

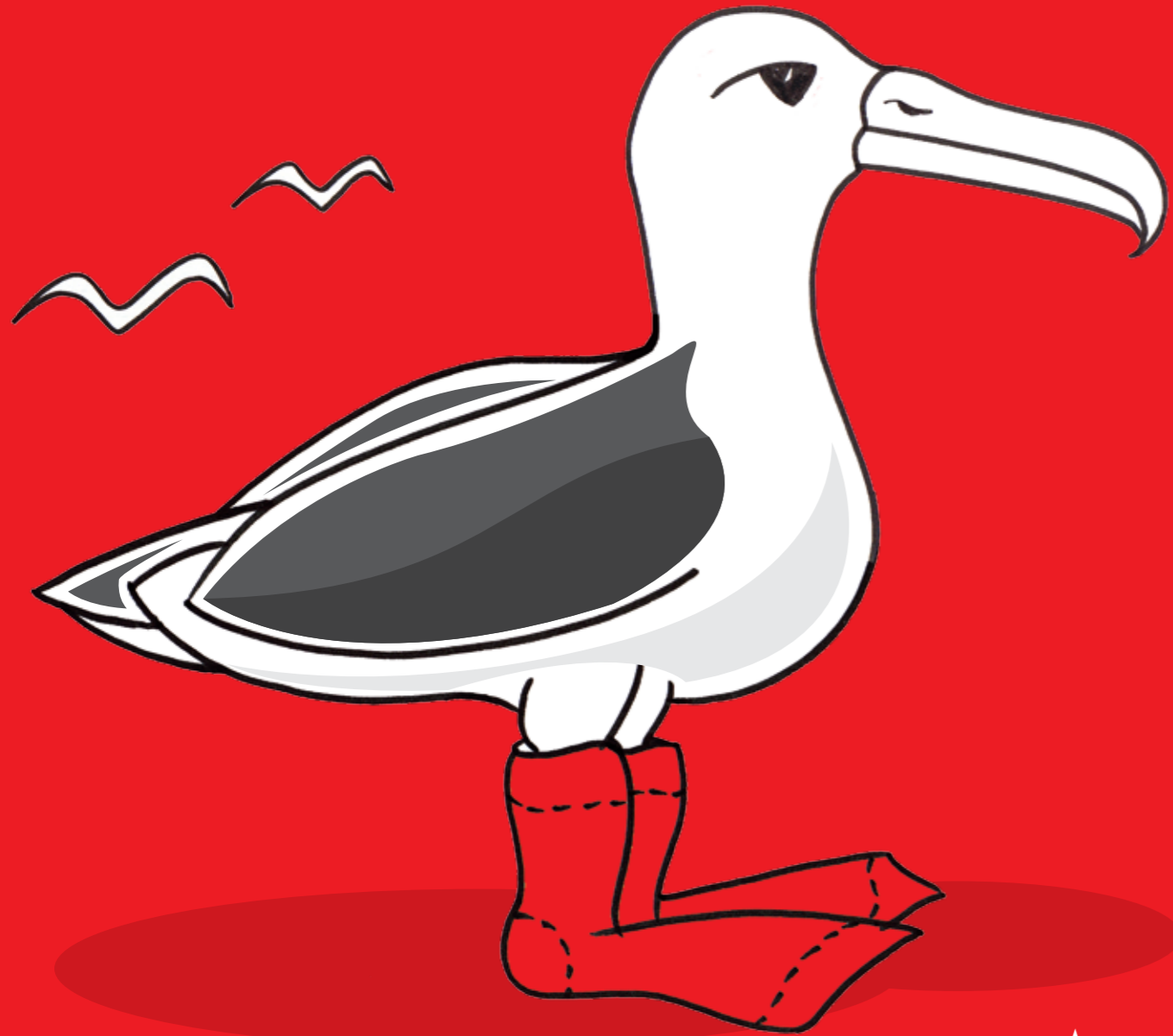
YEARS 4-8

# CARE FOR OUR COAST ANTARCTICA

TEACHERS' RESOURCE

[www.sirpeterblaketrust.org](http://www.sirpeterblaketrust.org)

Celebrate Care for our Coast with a  
**RED SOCKS DAY**  
and wear the socks of a leader.



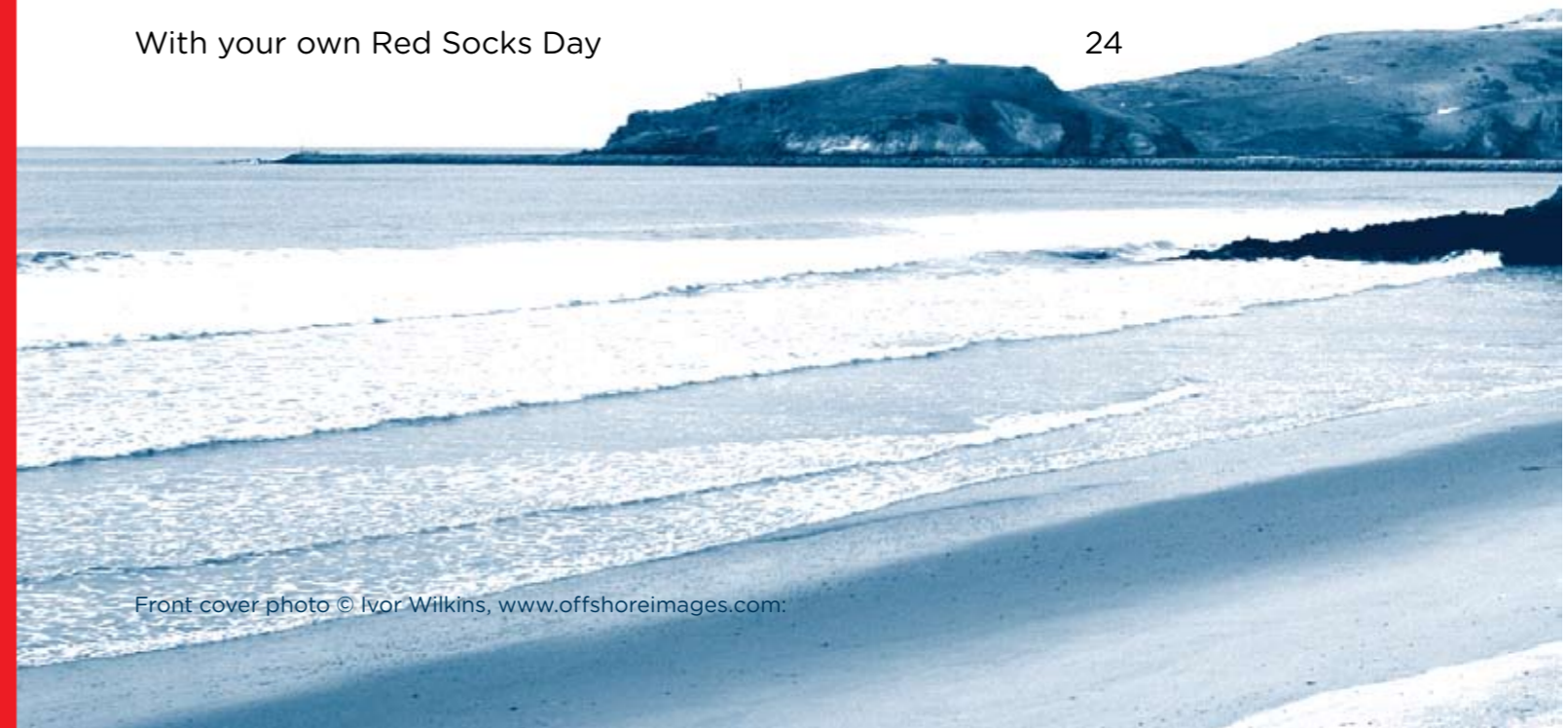
  
**THE  
SIR PETER BLAKE  
TRUST**  
Leadership in Action

For more information, see page 24.

## CONTENTS

Care for our Coast - Antarctica Teachers' Resource

	PAGE
Introduction	2
<b>STEP 1 Learn:</b>	
Achievement Objectives	3
<b>A: GETTING TO KNOW THE ANTARCTIC ENVIRONMENT</b>	4
<b>B: IMPACTS ON THE ANTARCTIC ENVIRONMENT</b>	6
<b>C: CLIMATE CHANGE</b>	8
<b>D: SUSTAINABLE LIVING</b>	9
<b>E: THE ANTARCTIC TREATY</b>	10
<b>F: ANTARCTICA'S PROTECTION</b>	11
<b>G: EARLY EXPLORERS - SIR ERNEST SHACKLETON</b>	12
<b>H: SIR EDMUND HILLARY AND ANTARCTICA</b>	13
<b>I: SIR PETER BLAKE AND ANTARCTICA</b>	14
<b>J: ANTARCTICA - ACTION STATIONS</b>	15
Templates	17
Resources	20
<b>STEP 2 Experience:</b>	
Leadership in Action	21
Clean up our Coast Challenge	22
<b>STEP 3 Celebrate:</b>	
With your own Red Socks Day	24



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## INTRODUCTION

The Sir Peter Blake Trust was established to showcase Sir Peter's visionary leadership and to inspire these qualities in all New Zealanders. The Care for our Coast – Antarctica programme encourages environmental leadership in our young people by building their awareness of the Antarctic environment and encouraging them to take action to safeguard its future.

### OBJECTIVES OF THE CARE FOR OUR COAST ANTARCTICA PROGRAMME

- \* To inspire environmental leadership in our young people, keeping the spirit of Sir Peter Blake alive;
- \* To promote changes in behaviour through education and action, to ensure a more sustainable world; and
- \* To encourage schools and communities to show social responsibility for their local environment.

Sir Peter's particular focus for the environment was on water. Having sailed around the world five times and clocking up over half a million nautical miles, he was acutely aware of the deterioration of our oceans and the important role water plays in our quality of life.

*"We want to restart people caring for the environment as it must be cared for, and we want to do this through adventure, through participation, through education and through enjoyment."* – Sir Peter Blake

This resource is an education tool that provides a start in educating toward a more sustainable future and the activity ideas contained within have potential for a greater depth of learning.

Students can enjoy researching the various topics while there is also scope for co-learning between students and teachers.

### Curriculum links

This resource is designed to be used for Years 4 to 8 within the New Zealand curriculum. Activities can easily be adapted to suit students working above or below these years. The duration of the resource is approximately 4-8 weeks, but each topic can be taught over 3-4 lessons.

## ORGANISATION OF THE RESOURCE

### STEP 1:

**Learn about the Antarctic environment, its history and what we need to do to protect it.**

### STEP 2:

**Experience the learning by cleaning up the coast, or taking action in the local community.**

### STEP 3:

**Celebrate the unit with a Red Socks Day, wearing the socks of a leader.**

REFER TO THE TEACHERS' NOTES FOR EACH LEARNING ACTIVITY.

## Acknowledgements

Thank you to our leading partners (Westpac, Lion Foundation and Fuji Xerox) and supporters for enabling the Trust to implement its programmes.

Thank you to Maria Gill who wrote the teaching resource and to the wonderful team of teachers who advised and reviewed it.

Please contact our Programme Manager at the Sir Peter Blake Trust for further information on the teaching resource, the clean up activity, and organising a red socks day.

**Email:** [info@sirpeterblaketrust.org](mailto:info@sirpeterblaketrust.org)

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# LEARN: CARE FOR OUR COAST ANTARCTICA

## ACHIEVEMENT OBJECTIVES

### SCIENCES:

#### Living World Ecology

- Living World - Explain how living things are suited to their particular habitat and how they respond to environmental changes, both natural and human induced.

#### LEVELS 3-4

### SCIENCES:

#### Nature of Science

- Explore and act on issues and questions that link their science learning to daily lives.
- Use their growing science knowledge when considering issues of concern to them.
- Explore various aspects of an issue and make decisions about possible actions.

