



**INTERNATIONAL  
ANTARCTIC  
CENTRE**

# Antarctic Adventures

## UNIT 3: SAVE IT

### Teacher Guide

# Antarctic Adventures: Save it!

Nau mai ki tēnei akoranga and learn about how people can work together to prevent the negative impacts of climate change! Be familiarised with environmental initiatives such as reducing our carbon footprint or rāhui which can be put in place to protect animals and the environment. Learn how traditional Māori conservation efforts can be implemented into everyday lives to benefit the Earth. See how people are making change in Antarctica through scientific research, as well as through support systems such as the New Zealand Defence Force. Gain valuable mātauranga (knowledge) surrounding Māori narratives and the relation of western knowledge to Te Ao Māori through cultural concepts. Explore the protection of wildlife, especially tohorā (whales), and how positive human actions need to be implemented to conserve their species. Understand that marine life face threats due to our changing climate, and that our small changes can be beneficial!

## Curriculum Links

*Aligned to Level 4 of the New Zealand Curriculum*

### Science

- **Nature of Science - Understanding about Science**  
Identify ways in which scientists work together and provide evidence to support their ideas.
- **Nature of Science - Participating and Contributing**  
Explore various aspects of an issue and make decisions about possible actions.
- **Planet Earth and Beyond - Earth Systems**  
Develop an understanding that water, air, rocks and soil, and life forms make up our planet and recognise that these are also Earth's resources.
- **Living World - Ecology**  
Explain how living things are suited to their particular habitat and how they respond to environmental changes, both natural and human-induced.

### Math

- **Number and Algebra - Number strategies and knowledge**  
Use a range of multiplicative strategies when operating on whole numbers.
- **Geometry and Measurement- Measurement**  
Convert between metric units, using whole numbers and commonly used decimals.

### Literacy

- **Speaking, Writing and Presenting - Ideas**  
Select, develop, and communicate ideas on a range of topics.

## Mātauranga Māori

- Integration of whakataukī into Māori and Western content, expanding both te reo Māori vocabulary and worldview.
- Basic implementation of te reo Māori vocabulary and sentence structures.
- Indigenous efforts to protect native species, such as manu (birds), tohorā (whales) and other wildlife within the Pacific.
- Expanding on the cultural connection between Māori and native animals, such as tohorā (whales).
- The impact of climate change on Aotearoa, and Māori indigenous conservation strategies such as rāhui that would have value by being implemented in mainstream protection efforts.
- Traditional Māori waste management through the use of natural materials.
- The importance of collaboration within Te Ao Māori.
- Brief introduction to pūrākau through Māori narratives, including creation stories and atua Māori.
- Highlighting the importance of toi Māori to storytelling through the form of whakairo.
- Introduction to Māori cultural concepts such as rangimārie, mahi tahi, and tiakitanga, giving insight into Te Ao Māori relating to both people and the environment.
- Learning how Māori contribute to protecting Antarctica, through both science and the defence forces.

## Key Competencies

- Thinking
- Using language, symbols and texts
- Participating and Contributing

## 21st Century Skills

- Creativity
- Collaboration
- Critical Thinking and Problem solving

## Useful Links!

- Science Learning Hub - Save It! Collection
- House of Science Resource Library
- Science Alive Mātauranga Facebook Group
- Science Alive Mātauranga FAQs
- Education Perfect Help Centre

# Antarctic Adventures: Save It

## Discovery

### Students will be able to...

- ▶ Identify ways to reduce carbon emissions
- ▶ Describe the Te Ao Māori cultural concepts that contribute to Antarctica
- ▶ Describe the importance of tohorā (whales) in Te Ao Māori

## Connection

### Students will be able to...

- ▶ Compare and contrast waste management in Antarctica and Aotearoa
- ▶ Explain how different tāngata (people) collaborate to meet the same goal
- ▶ Explain the impacts of a changing climate on marine life in Antarctica

## Application

### Students will be able to...

- ▶ Analyse efforts to revitalise marine life in Antarctica through the concept of rāhui
- ▶ Reflect on how we can support people in Antarctica creating awareness about climate change
- ▶ Analyse lifestyle changes that support current marine research in Antarctica

## Description

## Learning Objectives

## Key Concepts & Skills

## Follow Up Activities

### Sustainable Antarctica? Kaupapa Taiao

How does Antarctica help the fight against climate change, and is there still room for improvement?

