

Illustrated History of Antarctica by Marcia Stenson

(Random House)

Teaching Notes by Raymond Huber

Before reading the book

Assess student's existing knowledge and impressions (before reading the book):

* Look at an outline map of the Antarctic with any place names blanked out. How many places/ seas can students name?

Add labels to your map as you progress through the book.

* Brainstorm names of any famous Antarctic explorers, facts and events known to students.

* What images spring to mind with the word Antarctica? Get students to sketch an impression. Compare with the book's images.

* Cover Images: Name them. (Ed Hilary on tractor, iceberg, emperor penguins, Scott Base, skis). Why do you think they were they chosen?

Introduction

* Antarctica holds world records for wind speed, cold temperatures (p. 17), dryness and being the highest continent (p.13) . Search this book to find out what these records are.

* The prefix 'ant-' means opposite. Why is the Antarctic so named? (see also p.32). List 5 other 'ant-' words.

What are 2 main differences between the Antarctic and the Arctic?

* Why is the Antarctic an important continent for New Zealand?

- * What two ways does the planet Earth depend on the Antarctic for survival?
- * The Antarctic is the richest source of extraterrestrial matter. This has inspired many science fiction stories. Write a single page short story about scientists finding a meteor or alien life at the pole.
- * Define these positions (see also pages 8, 14, 50) : South Geographic Pole, South Magnetic Pole, and Pole of Inaccessibility. Draw the 3 Poles on a sketch map (p.15).
- * What is the Point of Safe Return? Write a poem with this title.

Where evidence comes from

- * Why is there no archaeological evidence from this region?
- * What are the 3 main sources of information about Antarctica's past?
- * Why are diaries not always a reliable source of facts? But what do diaries reveal (about people) that artefacts don't? What kinds of evidence do scientists prefer? Why?
- * What did the fossil *Glossopteris* prove?

Antarctica: the continent

- * Create a time-line to record stages the break up of the supercontinent Gondwanaland. Make the start date at 183 million years ago (write as 'mya'). Write some significant events on your time-line.
- * Where is the world's biggest ice block?
- * Why does the South Geographic Pole marker have to be shifted every year?
- * Ice Numbers:

1. The thickest ice is _____ metres.
2. The Transantarctic Mountains are _____ km long.
3. Beardmore glacier is _____ km long.

* Latitude or Longitude Quiz (p.14): The lines running *across* the globe are lines of _____. The equator has the number ____° latitude. The lines reach 90° at the North and South poles. The lines running *up* and *down* are lines of _____. The 0° longitude line runs through London, England. The longitude lines go up to ____°. The 180° line runs just past East Cape.

On a map of the world, draw some of the main lines of latitude and longitude.

* How would the blizzards, katabatic winds, cold temperatures, and dryness each affect human beings trying to survive in Antarctica? (p. 17, 26)

* How are lichens adapted to survive?

The Southern Ocean and subantarctic islands

* Research the arrival of 'growlers' on the NZ coast in November 2006 . References: local newspapers, Icebergs by Dave Cull (Longacre Press).

* Draw a map showing the location of the Snares, Bounty, Antipodes, Auckland, Campbell and Macquarie islands.

What makes these islands (and surrounding ocean) so hazardous for ships?

* Write a story titled 'The Treasure of the General Grant'.

* Create an illustrated diagram of the Antarctic Convergence food chain (p.22). Why are krill so important in oceans? Draw a krill.

* Outline the life cycle of one of the many species of penguin (p.23, 24).

Human footprints in Antarctica

* List the equipment and supplies used by early explorers to survive. Are any of these things still used today?

* Look at the photo of food rations on page 26. Try to name all the foods.

* These days all human waste (including toilet waste) must be stored and removed from Antarctica. Why is rubbish and human waste a problem in Antarctica?

* How have humans affected penguins over the years?

The first humans in the Antarctic

* Look at the map on pages 32,33. What are the differences compared the world map today? Create a fantasy map of the world by distorting the shape of countries. Illustrate with ships and sea monsters in the old style.

* Research the life of one of these early explorers: Francis Drake, Antonio de la Roche, or Edmund Halley.

* Draw a map and label some of the places in the Antarctic circle visited by Captain Cook (add dates where possible).

* Chose one of these explorers and write a description of their Antarctic voyage: Dumont d'urville, Charles Wilkes, James Clark Ross, Carsten Borchgrevink.