#### LEVELS 2-4

### SOCIAL SCIENCES

- Understand how people pass on and sustain culture and heritage for different reasons and that this has consequences for people.
- Understand how exploration and innovation create opportunities and challenges for people, places and environments.

#### LEVELS 3-4

### EDUCATION FOR SUSTAINABILITY

The following key concepts of education for sustainability underpin the learning outcomes for this resource.

- To change students' behaviour, attitudes and values, towards the environment.
- Students practice environmental project-based learning involving local projects that are meaningful and make real contributions to their communities.
- Students aim to improve the environment.

### KEY COMPETENCIES

Students will utilise the key competency tools in a range of activities:

- \* Managing self
- \* Relating to others
- \* Participating and contributing
- \* Thinking skills
- \* Using language, symbols and texts
- \* Leadership skills

### VALUES

By taking part in the Antarctica resource, students will be encouraged to value:

- **Excellence**, by aiming high and by persevering in the face of difficulties
- **Inquiry and curiosity**, by thinking critically, creatively and reflectively.
- **Community and participation**, for the common good.
- **Ecological Sustainability**, which includes caring for the environment.
- **Respect**, for themselves, others and human rights.

# GETTING TO KNOW THE ANTARCTIC ENVIRONMENT

## LEARNING OUTCOMES

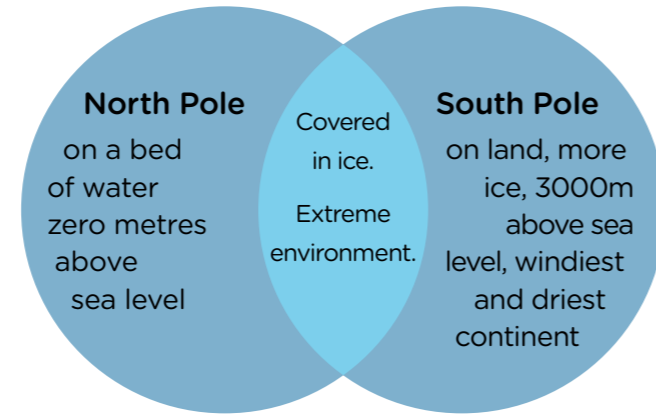
### Students will be able to:

- Recall prior knowledge about Antarctica
- Use mapping skills to locate landmarks
- Describe the harsh weather conditions of Antarctica
- Identify differences between the North Pole and the South Pole

### MATERIALS

- Happy Feet DVD • Chart paper
- Coloured markers • Template One
- Atlas • LEARNZ site internet access
- Learning logs

- \* Students then compare the South Pole with the North Pole in a Venn diagram.



- \* Fast finishers go to: [www.discoveringantarctica.org.uk/multimedia/flash/11\\_spotdiff.html](http://www.discoveringantarctica.org.uk/multimedia/flash/11_spotdiff.html)

- \* Students compare Antarctica with where they live, using a features chart.

FEATURES CHART		
Features	Where I live	Antarctica
Land area	270,000km <sup>2</sup>	14,000,000 km <sup>2</sup>
Average Temp.	20°C	-49.4°C
Average rainfall	107 cm	5.0 - 10.2cm
Highest point	3,784m	5,140m
Lowest point	0m	0m
Typical terrain	Earth	Rocks, snow, ice
Population size	4 million	4,000 scientists
Common life forms	Marine & land animals	Seals, whales, penguins, moss
How long is a day in winter?	10 hours sunlight N. Island	24 hours night-time

- \* Students reflect in their Learning Log what the biggest difference is between Antarctica and the place they live.
- \* Utilise the LEARNZ 'Science on Ice' material - preparation, audio-conferences, videos and diary entries - students can then answer the relevant LEARNZ questions. Go to: [www.learnz.org.nz/index.php](http://www.learnz.org.nz/index.php) registration is free.

## LEARNING ACTIVITIES

To start the learning, introduce Antarctica by watching the first 10 minutes of Happy Feet - DVD.

- \* Students then brain storm everything they know about Antarctica.
- \* Students share what they already know by using the Alpha Block strategy (see page 5 for template).
  1. Arrange students into small groups of 3-4 and assign each group to a chart (charts have been placed around room). For example, Group 1 would start with the chart labelled ABC, Group 2 with DEF, Group 3 GHI etc.
  2. Give each group a different coloured marker.
  3. Give students one minute to list as many terms, ideas, words etc. that relate to Antarctica starting with each letter in the block, recording them on the chart as they go.
  4. Students then rotate to the next chart, keeping the same marker. Students read over next chart for 1-2 minutes then have 1-2 minutes to add new information.
  5. Once students have visited all the charts they take turns to read aloud the chart in front of them.
  6. Paste the charts around the room.

## Alpha Block Chart

ABC	DEF	GHI	JKL
MNO	PQR	STU	VWXYZ

PHOTOCOPY AND ENLARGE ONTO A3 PAPER

- \* Get to know the Antarctic territory by going on a Map Quest, using Template One (page 17).
- \* Geologists (Scientists who study rock formations) have found rocks that are over 2,500 million years old on Antarctica. They believe that Antarctica was once part of Gondwanaland; a supercontinent that included Africa, South America, India, Australia, and New Zealand. It took millions of years for the continents (really large plates) to drift apart. In pairs, students cut out jigsaw templates and simulate the movement of Gondwanaland to how it is today. For a template: <http://terra.rice.edu/plateboundary/plate.11.17.pdf>
- \* Students can also watch 'Continental Drift' on YouTube.
- \* Believe it or not: Antarctica is the highest and driest place in the world. It is also the coldest place on Earth - colder than a freezer. In pairs, students research

five interesting facts about Antarctica's weather and present them as 'Believe it or not' statements to share with the class.

Use: [www.antarcticconnection.com/antarctic/weather/index.shtml](http://www.antarcticconnection.com/antarctic/weather/index.shtml) or [www.discoveringantarctica.org.uk/3a\\_climate.php](http://www.discoveringantarctica.org.uk/3a_climate.php)

- \* Students summarise what they have learnt, to share their knowledge with the rest of the class.

## CURRICULUM LINKS

Science: Complete mini challenges from: [www.tki.org.nz/r/wick\\_ed/topics/antarctica/mini1.php](http://www.tki.org.nz/r/wick_ed/topics/antarctica/mini1.php) - comparing sizes, mapping, how cold is cold, wrap up, Te Reo Maori, icebergs.

## SUCCESS CRITERIA

Students will know where Antarctica is and be able to identify some of the landmarks there.  
Students will understand how harsh the environment is and can make comparisons with their own environment.



Sir Peter Blake visiting Antarctica in 2001

# IMPACTS ON THE ANTARCTIC ENVIRONMENT



## LEARNING OUTCOMES

Students will be able to:

- Use the Inquiry method to answer their own questions about human impacts on Antarctica
- Name an animal food chain for a group of Antarctic species

## MATERIALS

- Inquiry chart (Template Two) or project books
- Internet access • Books • Happy Feet DVD
- March of the Penguins DVD
- Deepfreeze experiment materials
- Question webs

## LEARNING ACTIVITIES

- \* Introduce lesson by watching more of 'Happy Feet'. Ask the students what the two underlying themes in this story are: accepting differences and stopping overfishing in Antarctic waters. Ask the students if they saw any other human impacts in the film: neglected machinery left behind and plastic harming wildlife.
- \* Tell the class that humans have left their imprint on Antarctica. Using the Inquiry method - Template Two (page 17) discuss the essential question, "What impacts have humans had on Antarctica?" Students write down their own hypothesis and three questions to focus their research on (more able students can do five). Using the internet, books and printed articles students record the answers to their questions and where they sourced the information from. Students then summarise whether their hypothesis was correct and why.
- \* For information on Human Impacts, go to: [www.antarctica.org.nz/06-human\\_impact/index.html](http://www.antarctica.org.nz/06-human_impact/index.html) and <http://coolantarctica.com/> (search Human Impacts in the google search engine on this website - bottom of the page)
- \* Students present their findings in a visual (poster/pamphlet/diorama/powerpoint) or audio (speech/interview situation) presentation to the class.
- \* Students regularly note in their learning logs about the progress of their project and if they are on target to finish in time. Students write down any other questions their project is raising as they work.

## CURRICULUM LINKS

**Language:** Watch the DVD 'March of the Penguins'. Students write a Problem/Solution chart about the human impact on penguins in Antarctica.

For a template go to:

[www.eduplace.com/graphicorganizer/pdf/probsol.pdf](http://www.eduplace.com/graphicorganizer/pdf/probsol.pdf)

If students finish early, they can play the egg game:

[http://magma.nationalgeographic.com/ngexplorer/0511/games/game\\_intro.html](http://magma.nationalgeographic.com/ngexplorer/0511/games/game_intro.html)

**Science:** Deepfreeze Experiment : find out why ice cubes shrink: [www.csiro.au/csiro/channel/pchgh.html](http://www.csiro.au/csiro/channel/pchgh.html)

Collect science data: [www.discoveringantarctica.org.uk/12a\\_collect\\_data.php](http://www.discoveringantarctica.org.uk/12a_collect_data.php)

**Ice Experiment:** students predict whether an ice cube will sink, or float when put into water, also the proportion that will be below water surface. Students put a cube of ice into a glass/plastic jar of water. Advise students that four-fifths of an iceberg lies underwater. Students research the different types of ice in Antarctica: ice sheets, ice shelves, icebergs, sea ice, and glaciers - go to:

<http://library.thinkquest.org/28779/ice.html>

Then complete the quiz on:

[http://news.bbc.co.uk/cbbcnews/hi/quiz/newsid\\_1917000/1917721.stm](http://news.bbc.co.uk/cbbcnews/hi/quiz/newsid_1917000/1917721.stm)



Sir Peter Blake's Seamaster sails through Antarctic waters

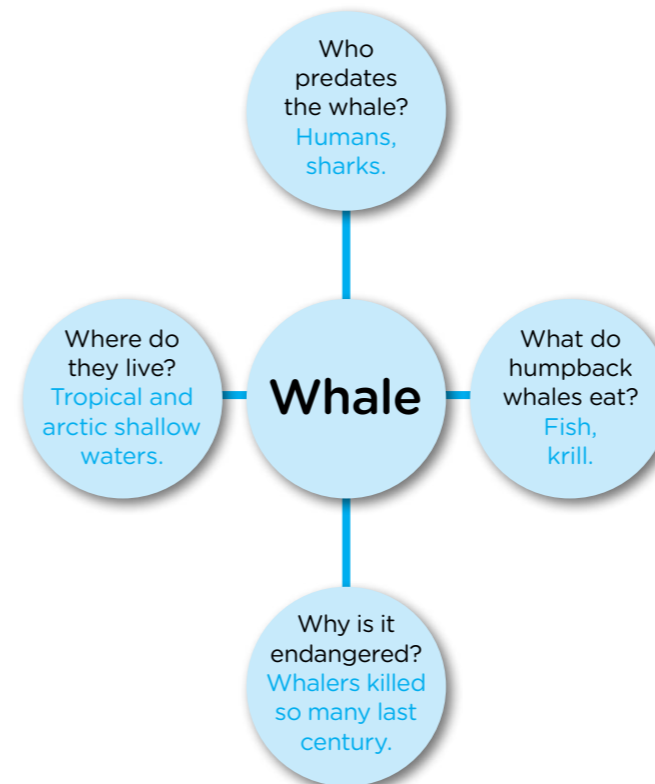
- \* The deep sea surrounding Antarctica is teeming with plant, fish and animal life. In small groups, students select from these groups: phytoplankton, krill, fish, birds, squid, penguins, seals, and whales and answer the 'who, what, where, why' question web. Afterwards students arrange their web in the correct food chain order (see template on this page).