Explore how Antarctica is changing to more sustainable ways by reducing greenhouse gas emissions, moving towards zero waste, and using a concept similar to rāhui to protect Antarctic marine animals from extinction.

- Identify ways to reduce carbon emissions.
- Compare and contrast waste management in Antarctica and Aotearoa.
- Analyse efforts to revitalise marine life in Antarctica through the concept of rāhui.

- Carbon emissions are a driving force for climate change.
- The impact of fossil fuels on the environment and how this affects life.
- Waste management methods.
- The implementation of rāhui to help protect our Earth and marine life.
- Looking towards traditional Māori conservation strategies.
- Steps humans can take to decrease waste.

- Use the carbon footprint calculator below to work out how much carbon you create through your current lifestyle. Create a list of everyday changes you could make to reduce your carbon footprint.
- Design a Waste Management Strategy for your school. Make a flyer to share the details of your Waste Management Strategy with students and teachers.
- Research what animals or plants are endangered in your area. Based upon your findings, design a sign to communicate the protection of one these species.

### People making change - Te Hiranga o Te Ira Tangata

He aha te mea nui o Te Ao? He tangata, he tangata, he tangata. Explore how this whakataukī applies to Antarctica. Learn that scientists play a valuable role in gaining knowledge about our environment in order to protect it. Note that there are support systems in place, and without these people, research would not be possible. Understand how this collaboration relates to Te Ao Māori through pūrākau and narratives.

- Describe the Te Ao Māori cultural concepts that contribute to Antarctica.
- Explain how different tāngata (people) collaborate to meet the same goal.
- Reflect on how we can support people in Antarctica creating awareness about climate change.

- Māori narratives reinforce the importance of collaboration.
- For Māori, the key to success is teamwork, and Antarctic researchers demonstrate this concept.
- The importance of the Defence Force and Kahui Māori.
- The transmission of knowledge and storytelling through toi Māori (art).
- The need for everyone to work together to achieve a shared goal.
- The impact of Antarctic research and why we need scientists to pass on their knowledge.

- Create a superhero scientist! Make an informative poster about a scientist involved in Climate Change research, and turn them into a superhero. Include facts about their work, as well as how they inspire you!
- Imagine you are an everyday helper going to Antarctica. Create your own comic strip outlining a day in the life of a helper! Include how you would support researchers, and what your work role would be.
- Create a diagram about your life and who helps you succeed. Who do you collaborate with everyday? Write short blurbs to go with your diagram about how each person is connected and important to your success.

### Whales and their Tales!

How do human actions and a changing environment affect our wildlife? Why are whales an important part of the ecosystem?

Gain understanding about the importance of tohorā to Māori, and why these species need to be protected. Look into the threats that tohorā face, and how humans can combat this. It's not too late!

- Describe the importance of tohorā (whales) in Te Ao Māori.
- Explain the impacts of a changing climate on marine life in Antarctica.
- Analyse lifestyle changes that support current marine research in Antarctica.

- Tohorā are found migrating between Aotearoa and Antarctica.
- Māori have cultural connections with tohorā.
- The feeding ground of tohorā based around the Antarctic.
- Pollution, whale watching, and krill fishing impacts tohorā.
- The climate changing and the consequences on whale species.

- Do some research on your favourite species of tohorā. Why do you like this species so much? What does it eat? Where can we see this species? Is it endangered? Present your findings in an infographic.
- If you could design a device that will help track or survey tohorā, what would it look like? What materials would you use and why? What would it measure/monitor?
- There are many stories about tohorā in our country. Pick the format of your choice to illustrate one of these stories. For example, you can record a short movie about Paikea's legend or draw a comic strip about a local story.