. There's really plenty to do.

I'm now in the *cold room* – and it really is cold in here. The ice in these tubes was taken from Antarctica. And some of it is thousands of years old. This ice can show scientists how the climate has changed. If global warming causes this ice to melt, it will affect all of our lives. So let's hope Antarctica stays as cold and as beautiful forever.