## FOR FOOD WEB INFORMATION:

1. 'Antarctica: The Unfolding Story' page 19
2. [www.classroom.antarctica.gov.au](http://www.classroom.antarctica.gov.au) 'Who's Eating Who'
3. Interactive food website: [www.discoveringantarctica.org.uk/multimedia/flash/4\\_eating.html](http://www.discoveringantarctica.org.uk/multimedia/flash/4_eating.html)

- \* Students research why the Antarctic food web is so important globally. Have a class discussion about some of the impacts of overfishing in Antarctica.

An example of a 'w' question web:



## SUCCESS CRITERIA

Students have successfully answered their own questions and gained an understanding of some of the effects/impacts humans have had on Antarctica.

Students will understand how the food webs of Antarctic wildlife link together and the global importance.

## ADDITIONAL LINKS

For more information on human impacts in Antarctica go to: [www.aad.gov.au/default.asp?casid=3436](http://www.aad.gov.au/default.asp?casid=3436)

<http://dsc.discovery.com/earth/slideshows/antarctica-changes.html>

Sustainable Tourism in Antarctica: [www.sciencedaily.com/releases/2008/02/080222095351.htm](http://www.sciencedaily.com/releases/2008/02/080222095351.htm)

Fishing in Antarctica: [www.coolantarctica.com/](http://www.coolantarctica.com/) - go to Human Impacts and search 'Fisheries' in the blue bar.

## LEADERSHIP IN ACTION

Protecting Antarctica means starting here in New Zealand.

1. Educate the adults - present your Inquiry projects to the whole school including parents and teachers
2. Check out [www.sustainability.govt.nz](http://www.sustainability.govt.nz) for great ideas for to become more sustainable at home
3. Reduce the amount of rubbish you produce by refusing, reusing and recycling

## NOTES

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# CLIMATE CHANGE

## LEARNING OUTCOMES

Students will be able to:

- Understand some of the issues surrounding climate change
- Critically think about climate change and distinguish between fact, opinion and exaggeration

## MATERIALS

- Blakexpeditions DVD (provided)
- Learning log • Chart • LEARNZ site

## LEARNING ACTIVITIES

- \* Watch the Blakexpeditions DVD (17 minutes). Ask the class what issues Sir Peter Blake brought up in the DVD. What does climate change mean to them? Stress the importance of the students being critical thinkers/readers regarding the climate change issue because there is still a lot of debate about our changing global temperatures.
- \* Use LEARNZ 'Andrill' virtual field trip - preparation, audio-conferences, videos and diary entries then students can answer the relevant LEARNZ questions. Go to: [www.learnz.org.nz/index.php](http://www.learnz.org.nz/index.php)
- \* Students google stories in the media about climate change. Identify what bias they have. Keep a tally. What side do the media mostly report on? Why do you think that is?
- \* Students write in their Learning Log what they've understood about the opposing theories about climate change.
- \* Students make an informed opinion, using the statement: Climate change is caused by humans. Place four signs on the class room walls (agree, disagree, strongly agree, strongly disagree). Ask the class to stand where their opinion lies.
- \* Debate the issue - divide the class into groups of seven people. Three people in each group will write the 'for' statements and three people will write the 'against' statements. One student will be the chairperson.
- \* Students pick a statement, research it, and debate it.  
Statements:
  - Climate change is caused by humans.
  - We should use ethanol fuels rather than fossil fuels

- Tourists should be allowed to tour Antarctica
- We need to drill for oil in Antarctica because we're running out of oil elsewhere
- \* In their learning logs students reflect on being a critical thinker. Why do you need to not believe everything you read in newspapers or the internet? How can you make informed decisions? Where are reliable sources of information?

## CURRICULUM LINKS

**Science:** Science based activities, such as making an Andrill drill and rock core models, can be found at: [http://ftp.terc.edu/pub/Users/ldahlman/Flexhibit/Antarcticas\\_Climate\\_Secrets\\_screen.pdf](http://ftp.terc.edu/pub/Users/ldahlman/Flexhibit/Antarcticas_Climate_Secrets_screen.pdf) (16MB).

## SUCCESS CRITERIA

Students understand that climate change is a complex issue and the best approach is to keep informed and remain critical thinkers about the issue.

## ADDITIONAL RESOURCES

For climate change video information go to:  
<http://adventure.nationalgeographic.com/everest>  
<http://science.howstuffworks.com/climate-skeptic.htm>  
 Search YouTube for a selection of videos.  
 For good links on climate change and a quiz, go to: [www.4million.org.nz](http://www.4million.org.nz) (click on climate change, select school stuff, print Climate Change pdf)  
**For teachers:** 'Air Con: The seriously inconvenient truth about global warming' (Book)  
 'Eco Rangers Save the Planet: Earth-friendly missions for Green Kiwis' (refer to Resource page)

## LEADERSHIP IN ACTION

1. Reduce energy consumption to become more sustainable. How can your class make a pledge to cut their energy consumption?
2. Plant native trees - Trees for Survival: <http://www.tfsnz.org.nz/>

# SUSTAINABLE LIVING

## LEARNING OUTCOMES

Students will be able to:

- Understand how the different bases in Antarctica use sustainable practices

## MATERIALS

- Internet access • Learning logs • Flow chart

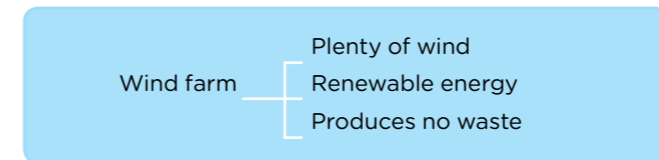
## LEARNING ACTIVITIES

Advise students that in Antarctica they cannot leave waste behind and they can only use resources that are available to them. For an introduction on sustainable practices in Antarctica: [www.antarctica.ac.uk/bas\\_research/techniques/tech6.php](http://www.antarctica.ac.uk/bas_research/techniques/tech6.php)

[www.antarcticanz.govt.nz/downloads/environment/Codeconduct.pdf](http://www.antarcticanz.govt.nz/downloads/environment/Codeconduct.pdf)

- \* Scott Base is doing their bit to become sustainable. They are building a wind farm on Ross Island so they can generate enough energy for the base. Students write an E-chart on wind energy, putting the main idea 'wind farm' on the left line, then details that support the idea on the right lines.

For E-Chart print outs:  
[www.eduplace.com/graphicorganizer/pdf/echart.pdf](http://www.eduplace.com/graphicorganizer/pdf/echart.pdf)



For Crater Hill wind farm information:  
[www.meridianenergy.co.nz](http://www.meridianenergy.co.nz) - search Ross Island Wind Farm

<http://windenergy.org.nz/nz-wind-farms/operating-wind-farms/ross-island>

- \* Look at how Princess Elisabeth Station (another base) is using sustainable practices:  
[www.educapoles.org/docs/dossier\\_pedago/dp\\_cze\\_06\\_en.pdf](http://www.educapoles.org/docs/dossier_pedago/dp_cze_06_en.pdf)  
 Complete the practical learning activities - play the card game, make the wind turbine and label the station.
- \* Go to the 'pictures & video' page on that site and look at how they recycle water and waste. In groups, students can draw a flow chart of how waste is recycled.
- \* Explore words in Maori language that promote sustainability.

For example:

- whenua* = land as a nourishing mother
- mauri* = hidden essential life force
- tapu* = sacred, not to be touched
- tiaki* = to care for, guard
- kaitiaki* = guardian

- \* Students reflect in their learning log how they could implement sustainable practices into their own home.

## CURRICULUM LINKS

**Science:** Research types of energy sources and write up a grid to discover what would be suitable for Antarctica (keeping in mind: costs to get it there, whether it can withstand the cold, the lack of sunlight hours during winter etc.)

Type of Energy	Cost Effective?	Waste free?	Can operate without sun?	Hardy enough to withstand wind & ice?
Nuclear	x	x	✓	?
Wind	✓	✓	✓	✓
Solar power	✓	✓	x	?
Fossil fuels	x	x	✓	✓
Wave power	?	✓	✓	?

## SUCCESS CRITERIA

Students will understand how the bases in Antarctica are fulfilling their Antarctic Treaty obligations by using sustainable practices.

## FOR FURTHER INFORMATION:

'Eco Rangers Save the Planet: Earth-friendly missions for Green Kiwis' (refer to Resource page)  
 'Sustainability on Ice' LEARNZ field trip to wind farm in Nov 2009  
<http://www.learnz.org.nz/index.php>

## LEADERSHIP IN ACTION

Become more sustainable at school:

1. Make sure lights, computer screens and plugs at the wall are turned off
2. Ensure waste is reduced and recycled
3. Start a walking bus at your school
4. Grow your own produce
5. Start a water awareness campaign

# THE ANTARCTIC TREATY

## LEARNING OUTCOMES

Students will be able to:

- Compare the Antarctic Treaty with the Treaty of Waitangi
- Predict what problems may have occurred if the Antarctic Treaty had not been signed

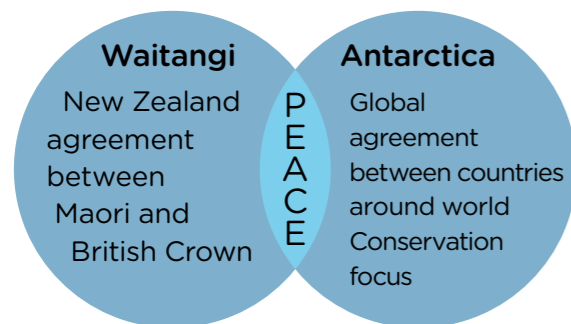
## MATERIALS

- Copies of the Treaty of Waitangi and the Antarctic Treaty
- Venn diagrams
- Learning logs

## LEARNING ACTIVITIES

- \* Introduce the lesson by watching a video on the Antarctica Treaty Summit: [www.youtube.com](http://www.youtube.com) (search term: **Antarctic Treaty Summit**). (For younger students read 'The Tree Hut Treaty'.) Talk about what a treaty is. Use the Treaty of Waitangi (signed between Maori and the British Crown in 1840) as an example. The purpose of the Antarctic Treaty was to ensure that Antarctica stays a natural reserve devoted to peace and science. For information on the Treaty of Waitangi go to: [www.nzhistory.net.nz/politics/treaty/read-the-treaty/english-text](http://www.nzhistory.net.nz/politics/treaty/read-the-treaty/english-text)
- For Information on the Antarctic Treaty go to: [www.antarctica.ac.uk/about\\_bas/publications/the\\_antarctic\\_treaty.pdf](http://www.antarctica.ac.uk/about_bas/publications/the_antarctic_treaty.pdf)

- \* In pairs, students read the two Treaties. Students draw a Venn diagram showing the differences between the Treaty of Waitangi and the Antarctica Treaty.



- \* The main Antarctic Treaty was signed and entered into force in June 1961 however; other agreements (the Antarctic Treaty System) were developed in later years. Students write a 'what-if' statement about what may have happened if the additional agreements had not been signed, and Antarctica's inhabitants and resources had not been protected.
- \* Antarctica has attracted leaders such as Shackleton, Hillary and Blake. Discuss what makes a great leader:

visionary, determined, focussed, caring, hard worker. The people who pushed for the signing of the Antarctica Treaty would have needed these attributes too.

- \* Students reflect in their Learning Log what they've learnt about the treaties. Comment on the main goal of the Antarctic Treaty and why it was so remarkable that the Treaty occurred.

## CURRICULUM LINKS

**Reading:** Students read the Antarctic Treaty, follow the prompts to answer the questions on the website: [www.classroom.antarctica.gov.au/7-international/7-1-antarctic-treaty/](http://www.classroom.antarctica.gov.au/7-international/7-1-antarctic-treaty/)

**Drama:** Role-play the signing of the Antarctic Treaty. Include people who are keen to preserve the environment and peace in Antarctica (scientists) and people who have other interests (want more land in Antarctica, want to drill for oil, want to catch whales for 'scientific' purposes, want to catch more fish).