Whalers and sealers

- * What European products were made from seals, penguins and whales? Are any still made today?
- * Look at the photos of dead animals on pages 40- 42. Write a personal response to these images.
- * 'Beyond 40 degrees South there is no law; beyond 50 degrees South there is no God.' What did these words mean in the 1800s? Make up a suitable sailors' tune to fit the words.
- * Design a poster that shows the main events in the history of whale hunting in the area. Research the latest news about commercial whaling by Japan in this area. Should hunting whales be banned?

The heroic age of Antarctic explorers

- * Describe the personality of Robert Falcon Scott.
- * What were some the lessons that Scott's group learned about survival in the Antarctic conditions?
- * Imagine you were one of the group and write a diary about the trip to the interior (p.46). Describe your feelings.

Shackleton has another go

- * What did Shackleton do differently this time?
- * What did he mean by 'you would rather have a live donkey than a dead lion'? (p.51)
- * Why are David, Mawson and Mackay famous?

Scott's second expedition

- * What had Scott learned from his first expedition?

* 'Was Scott a hero or a bungler'? Evaluate his achievements in exploring the Antarctic. Why is his team's death often related in such vivid detail by historians?

* Why do people usually admire adventurers such as Scott? What are they doing that few others will attempt? Is it important for humans to keep going to unexplored regions (on Earth or in space)?

* What are the negative effects of human exploration/ colonisation? Write a speech that discusses the pros and cons of exploring new frontiers. Use famous explorers as examples.

Roald Amundsen

* Sketch a portrait of Amundsen, based on the photo on page 58, using a soft pencil (eg. 6B) to achieve tones.

* Fill in this table to show the differences between Scott's and Amundsen's trip to the Pole:

	Scott Expedition	Amundsen Expedition
Start point		
Team size		
Team experience		
Preparation		
Transport		
Animals		

* Why did each man have to kill his own dogs?

Douglas Mawson's incredible journey

- * Why was radio called 'wireless telegraph' in those days? p.62
- * What is the effect of a Vitamin A overdose? p.65
- * What other physical changes did Mawson experience?
- * Plot a distance of 160 km from your home town on a map of NZ. Imagine walking this distance alone, with little food and freezing weather.

Shackleton's epic journey

- * Plot the journey by filling in events for these key dates:

January 15, 1915: _____

October 27, 1915: _____

November 21, 1915: _____

April 9 1916: _____

April 24:1916: _____

May 20, 1916: _____

- * What makes Shackleton's survival story so unique in history?
- * Watch one of the many movie dramatisations of Shackleton's incredible ocean voyage. Eg. Shackleton (2002), Endurance (1999).

Aeroplanes, adventurers & international rivalry

- * What did Richard Byrd discover about the Antarctic continent?
 - * Who was the first woman on the Antarctic?
 - * Why didn't Germany claim any land there?
 - * Why did various countries want to claim ownership of the area?
- (See also page 87)

The first International Geophysical Year

- * What kind of science was studied in Antarctica in 1957-58?
- * Why was it a good place for study of the sun and outer space? (Think about light and other pollution). See also p.96.
- * How did science help 'save' the Antarctic? (See also p.87)
- * What skills and abilities did Edmund Hilary contribute to the overland expedition to the Pole?

International involvement & treaties

- * Discuss each article of The Antarctic Treaty (p.88). Do you agree with them? Why?
- * Describe the Madrid Protocol?
- * There is some illegal fishing in Antarctic waters. Longline fishing is threatening some kinds of fish. (A longline can have thousands of hooks and be kilometres in length). Name some of the threatened fish species.
- * What role does Greenpeace play in Antarctic waters? Write a protest letter complaining about fishing or whaling in the area.

Humans in Antarctica today

- * Describe one important kind of scientific research carried out in Antarctica. Research the training required to become a scientist.
- * List the technology that has made life easier in the Antarctic.
- * Research the Erebus plane crash of 1979. Why did this tragedy have such an impact on New Zealanders? (See also p. 6).
Read Bill Manhire's poem about the crash. It can be found on the Te Ara website:

<http://www.teara.govt.nz/EarthSeaAndSky/SeaAndAirTransport/AirCrashes/1/ENZ-Resources/Standard/2/en#breadcrumbtop>

* Debate topic: 'Tourism is good for the Antarctic continent'.

Epilogue

* What does the future hold for Antarctica?

What can New Zealand do to protect it?

* Create a painting based on the final photo (pages 104,105). Use a limited range of colours (eg. blue, purple, black), and mix white paint with the colours to achieve carefully graded tones for the ice and sky.

Further Reading:

* Antarctica by Margaret Andrew

* Southern Quest (Footsteps of Scott Expedition) by Stephen Broni:
School Journal No 1 1990.