**Technology:** Interactive activities: [www.discoveringantarctica.org.uk/9a\\_treaty.php](http://www.discoveringantarctica.org.uk/9a_treaty.php)

Once the Treaty was signed in 1959 many scientific projects began. The types of projects have not differed much since then but the methods and technology used have changed considerably. Students research one new technology tool being used in Antarctica (satellite, transport, communication) and write a PMI (plus, minus, interesting) statement about it.

Example: ATOLL Laboratory What is it? An underwater laboratory		
Plus	Minus	Interesting
Scientists were able to observe underwater species for long periods of time	It is no longer in operation	It was the largest fibreglass structure ever built at that time

PMI Chart explained: [www.enchantedlearning.com/graphicorganizers/pmi/](http://www.enchantedlearning.com/graphicorganizers/pmi/)

## SUCCESS CRITERIA

Students gain an understanding of the importance of the Antarctic Treaty. Further resources (\*refer to Resource Page): 'Antarctica: The Unfolding Story' \* 'Illustrated History of Antarctica' \* [http://www.antarctica.ac.uk/about\\_bas/publications/the\\_antarctic\\_treaty.pdf](http://www.antarctica.ac.uk/about_bas/publications/the_antarctic_treaty.pdf) (good photos) [http://ftp.terc.edu/pub/Users/ldahlman/Flexhibit/Antarcticas\\_Climate\\_Secrets\\_screen.pdf](http://ftp.terc.edu/pub/Users/ldahlman/Flexhibit/Antarcticas_Climate_Secrets_screen.pdf) (16MB)

# ANTARCTICA'S PROTECTION

## LEARNING OUTCOMES

Students will be able to:

- Use mapping skills to locate Antarctica's specially protected areas
- Understand the importance of protected areas

## MATERIALS

- Internet access
- Map
- Books
- Learning logs

## LEARNING ACTIVITIES

- \* New Zealand has different types of specially protected areas: marine reserves and parks, wildlife sanctuaries, marine mammal sanctuaries, mataitai, taiapure, and historic heritage reserves. Some areas are of special historical significance and others conserve wildlife and/or fauna. Mataitai areas are of traditional importance to Maori for customary food gathering and taiapure is an area of special significance to Maori. Can students name any of these areas in New Zealand? For information on New Zealand's specially protected areas - [www.doc.govt.nz/conservation/](http://www.doc.govt.nz/conservation/)
- \* Reiterate to the class that Antarctica is one big nature reserve but it also has Specially Protected Areas (SPA), Specially Managed Areas (SMA) and Historic sites. Students investigate what these terms mean for Antarctica and give examples in the Concept Chart. For information use: [www.antarctica.ac.uk/about\\_antarctica/environment/special\\_areas/index.php](http://www.antarctica.ac.uk/about_antarctica/environment/special_areas/index.php)
- \* Students map some of the protected areas on a map of Antarctica. Use Template One on page 17, an atlas or website information and the grid lines on the map to identify and label the protected areas located at: E21, A26, Q5, R5, K22, D20. For information on the protected areas: <http://cep.ats.aq/cep/apa/asp/index.html> choose 'location maps' in the left hand column.
- \* At some of the SPA and SMA are rock caches. Past explorers have left a memento or written a few words to leave behind. What would you leave behind? Warnings about crevasses, a map where you've left food or a cave you found shelter in? Will you leave words of wisdom or a recount of your journey? Write two paragraphs for your own cache.

- \* Students write in their Learning Log about all the different types of leaders that are needed in Antarctica. For example, explorers, scientists, administrators, engineers and carpenters.

## CURRICULUM LINKS

**Outdoor education:** The class works together to come up with an orienteering course around your school/community. Put caches in your area then write instructions for other classes to find them. Make the South Pole the point in the middle of your school.

## SUCCESS CRITERIA

Students will understand what a specially protected area is and why they are so important.

Concept Chart			
Term	Meaning	Example	Why
Specially Protected Areas	Areas of land protecting outstanding environment, scientific, historic, beautiful or wilderness values	Beauford Island, Ross Sea	To protect substantial avifauna, important breeding area, extensive area of mosses
Specially Managed Areas	Aimed at assisting in the planning and co-ordination of activities including co-operation between parties and minimising environmental impacts	McMurdo Dry Valleys	Largest ice free area and has important wilderness and scientific values
Historic Areas	A place or monument of historic importance	Hut at Cape Evans	Built by Sir Ernest Shackleton's team

## LEADERSHIP IN ACTION

1. Sponsor an animal: [www.aucklandzoo.co.nz](http://www.aucklandzoo.co.nz) [www.safe.org.nz](http://www.safe.org.nz)
2. Pick up rubbish in your local community

# EARLY EXPLORERS - SIR ERNEST SHACKLETON

## LEARNING OUTCOMES

### Students will be able to:

- Identify what explorers had to overcome in Antarctica
- Learn about Sir Ernest Shackleton's remarkable survival in Antarctica
- Make a timeline of Antarctica's history

### MATERIALS

- Template Three • PowerPoint
- DVD projector and screen
- Books • Internet access
- Readers' theatre script • Learning log

## LEARNING ACTIVITIES

- \* To understand the explorations in Antarctica, students need to understand the difficulties explorers had to overcome. Can they name any Antarctic explorers and any difficulties they may have faced?
- \* In groups, students read the Readers' Theatre play on Shackleton (Template 3 page 18) and practice. Select one group to perform to class, and other groups can perform for other classes throughout the school.
- \* For gifted students: write a Readers' Theatre script play on other Antarctica explorers such as Mawson, Scott, Amundsen. For instructions on how to write a Readers' Theatre Script go to: [www.aaronshp.com/rt/Tips1.html](http://www.aaronshp.com/rt/Tips1.html)
- \* In groups students role play what they should do to survive in Antarctica if they were explorers: i.e. keeping dogs alive, getting water, setting up shelter, dealing with injuries, keeping group's positive attitude going etc.
- \* Antarctica was the last continent to be discovered. It's your mission to explore the history of Antarctica. Divide students into 8 groups. First group investigates the 18th century, 2nd the 19th century, 3rd 1900-1910, 4th 1911-1920, 5th 1921-1940, 6th 1950-1970, 7th 1971-2000, 8th 2000+. Students make a pictorial timeline.

For the history of Antarctica go to:

[http://en.wikipedia.org/wiki/History\\_of\\_Antarctica](http://en.wikipedia.org/wiki/History_of_Antarctica)

[www.antarcticconnection.com/antarctic/history/index.shtml](http://www.antarcticconnection.com/antarctic/history/index.shtml)

[www.ast.leeds.ac.uk/haverah/spaseman/history.shtml](http://www.ast.leeds.ac.uk/haverah/spaseman/history.shtml)

[www.coolantarctica.com](http://www.coolantarctica.com)

Timeline of Antarctica:

[www.seattlepi.com/antarctica/about/history.shtml](http://www.seattlepi.com/antarctica/about/history.shtml)

- \* Teacher Note: Post the timeline up on the classroom wall.
- \* Students reflect in their Learning Log about how an explorer they investigated showed great leadership, noting all the leadership attributes they possessed to manage their explorations.

## CURRICULUM LINKS

Language:

- Using [www.tki.org.nz/r/wick\\_ed/topics/antarctica/maxi1.php](http://www.tki.org.nz/r/wick_ed/topics/antarctica/maxi1.php) complete the 'Race for the Pole' activity by designing an advertisement.

- Listen to the diary entry on:

[www.discoveringantarctica.org.uk/5\\_diaries.php](http://www.discoveringantarctica.org.uk/5_diaries.php) then write your own diary entry - imagining you are part of Sir Ernest Shackleton's team.

## SUCCESS CRITERIA

Students will understand how tough it was for the early explorers and gain knowledge of Antarctica's history.

### Books: see full details on the Resources page

- 'Illustrated History of Antarctica'
- 'The Danger Zone: Avoid joining Shackleton's Polar Expedition!'
- 'Antarctica: The Unfolding Story'

Shackleton Lesson Plans: [www.pbs.org/wgbh/nova/shackleton/classroom/lesson.html](http://www.pbs.org/wgbh/nova/shackleton/classroom/lesson.html)

[http://main.wgbh.org/imax/shackleton/pdf/teachgd\\_hi.pdf](http://main.wgbh.org/imax/shackleton/pdf/teachgd_hi.pdf)

# SIR EDMUND HILLARY AND ANTARCTICA

## LEARNING OUTCOMES

### Students will be able to:

- Describe Sir Edmund Hillary's contribution to Antarctica's history
- Design a new base for Scott Base

### MATERIALS

- Pictures and books on Sir Edmund Hillary
- KWL charts • Internet access • Learning logs
- Printed reading material (optional)

## LEARNING ACTIVITIES

- \* Ask the class what they already know about Sir Edmund Hillary. They will undoubtedly know he climbed Mt. Everest. Tell the class that Sir Edmund Hillary played an important role in the history of Antarctica too. Photos can be found at: [www.nationalgeographic.com](http://www.nationalgeographic.com) - search 'Sir Edmund Hillary pictures' - photo 4.
- \* Students draw up a KWL chart. They will write what they know about Sir Edmund Hillary and what questions they would like answered about his part in Antarctica's history. Students research in books and on the internet to answer their questions and write what they've learnt in the KWL chart, and then summarise their knowledge.
- \* New Zealand has a station at Antarctica called Scott Base. It was set up by Sir Edmund Hillary in 1957 before he embarked on his journey to the South Pole. Research and design a new base for Sir Edmund Hillary and his team. Check out the YouTube video - [www.youtube.com](http://www.youtube.com) - search for Sir Edmund Hillary, Antarctica (1957 - part 3).
- \* Students reflect in their Learning Log on Sir Edmund Hillary's achievements, and the character traits needed to accomplish what he did. Students also consider which of Sir Edmund Hillary's traits they have or would like to develop in themselves.

## CURRICULUM LINKS

**Reading:** Read about Sir Edmund Hillary's expedition in Antarctica on: [www.nzhistory.net.nz/media/photo/edmund-hillary-antarctica](http://www.nzhistory.net.nz/media/photo/edmund-hillary-antarctica)

Complete these questions:

1. What did Sir Edmund Hillary achieve?  
First overland crossing of Antarctica
2. When?  
2 March 1958
3. What did he and his team also achieve?  
Set up Scott Base
4. How did Sir Edmund Hillary get to the pole?  
Tractors
5. Why were people annoyed with Sir Edmund Hillary?  
They felt he should have just set up supplies and let Dr Vivian Fuchs get there first.
6. Why did Sir Edmund Hillary feel justified doing what he did?  
"Once we had done all that was asked of us - and a good bit more - I could see no reason why we shouldn't be organising a few interesting challenges for ourselves."
7. What would you have done in the same circumstances and why?

## SUCCESS CRITERIA

Students have learnt facts about Sir Edmund Hillary. They can form questions and research the answers.

KWL Chart		
Sir Edmund Hillary's role in Antarctica's History		
What do I know?	What do I want to find out?	What have I learnt?
Summary:		

### Books: see full details on the Resources page

- 'Illustrated History of Antarctica'
- 'Antarctica: The unfolding story'
- 'Hell Bent for the Pole'
- 'Sir Edmund Hillary: An extraordinary Life'

# SIR PETER BLAKE AND ANTARCTICA

## LEARNING OUTCOMES

Students will be able to:

- Role play a scene from Sir Peter Blake's logs
- Identify one of Sir Peter Blake's goals and the reason for it
- Compare early and modern explorers use of resources

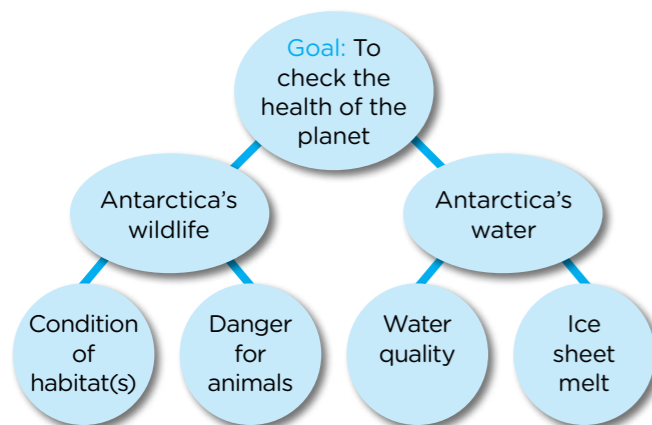
## MATERIALS

- Template 4 • Learning logs
- PowerPoint projector/screen or OHP
- Printed logs from website • Charts

## LEARNING ACTIVITIES

- \* Ask the class if they know of another New Zealander who explored Antarctica (other than Sir Edmund Hillary). In 2000, Sir Peter Blake explored waters which had previously been under a large ice sheet.
- \* Divide the class into small groups and give them a page each from Sir Peter Blake's log: [www.sirpeterblaketrust.org/blakexpeditions/log/3548](http://www.sirpeterblaketrust.org/blakexpeditions/log/3548) (Click the arrows near date to get additional log entries.) Each group reads their entry and then acts it out as a skit.
- \* After watching the skits, students write a Goal Chart stating Sir Peter Blake's goal for travelling to Antarctica. In the next two circles below write two things he focussed on (wildlife, water) and in the circles below, give examples.

Goal Chart



- \* Read the following article to the class: [www.sirpeterblaketrust.org/blakexpeditions/special\\_report/3726](http://www.sirpeterblaketrust.org/blakexpeditions/special_report/3726) Students then draw up a matrix comparing Sir Peter Blake and Scott's trips.

		Matrix			
		Transport	Food	Clothing	Shelter
Sir Peter Blake	Seamaster boat, Dinghy	Meat Porridge Chocolate Hot chocolate	Sailing gear Layered clothing	Boat	
Scott	Discovery boat, Dog Sledges	Pemmican Biscuits Cocoa Butter & Cheese	Windproof Insulating but not sweat proof	Tent	

- \* Leadership Challenge - now you've learnt about three great leaders (Shackleton, Hillary and Blake) - in groups make a power point presentation or DVD about why they were such great leaders in Antarctica. Show your presentation to the Juniors and later in the day, invite parents to an afternoon tea and present again.
- \* Students write in their Learning Log about the qualities a team would need for an exploration trip to Antarctica. For example, ability to get on with others, skills (cooking, equipment maintenance) and ability to cope in extreme environments. What skills and attributes could they bring to an exploration team?

## SUCCESS CRITERIA

Students have learnt about Sir Peter Blake's exploration to Antarctica, and can compare his journey with another explorer's journey to Antarctica.

A recent trip to Antarctica by Peter Whittaker:  
<http://adventure.nationalgeographic.com/everest>  
 Books: see full details on the Resources page  
 • 'The Last Great Adventure of Sir Peter Blake'

## LEADERSHIP IN ACTION

1. The Sir Peter Blake Trust inspires leadership in action - hold a leadership week activity [www.nzleadershipweek.org](http://www.nzleadershipweek.org)
2. Be an environmental leader - complete a coastal clean up; download a kit from [www.sirpeterblaketrust.org](http://www.sirpeterblaketrust.org) and adopt your local beach or waterway. Look at other coastal factors that you might be able to restore i.e. dune restoration - planting.

# ANTARCTICA ACTION STATIONS

## PREPARE 8 ACTION STATIONS WITH THE FOLLOWING EQUIPMENT AND MATERIALS:

- Plain paper at each station
- Map of Antarctica
- Graph paper
- Ice cubes
- Salt
- Markers
- Glasses
- Dirt filled film canister (or something similar).

"Quick, to your stations everyone!"



Internet access will also be needed for three of the eight stations (details of which stations will require which materials can be found on the next page).

Before the students start Antarctica Action Stations, brain storm their current knowledge of Antarctica. Take a minute or two to write everything down.

Divide students (3-4 students in each group) into eight groups making sure you have a mix of abilities. Let them pick an Antarctica themed name for their group.

## Next explain the Action Stations to the students:

1. There are eight stations on tables around the room.
2. Each group of students will go to a station and on task completion, move around the room.
3. In three minutes students read the task and make sure all team members understand the activity. There is the chance to ask any questions at this stage.
4. At the sound of a bell students tidy the station and write in their Learning Log about one thing they have learnt and one question they wish to answer.
5. Students share their questions with the whole group.
6. When the bell rings again, students move in a clockwise direction to the next station.

It will take approximately 30 minutes for each round. Allow several lessons to complete all eight stations.

Once all stations are complete, students write an evaluation in their Learning Logs of how well they completed the tasks and how their team worked. Students then grade the activities from 1-8 based on their enjoyment of each activity.

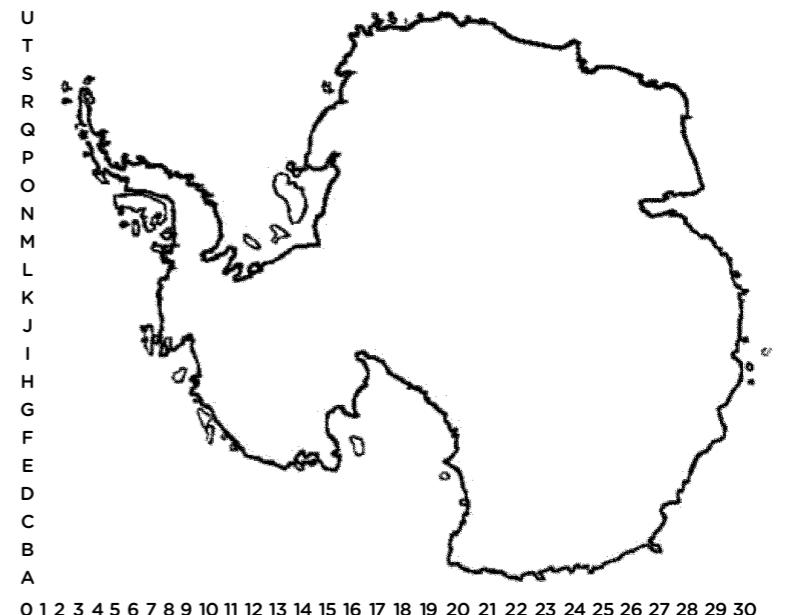
PHOTOCOPY AND ENLARGE ONTO A3 PAPER

BLUE ICE	HAIKU POEM (traditional Japanese poetry)
<p>Hypothesise what will happen when you sprinkle salt on to blue ice (ice with blue dye sprinkled on to it to replicate old ice) that has already been made for students.</p> <p>Sprinkle a teaspoon of salt over the blue ice.</p> <p>Record what happens.</p> <p>Write a conclusion about whether your hypothesis is correct/incorrect and why.</p>	<p>Write a haiku poem about Antarctica. First brainstorm words you could use. Second, think about what Antarctica reminds you of. Next, write your poem with a 5:7:5 structure (see <a href="http://www.toyomasu.com/haiku/">http://www.toyomasu.com/haiku/</a>).</p> <p>Example:</p> <p>White/ ex/panse/ of/ ice/ (5)</p> <p>Creep/ ing /a/round /the/South /Pole/ (7)</p> <p>Pen/guin's pa/ra/dise/ (5)</p> <p>Write a second poem if you have spare time.</p>
MELTING POLES	MAPPING
<p>Discover which Pole, if it melted, would make the sea level rise? Write down your hypothesis.</p> <ol style="list-style-type: none"> <li>Place a film canister (filled with dirt) upside down into one glass of water. This represents an island. Put an ice cube on top of the canister. This represents Antarctica.</li> <li>Put another ice cube into the second glass of water. This represents the Arctic.</li> <li>Mark the level of the water on each glass.</li> <li>Record what happens while ice cubes melt.</li> </ol> <p>See why this happens: <a href="http://www.csiro.au/resources/ps2zv.html">www.csiro.au/resources/ps2zv.html</a></p>	<p>On a blank map of Antarctica draw the route of:</p> <ul style="list-style-type: none"> <li>Sir Ernest Shackleton</li> <li>Captain Robert Falcon Scott</li> <li>Sir Edmund Hillary</li> <li>Sir Peter Blake</li> </ul> <p>Find out their routes here:</p> <p><a href="http://www.south-pole.com/map.htm">www.south-pole.com/map.htm</a></p> <p><a href="http://www.pbs.org/wgbh/nova/shackleton/surviving/quest.html">www.pbs.org/wgbh/nova/shackleton/surviving/quest.html</a></p> <p><a href="http://news.bbc.co.uk/onthisday/hi/dates/stories/january/4/newsid_4051000/4051107.stm">http://news.bbc.co.uk/onthisday/hi/dates/stories/january/4/newsid_4051000/4051107.stm</a></p> <p><a href="http://www.sirpeterblaketrust.org/blakexpeditions/antarctica/">www.sirpeterblaketrust.org/blakexpeditions/antarctica/</a></p>
LOG ENTRIES	BOARD GAME
<p>Pretend your group were with British explorer, Captain Robert Falcon Scott's team journeying to the South Pole. Each person will write about their journey - continuing on from where the last group wrote their journal entries. For example of log entries go to:</p> <p><a href="http://www.sirpeterblaketrust.org">www.sirpeterblaketrust.org</a> (Blakexpedition's logs)</p>	<p>As a group make a board game using Sir Peter Blake's trip to Antarctica as material.</p> <p>For example, you could make a Snakes &amp; Ladders game. Possible entries on board could be: stop to watch whales - miss a turn, sail to Halfmoon Island move forward five spaces.</p> <p>Use <a href="http://www.sirpeterblaketrust.org">www.sirpeterblaketrust.org</a> (Blakexpedition's logs)</p>
MYTHS	GRAPH IT
<p>Very few myths or legends exist about Antarctica. We have Maori myths about the creation of New Zealand, for example Maui and the Great Fish.</p> <p><a href="http://www.tki.org.nz/r/maori/nga_pakiwaitara/maui-ika/index_e.php">www.tki.org.nz/r/maori/nga_pakiwaitara/maui-ika/index_e.php</a></p> <p>As a group, write a myth about why Antarctica is covered in ice.</p> <ol style="list-style-type: none"> <li>Brainstorm your ideas.</li> <li>Mind map your storyline.</li> <li>Each group member writes a paragraph.</li> <li>Edit and check that the story flows.</li> </ol>	<p>Find out what the temperature of Antarctica is (at McMurdo Station) over a year, then graph it. Use: <a href="http://www.coolantarctica.com">www.coolantarctica.com</a> (Antarctica - climate &amp; weather)</p> <p>Compare the temperature of New Zealand (in Wellington) over a year, and then graph it. Use: <a href="http://www.niwa.co.nz/education-and-training/schools/resources/climate">www.niwa.co.nz/education-and-training/schools/resources/climate</a></p> <p>Compare the two charts.</p>

TEMPLATE ONE - ANTARCTICA MAP QUEST

Locate as many of these geographic features on your Antarctic map as you can by using an atlas or websites:

- Alexander Island
- Amundsen-Scott South Pole Station
- Amundsen Sea
- Antarctic Circle
- Antarctic Ocean
- Antarctic Peninsula
- Beardmore Glacier
- Dry Valleys
- Dumont D'urville Sea
- East Antarctic Ice Sheet
- Ellsworth Mountains
- Enderby Land
- Geographic South Poles
- Geomagnetic South Pole
- Indian Ocean
- King George Island
- Magnetic South Pole
- Mawson Base, Australia
- Queen Maud Mountains
- McMurdo Dry Valleys
- McMurdo Station
- Mount Erebus
- Palmer Station
- Prince Charles Mountains
- Ronne-Filchner Ice Shelf
- Ross Ice Shelf
- Ross Island
- Rothera
- Scott Base, New Zealand
- Shackleton Ice Shelf
- South Georgia Island
- South Magnetic Pole
- South Orkney Islands
- South Pacific Ocean
- South Shetland Islands
- Terra Nova Bay
- Transantarctic Mountains
- Vostok Base, Russia
- Weddell Sea



For maps online: [www.south-pole.com/map.htm](http://www.south-pole.com/map.htm) and <http://ngm.nationalgeographic.com/ngm/antarctica/>

TEMPLATE TWO - INQUIRY CHART

INQUIRY CHART		
Essential Question: What impact have humans had on Antarctica?		
Hypothesis:		
QUESTION	WHAT I LEARNT	SOURCE
Examples:		
1. How have people polluted Antarctica in the past?		
2. What impact has tourism had on Antarctica?		
3. Who has been fishing in the Antarctic region and what impact has that had?		
Conclusion: (Was my hypothesis correct and why)		
Question: What can I do about it?		

### TEMPLATE THREE - READERS' THEATRE - ERNEST SHACKLETON'S JOURNEY

CREW:	Narrator 1	Ernest Shackleton	Hurley/Captain Sorlie
	Narrator 2	Worsley	Wild/McCarty/Marston
<b>NARRATOR 1</b>	In 1914, Sir Ernest Shackleton and a crew of 27 sailed to Antarctica intending to make the first crossing on foot of the Antarctic continent.		
<b>NARRATOR 2</b>	When they were only 85 miles off the continent their ship Endurance became trapped in ice and began to slowly sink into the pack ice.		
<b>SHACKLETON</b>	We won't tax the engine by trying to break through - we'll wait for an opening.		
<b>WORSLEY</b>	Yes, Boss.		
<b>NARRATOR 1</b>	In the night, the ice closed around the ship and a north easterly gale rose, which compressed the ice, holding the Endurance fast.		
<b>WORSLEY</b>	Boss, I think we're trapped.		
<b>SHACKLETON</b>	Worsley, that means we'll have a nine month wait before we can get out.		
<b>HURLEY</b>	(Writes in diary:) It is beyond conception, even to us, that we are dwelling on a colossal ice raft, with five feet of water separating us from 2,000 fathoms of ocean and drifting along under the caprices of wind and tides, to gawd knows where.		
<b>SHACKLETON</b>	Okay crew, we must make the best of it. We'll clean the decks at 700 hours, exercise the dogs at 900 hours...		
<b>HURLEY</b>	(Writes in diary:) I'm in charge of the 69 Canadian Sledge dogs - it takes most of the crew to help me exercise them. We start out treating them like working dogs but after several months of exercising them on the pack ice they're my best friends...		
<b>SHACKLETON</b>	At 1100 hours we'll begin building dogloos for the dogs...		
<b>NARRATOR 2</b>	Suddenly the floe on the port side cracks and huge pieces of ice shoots up from under the port bilge. Within a few seconds the ship keels over until she has a list of 30 degrees to port.		
<b>WORSLEY</b>	Boss, have you noticed the pitch of the ship?		
<b>SHACKLETON</b>	Yes. Crew we must make an Ocean Camp immediately. Tonight we sleep on the pack ice...		
<b>NARRATOR 1</b>	For five months the party of 28 drifted 600 miles north on a huge ice floe - an ice floe that shattered and shrank as time passed. Cracks opened up under tents, camps had to change with desperate speed; and killer whales cruised in open water looking for an easy meal.		
<b>WORSLEY</b>	Boss, what are we going to feed the crew? We've nearly run out of provisions.		
<b>SHACKLETON</b>	Okay crew, at 1500 hours six of you will go hunting for penguin and seals...		
<b>HURLEY</b>	(Writes in diary:) Today we ate one of the dogs. I felt wicked taking his life.		
<b>WILD</b>	Boss, I'm feeling seasick from the swell under the ice. Can you see us moving soon?		
<b>SHACKLETON</b>	Crew, we need to find land. Tomorrow, we're going to sail for Elephant Island - 100 miles to the North.		
<b>NARRATOR 2</b>	The men launched the three boats: the Caird, Docker and Wills, which they had rescued from the Endurance.		
<b>HURLEY</b>	(Writes in diary:) Ohh, it was a terrible journey. We battled prevailing winds, cold, seasickness and mind numbing tiredness. On the seventh day we arrived at last on Elephant Island.		
<b>NARRATOR 1</b>	The crew were frostbitten and in poor health, some on the verge of mental collapse.		
<b>SHACKLETON</b>	At 1100 hours Team one will collect rocks to build a shelter. Team 2 will erect the tents. Team 3 will hunt for food...		
<b>WORSLEY</b>	Boss, how long do you think we'll make camp here?		

<b>SHACKLETON</b>	Not long, soon we'll take the strongest sailors: that's you, me, Crean, McNeish, Macarty and Vincent on the Caird boat to South Georgia Island to get help. I'll leave Wild in charge of the men staying here.
<b>WORSLEY</b>	That's over 800 miles away.
<b>SHACKLETON</b>	And you my man will be in charge of navigation. If you make an error you'll send us off to the open sea.
<b>NARRATOR 2</b>	The small boat pitched and rolled in the heavy seas. Two shipmates held Worsley steady so he could cite the sun.
<b>SHACKLETON</b>	It's clearing boys! Wait... For gawd's sake, that's not white sky... Hold on! Shouts A huge wave has got us!
<b>NARRATOR 1</b>	The wave nearly capsized the boat, filling her up with water. They baled like mad, uncertain whether they would succeed.
<b>NARRATOR 2</b>	After being out to sea for 17 days in their battered boat, they landed at last on the west side of South Georgia Island.
<b>SHACKLETON</b>	Right men, we can't dally here. Crean, Worsley and I will strike out on foot for the whaling station, 22 miles away.
<b>WORSLEY</b>	Boss, we've only got enough food for three days.
<b>SHACKLETON</b>	We've got 22 men waiting for us to rescue them. Their plight is worse than ours. We must push on, somehow.
<b>NARRATOR 1</b>	After marching without rest for 36 hours over glaciers, icy slopes, snowfields, an icy lake and through a waterfall on May 20th, 1916 they sighted the whaling station.
<b>CAPT SORLIE</b>	Come in. By gads, you're the last thing I expected to see coming in from the snow and ice.
<b>SHACKLETON</b>	I'm afraid we smell.
<b>CAPT SORLIE</b>	That doesn't matter, we're used to it on a whaling station.
<b>NARRATOR 1</b>	Shackleton, Worsley and Crean were filthy. They had neither washed for three months nor changed their clothes for seven months. Their hair and beards were long and matted with soot and blubber.
<b>NARRATOR 2</b>	After a sumptuous meal, a bath and changed into clean clothes they sped in a steam whaler to rescue the three men they had left on the other side of the island. When they greeted the three men, they looked disappointed.
<b>MACARTY</b>	Well, we thought the Skipper would have come back, anyway.
<b>WORSLEY</b>	I am here.
<b>NARRATOR 2</b>	Clean and shaven they had mistaken him for a Norwegian. They put the Caird and men on board and steamed back.
<b>NARRATOR 1</b>	Shackleton made four attempts to travel to Elephant Island, where the other 22 other were, but was not successful until the thick ice had melted away, three months later.
<b>NARRATOR 2</b>	Meanwhile, the crew on Elephant Island were hard at work removing snow drift from the hut made from their boats and finding limpets for their evening meal.
<b>NARRATOR 1</b>	At 12.45 most of the men turned in for 'hoosh oh' a lunch of boiled seal's backbone.
<b>NARRATOR 2</b>	When all of a sudden they heard the sound of Marston's running steps. He stuck his head into the hut, panting:
<b>MARSTON</b>	Wild, there's a ship, shall we light a fire?
<b>NARRATOR 1</b>	Before there was time to reply the crew rushed for the door, tumbling over each other.
<b>NARRATOR 2</b>	The Chilean tug Yelcho helped Shackleton break through the pack ice.
<b>SHACKLETON</b>	Looking through binoculars, he shouts: Two-five-seven...They're all safe!
<b>NARRATOR 2</b>	After two years and against impossible odds, all of the members of the Endurance expedition were rescued.

# RESOURCES

## BOOKS FOR THE CLASSROOM

- Antarctica: The Unfolding Story** by Margaret Andrew, (Waiatarua Publishing)
- Hellbent for the Pole: An insider's account of the 'race to the South Pole'** by Geoffrey Lee Martin (Random House)
- Sir Edmund Hillary: An Extraordinary Life** by Alexa Johnston (Penguin)
- The Danger Zone: Avoid joining Shackleton's Polar Expedition!** By Jen Green (Book House)
- The Heart of the World: Antarctica** by Coral Tulloch (Harper Collins)
- The History of Antarctica** by Marcia Stenson (Random House)
- 'Eco Rangers Save the Planet: Earth-friendly missions for Green Kiwis'** by Maria Gill (New Holland)
- The Riddle of the Frozen Phantom** by Margaret Mahy (Harper Collins)

## BOOKS FOR TEACHERS

- Air Con: The seriously inconvenient truth about global warming** by Ian Wishart (Howling at the Moon Pub.)
- Poles Apart** by Gareth Morgan & John McCrystal (Random)
- The Last Great Adventure of Sir Peter Blake** edited by Alan Sefton (Penguin)
- The Great Antarctic Rescue: Shackleton's Boat Journey** by F.A. Worsley (Sphere Books Ltd)

## VIDEOS/DVDS

- Blake Expedition Highlights** (provided)
- Happy Feet** (Disney)
- March of the Penguins** (Warner)
- Ice Worlds: Planet Earth** (BBC)
- CD: Hillary - Nothing Venture, Nothing Win**
- 'Ice' Series hosted by Marcus Lush
- Life in the Freezer, Ice Worlds** David Attenborough series
- Lessons From a Melting Icecap** - <http://lessonsfilm.wordpress.com/>

Downloadable

- National Geographic film:** [http://ngm.nationalgeographic.com/ngm/data/2001/12/01/sights\\_n\\_sounds/media.1.2.html](http://ngm.nationalgeographic.com/ngm/data/2001/12/01/sights_n_sounds/media.1.2.html)
- Environmental Video - YouTube 'HOME PROJECT' (1hr 30min)

## ADDITIONAL LINKS

- <http://www.mfe.govt.nz/publications/ser/enz07-dec07/index.html>
- The Ministry for the Environment's Environment New Zealand 2007 has statistical information on the state of New Zealand's oceans.
- [www.ecokids.co.nz](http://www.ecokids.co.nz)
- A site for students with lots of environmental tips, movies, games and downloads.
- <http://www.treasuresofthesea.org.nz>
- For information about marine animals, fish, plants etc.
- [http://www.arc.govt.nz/council/sustainability-education/education-resources/education-resources\\_home.cfm](http://www.arc.govt.nz/council/sustainability-education/education-resources/education-resources_home.cfm)

At this site you can download an order form for Auckland Regional Council's educational resources, many of which are free for schools. [http://www.albatross.org.nz/PDF%20Resources/Environment\\_Action\\_Planner.pdf](http://www.albatross.org.nz/PDF%20Resources/Environment_Action_Planner.pdf)

Contains a good format for an environmental action planner.

## FIELD TRIPS

- Kelly Tarlton's, Auckland [www.kellytarltons.co.nz](http://www.kellytarltons.co.nz)
- International Antarctic Centre, Christchurch [www.iceberg.co.nz](http://www.iceberg.co.nz)
- Canterbury Museum, Christchurch [www.canterburymuseum.com](http://www.canterburymuseum.com)

## SCHOOL JOURNALS

- Five Weeks on Ice** by Julia Millen, 1981 Pt 4 #2
- Southern Quest Part 1** by Broni Stephen, 1990 Pt 4 #1
- Southern Quest Part 2** by Broni Stephen, 1990 Pt 4 #2
- Southern Quest Part 3** Leaving it Clean by Broni Stephen, 1990 Pt 4 #3
- Time Capsule in the Antarctica** by Kim Westerkov, 1991 Pt 1 #3
- Voyage to the cold south** by Emily Sendall, 1994 Pt 1 #2
- 1907: What's in the News?** By Sue Gibbison, 2007 Pt4 #2
- The Big Chill and the big drill** by Rupert Alchin, Connected, 2008, #12
- Frozen Food** by Philippa Werry, 2006, Pt. 4 #1
- How cold is cold?** By Rose Hudson, 1991, Pt.3, #1
- Making lakes and making quakes** by Robert Alchin, Connected, 2008, #12
- Snow Houses** by Kim Westerskov, 1988, Pt.1, #4

## TEACHING RESOURCES

- [www.heritage-antarctica.org](http://www.heritage-antarctica.org)
- Care for Our Coast Teachers Resource Years 4-8 - [www.sirpeterblaketrust.org](http://www.sirpeterblaketrust.org)
- [www.csiro.au/science/PolarEyes.html](http://www.csiro.au/science/PolarEyes.html)

## WEBSITES

- [www.andrill.org/iceberg](http://www.andrill.org/iceberg)
- [www.antarctica.org.nz](http://www.antarctica.org.nz)
- [www.antarcticconnection.com](http://www.antarcticconnection.com)
- [www.hellbentforthepole.com/contents4.html](http://www.hellbentforthepole.com/contents4.html)
- [www.antarctic-link.org.nz](http://www.antarctic-link.org.nz)
- [www.antarcticanz.govt.nz](http://www.antarcticanz.govt.nz)
- [www.iceberg.co.nz](http://www.iceberg.co.nz)
- <http://ngm.nationalgeographic.com/ngm/antarctica>

## INTERACTIVES

- [www.discoveringantarctica.org.uk/resources.php?media=interactives&page\\_name=home&#interactives](http://www.discoveringantarctica.org.uk/resources.php?media=interactives&page_name=home&#interactives)

# LEADERSHIP IN ACTION

Antarctica is a place of peace and conservation. We don't know how long it will last as the world's resources deplete. In the future, countries may demand the right to mine for oil or fish in Antarctic waters. It is your challenge to take action with your new knowledge about Antarctica and involve your local community along the way.

*The hardest part of any project is to begin.  
We have begun. We are under way.  
We have a passion.  
We want to make a difference.  
We hope that you and as many of your friends as possible will join in.*

- Sir Peter Blake

### Find out what is the most pressing concern in your area:

- \* Do your local businesses use plastic bags? Do they know plastic does not biodegrade and is an environmental hazard?
  - Invite a business representative to your class for a discussion on plastics. Present some alternatives to the representative and find out if there is the opportunity to enhance processes or bring about change within their organisation. Invite more than one business at the same time to capture a wider audience and generate creative solutions between businesses.
- \* Are there litter bugs who walk or drive past your school?
  - Find out your Council's policy for waste and whether they are assisting to prevent poor rubbish disposal in the area. Take action with an advertising campaign to educate others - with stickers, posters and fliers. Place materials in prominent places. Paint around your drains about only draining storm water.
- \* Is your school doing its best to be sustainable? Are you working towards zero waste, conserving energy and conserving water? Help your school become more sustainable. [www.sustainability.govt.nz](http://www.sustainability.govt.nz). Become an Enviroschool: <http://enviroschools.org.nz/>
- \* Is your local creek, river, park or beach polluted? Complete a coastal clean-up (details can be found under the Care for our Coast programme at [www.sirpeterblaketrust.org](http://www.sirpeterblaketrust.org)), and encourage people from the community to help out. Sort the materials and

investigate where the rubbish came from to inform businesses where their packaging is ending up. Approach the businesses with some creative solutions to minimise the amount of waste ending up in public places.

## STEPS FOR ACTION PLANNING

1. Identify the issue - students make a decision about their focus topic for taking action.
2. Clarify the issue by assessing the current situation.
3. Develop a vision for the issue students wish to tackle.
4. Explore possible solutions - identifying barriers and benefits.
5. Plan the action.
6. Take action.

Students can talk to community members about what they would like to achieve and check whether this is aligned with what the community would like to see. Is there a way both students and the rest of the community can work collaboratively to solve the problem?

7. Students reflect on their actions - has the issue been solved, or is more action required? Return to the vision. Make sure each success is celebrated along the way.

A great example of action planning can be found on: [http://www.nrc.govt.nz/For-Schools/Environmental-education-events/Youth Summit action plans](http://www.nrc.govt.nz/For-Schools/Environmental-education-events/Youth_Summit_action_plans).

Students keep a journal during the process, filling in the 'So What, Now What?' process.

On completion, students self evaluate their input and reflect on the success of the project, also noting what they have learnt on the journey.

'So what, now what' Action Planner		
Decision	Action	Reflection

# EXPERIENCE: CLEAN UP OUR COAST CHALLENGE

New Zealand is a collection of islands so it goes without saying that the health of our oceans, our land and our people are closely linked. Our coastline alone is about 15,000km long (the distance from Wellington to New York) and is one of the longest in the world!

It is not surprising then that most New Zealanders live within an hour's drive of the sea. The ocean is a large part of our culture, our recreation, our sporting success, our tourism, our industry and even our national identity.

There is no doubt that New Zealanders would benefit greatly from being involved in caring for our coastline. The quality of our waterways really does affect the quality of our life, or as Sir Peter Blake once said:

**“Good water, good life. Poor water, poor life. No water, no life.”**

In keeping with Sir Peter Blake's desire to encourage people to care for our waters, the Sir Peter Blake Trust has created a 'Clean up our Coast' kit. This programme contributes to the conservation of some of our country's greatest natural assets - our seas, coasts and waterways.

Now that your school has participated in the 'Care for our Coast Antarctica' unit, you'll want to take it one step further and participate in the 'Clean up our Coast' Challenge. Many schools are already cleaning beaches in their area and with other volunteer groups around the country, they have picked up thousands of pieces of marine debris!

Make this a regular event and 'adopt' your local coastal area, whether this is a lake edge, river mouth, estuary or beach. Monitor your chosen area by undertaking ongoing clean-ups, then retain the summary sheets and analyse any changes that occur over time.

**DOWNLOAD THE CLEAN-UP KIT from the Sir Peter Blake Trust website: [www.sirpeterblaketrust.org](http://www.sirpeterblaketrust.org)**

**THE 'CLEAN UP OUR COAST' KIT CONTAINS:**

- Information on what is aquatic debris and why we should be concerned about it
- Information on what we can do to reduce aquatic debris
- Suggestions on how to prepare for a clean-up operation
- Information on different clean-up methods
- Suggestions for sorting collected material
- Survey sheets to be completed

After the clean-up, schools can enter the data on the Trust website to receive their own pie graphs and bar graphs summarising their clean-up. They then send a hard copy of the survey sheet to the Sir Peter Blake Trust, who will validate the results (to be included as part of the nationwide clean-up) and send out a certificate.

The combined information about the types, amounts and locations of rubbish is a powerful tool to encourage companies, organisations and individuals to reduce the amount of litter and debris entering our waterways.

To enter data, gain results and check out other clean-up results, go to: [www.sirpeterblaketrust.org](http://www.sirpeterblaketrust.org)

## CLEAN UP OUR COAST - RESULTS

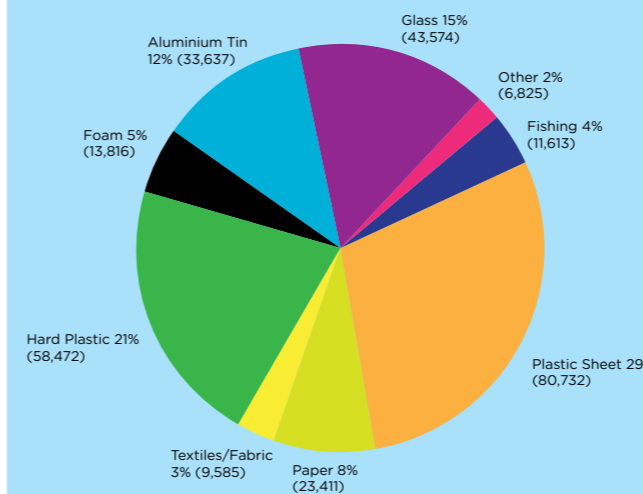
AN EXAMPLE OF CLEAN-UP STATISTICS FROM OUR WEBSITE.

- A total of 414 cleanups have been recorded since August 2004.
- 13,468 people have participated.
- 289,264 pieces of rubbish have been collected.
- More than 5 million square metres of coastline have been scoured for debris in more than 360 hours of clearing.



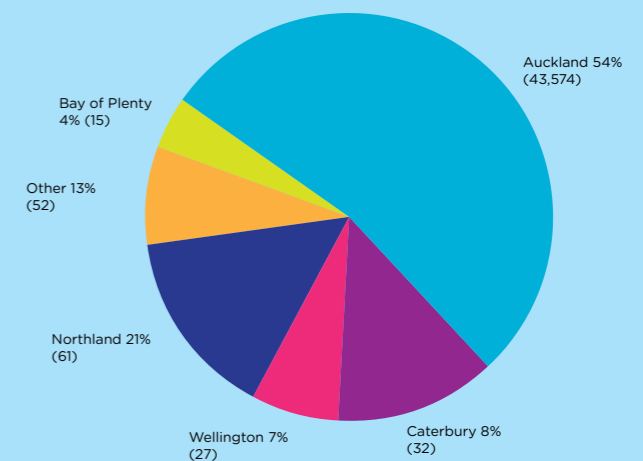
### WHAT KIND OF RUBBISH HAS BEEN FOUND?

Showing the averaged percentages and total number of items, including fragments, collected in the nationwide clean-ups.



### REGIONAL REPRESENTATION

Showing the percentages of clean-ups completed by each region and the total number per region.





# CELEBRATE: WITH YOUR OWN RED SOCKS DAY

**Sir Peter Blake liked to wear his red socks for good luck.**

During the America's Cup Challenge in 1995, New Zealanders supported the boat by putting on their lucky red socks.

The Sir Peter Blake Trust is encouraging students to celebrate their example of environmental leadership in action by holding a Red Socks Day. This could be any day of the year, but you may wish to join the national Red Socks Day which takes place during New Zealand Leadership Week - please contact us for details.

Students can wear their own pair of lucky red socks or these can be ordered from the Trust.

Socks come in sizes 3-5 and 5-8. Please let us know if you will be collecting donations on your Red Socks Day.

**FOR MORE INFORMATION ON HOLDING A RED SOCKS DAY, CONTACT:**

**Programme Manager**  
**Email: [info@sirpeterblaketrust.org](mailto:info@sirpeterblaketrust.org)**  
**Phone: (09) 307 8875**  
**Fax: (09) 309 3350**

Please allow at least two weeks to order your official socks and pins.



Students from Menzies College wearing the socks of a leader. Photo: Southland Times

## REGISTER: YOUR OWN RED SOCKS DAY

### RED SOCKS DAY REGISTRATION FORM - FAX TO (09) 309 3350

School	
Physical Address	
Postal Address	
Contact Name	
Email	
Phone	
Our school is holding a Red Socks Day on:	
We would like to order official Trust socks:	Yes / No
We would like to order official Red Socks Day pins:	Yes / No
We will collect a gold coin donation on Red Socks Day:	Yes / No

Socks come in sizes 3-5 and 5-8. Socks are \$5 per pair. Pins are \$2 each. Please let us know if you will be collecting donations on your Red Socks Day.

**Fax to: (09) 309 3350**

**FOR MORE INFORMATION ON ORGANISING A RED SOCKS DAY, CONTACT:**

**Programme Manager**  
**Email: [info@sirpeterblaketrust.org](mailto:info@sirpeterblaketrust.org)**  
**Phone: (09) 307 8875**  
**Fax: (09) 309 3350**



Remuera Primary School



Coastal Taranaki School



Rutherford Primary School (PhotoNZ Herald)



Remuera Primary School



Lyall Bay School



Upper Atiamuri School



Strathallan School



Remuera Primary School



Kapanui School



Mangere Central School



Sir Edmund Hillary Collegiate



Rutherford Primary School



Mangere Central School

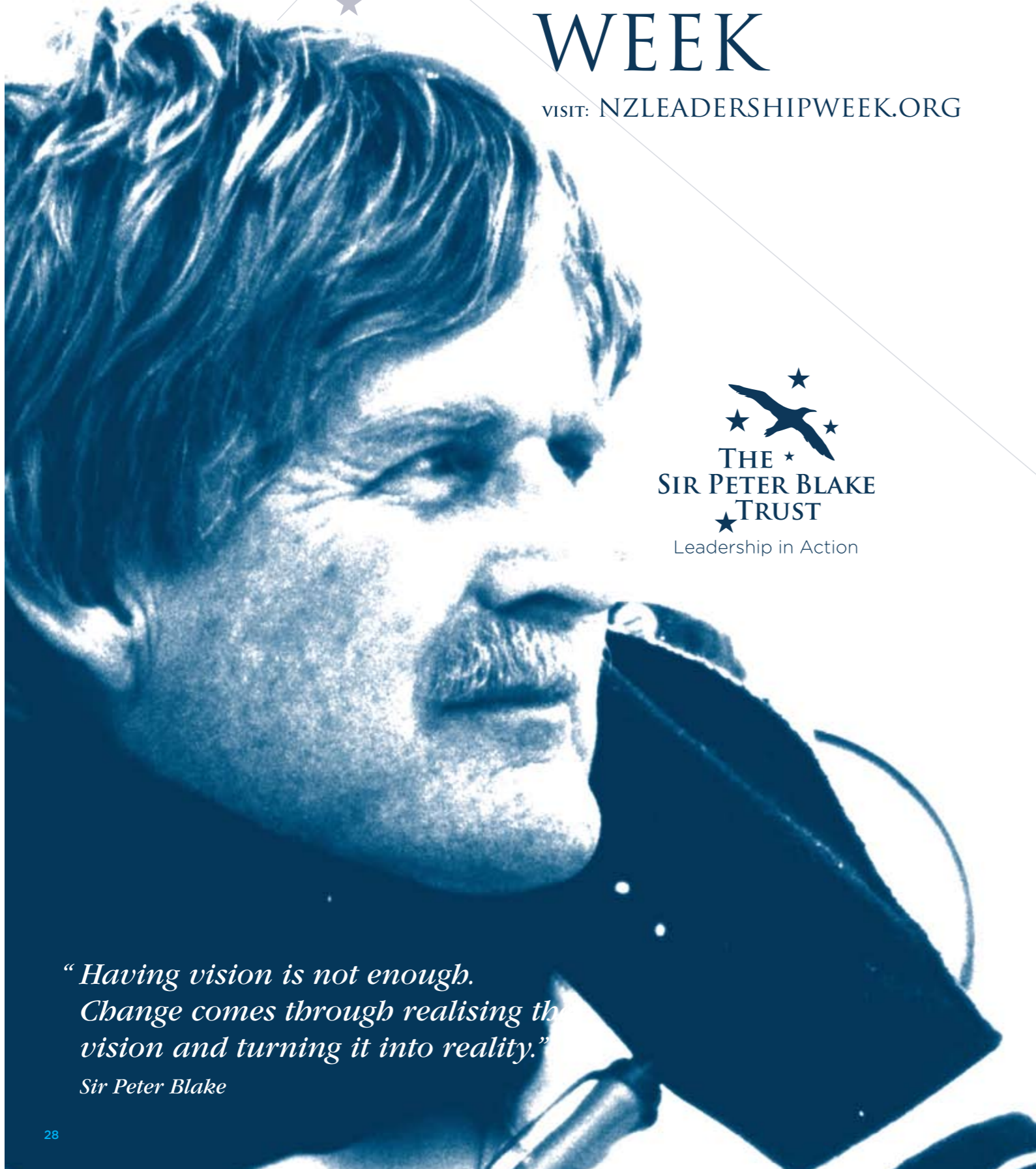


THE SIR PETER BLAKE TRUST  
Leadership in Action

# YEARS 4-8 CARE FOR OUR COAST TEACHERS' RESOURCE

[www.sirpeterblaketrust.org](http://www.sirpeterblaketrust.org)

A programme inspiring an awareness of the marine environment and encouraging greater care for our marine resources. Email the Sir Peter Blake Trust for your copy and help develop our future environmental leaders. [info@sirpeterblaketrust.org](mailto:info@sirpeterblaketrust.org)



# PLAN TO PLAY YOUR PART IN NEW ZEALAND LEADERSHIP WEEK

VISIT: [NZLEADERSHIPWEEK.ORG](http://NZLEADERSHIPWEEK.ORG)



*“Having vision is not enough.  
Change comes through realising the  
vision and turning it into reality.”*

*Sir Peter Blake*

## CARE FOR OUR COAST

# HOW CAN YOUR SCHOOL PLAY ITS PART IN NEW ZEALAND LEADERSHIP WEEK?

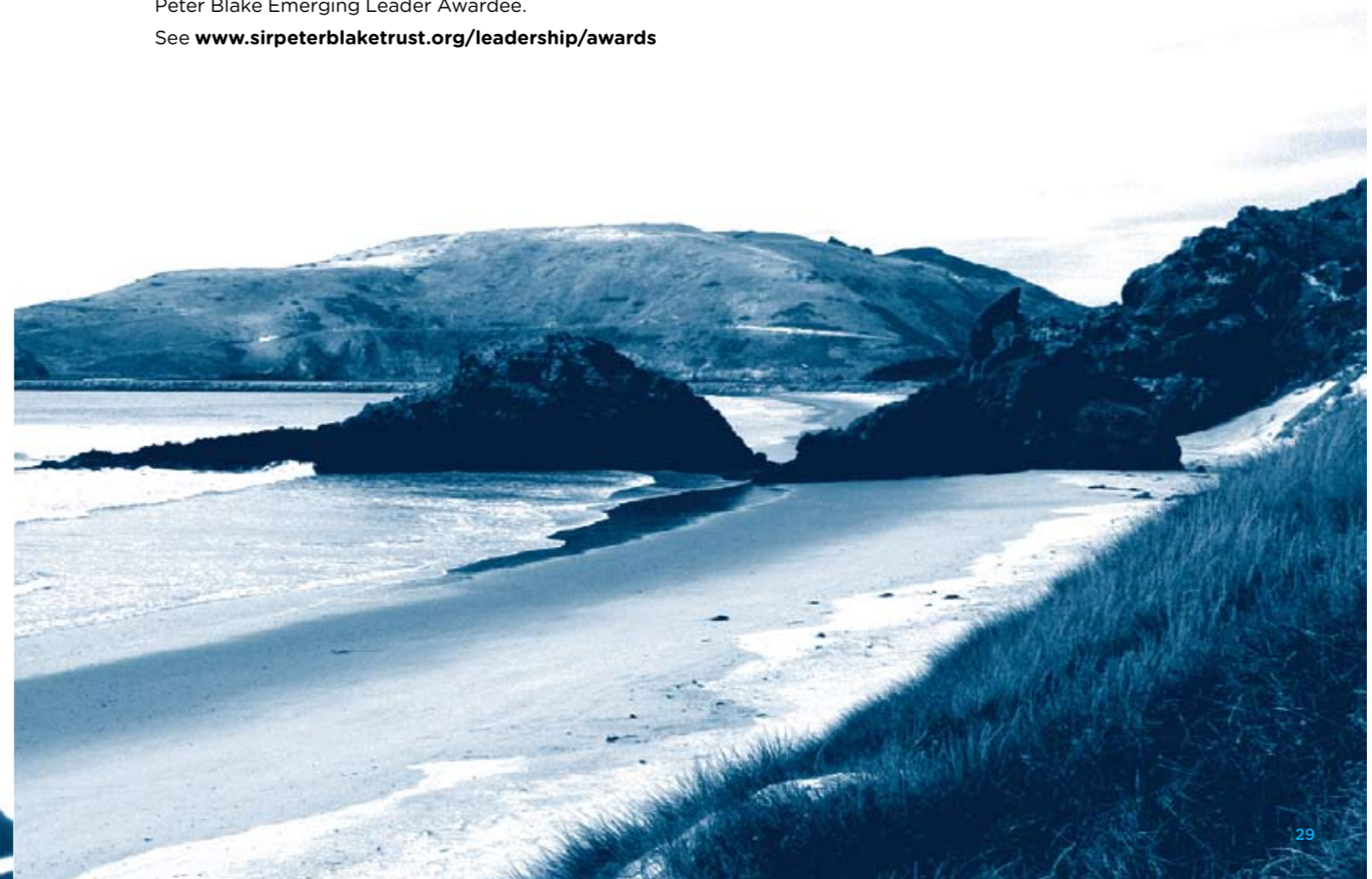
- Invite a significant former pupil, parent or local figure to speak during assembly.
- Ask the head pupils or prefects of your local secondary school to address your school assembly on what being a head boy/girl or prefect is all about and the leadership skills they have acquired.
- Your students can give a presentation on what they have learnt about Sir Peter Blake or about protecting their marine environment from this Care for our Coast Antarctica resource.
- Encourage your students to show their environmental leadership in action by carrying out a coastal clean-up, as discussed in this resource.
- Hold a Red Socks Day and invite your students to celebrate their environmental leadership by “wearing the socks of a leader” – a pair of Sir Peter Blake’s lucky red socks!
- Nominate a member of staff, school alumni or the local community as a Blake Medallist or a Sir Peter Blake Emerging Leader Awardee.  
See [www.sirpeterblaketrust.org/leadership/awards](http://www.sirpeterblaketrust.org/leadership/awards)

## WHAT NEXT?

- Identify a person who could take responsibility for the New Zealand Leadership Week event or activity at your school.
- Put it on the agenda of your next staff meeting.
- Promote the activity in your school newsletter and encourage parents to support and maybe participate.
- Log your activity or event with The Sir Peter Blake Trust and be recognised as part of the national leadership celebration. Your event will be published on our website and your school acknowledged for its focus on leadership development.

## FOR MORE INFORMATION:

**Programme Manager**  
**Email:** [info@sirpeterblaketrust.org](mailto:info@sirpeterblaketrust.org)  
**Phone:** (09) 307 8875  
**Fax:** (09) 309 3350



T: +64 9 307 8875 F: +64 9 309 3350  
E: [info@sirpeterblaketrust.org](mailto:info@sirpeterblaketrust.org)  
W: [sirpeterblaketrust.org](http://sirpeterblaketrust.org)

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FOUNDATION PARTNER



**Supporters:** ASB Community Trust, Chapman Tripp, KPMG, Ministry for the Environment,  
Ministry of Education, Newstalk ZB, NZCT, Sheffield, Shift, Soar Print, Tourism Auckland



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