

E-BOOK CODE:
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Cool Antarctica Activity Book



Image courtesy of NOAA

by Jane Bourke



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Teachers' Notes

The **Activities for Young Learners** series is designed to be used in a number of ways:

1. As a learning centre for the library or general classroom;
2. As a library resource package;
3. As a general activity resource package for a number of themes.

Antarctica – A Rationale For Study

Antarctica is the last untouched frontier on earth. It was the last continent to be explored and is a source of fascination for people from all over the world. Astronomers and scientists have known that Antarctica existed long before anyone actually caught sight of this massive land region. People have been travelling to Antarctica for work purposes for more than fifty years. In that time, there has been great progress made in a number of fields of study. In recent years people have visited Antarctica as tourists and have had the opportunity to view Antarctica while on scenic flights over the massive region of ice and rock.

Antarctica is protected from development and pollution following the joint signing of the Antarctica Treaty. The continent is only allowed to be used for peaceful purposes and is available to many countries as a base for scientific research. The icy continent of Antarctica is living proof of how countries from all over the world can collaborate ideas and share valuable information for the good of the planet. Scientific research carried out on Antarctica has far-reaching implications for the global environment. Global changes in climate and the ozone layer are carefully monitored using advanced technology. Other scientific findings have enabled significant advances in medicine and biology around the world.

The resource book attached to this series is designed to provide a springboard for further research about this amazing continent. Several educational websites have been included throughout that explore particular aspects of the science and wildlife of Antarctica. It is envisaged that students will use the references contained as a starting point to further their knowledge of the Antarctic region and environment, while simultaneously enhancing their creative thinking skills.

Updating of Internet References

It is now common knowledge that Internet sites disappear from time to time or move to new locations. While all of the sites included in this package were accessible at the time of publication, it is anticipated that many sites will move, modify their layout or disappear from the WWW completely.

Ready-Ed Publications endeavours to check all sites on a regular basis and replaces any sites that have moved. In addition, attempts are made to locate missing sites that have relocated to another address. All website references in this series are clearly linked on our website from the home page. Click on "Ready-Ed Kids Book Links" and then follow the link for the **Activities for Young Learners** series. The direct address for this series is:

▶ www.readyed.com.au/urls/AYL/index.htm

Once at the above webpage, students will need to click on the book they are using (e.g. **Cool Antarctica**) and the page number and title. By using this online index page, students do not have to laboriously type in any URLs, greatly reducing the margin for error when trying to locate sites that have long and complicated addresses. The website indexes are clearly set out and easy for students to navigate.

Should a broken link or a link that appears to have modified its layout be discovered, then please email fixlink@readyed.com.au with clear details of the topic and page number. Please note that ALL links that appear in each of the five resource books are included on the above site and are clearly labelled.

Teachers' Notes

About the Activities

The books in this series contain tasks that are divided into two types of activities:

ACTIVITY: These general activity pages require the use of the associated **Wonders of the Rainforest** resource book. The pages have been divided into three sections:

- 1. Just the Facts:** This section allows for quick information retrieval. There is no further research required, and students should be able to gather the information that they need straight from the resource book. Completing this section will provide students with a basic understanding of the concept being explored. Questions are literal and relevant to the topic.
- 2. Creative Corner:** This section requires students to apply their imagination and draw on analytical skills to find responses to the questions posed, based on what they have read. The answers are not in the text and in many cases there will be no right or wrong answers. The objective of these activities is to get students thinking. Sometimes students might be asked to discuss something with a partner. Sometime the questions might involve using another sheet of paper for writing. Children should be encouraged to share their thoughts where possible. These tasks also lend themselves to small group work where students are often more confident in sharing information.
- 3. Think About It:** This section extends on what the children have read in the resource book and thought about in the Creative Corner section. The tasks are usually an opportunity for students to be creative and to put themselves into another role, (e.g. Antarctica adventurer, Antarctic animal). Many of these activities can be done as homework or can be completed in spare time.

CYBER CHALLENGE: These activities require an Internet connection. The sites are easily accessible by first going through the Ready-Ed website (www.readyed.com.au/urls/AYL) and onto the index page for the **Cool Antarctica** link. Bookmark this page for ease of use.

Students should be given ample opportunity to explore the website before starting the activity. Most tasks will require basic research skills and students should be proficient in navigating websites. The activities have a varied format and students will find they may have to complete tables using information at the site or they may have to write about something that the site focuses on (e.g. a species of plant or animal). Sometimes the site is used merely as a springboard for ideas for the student.

Curriculum Links

The activities in this series explore high interest themes across core subject areas such as Society and Environment, Technology, Science and English. The themes provide a backdrop for creative thinking strategies and different learning styles.

A table containing relevant learning outcomes is included on page 4. This information allows teachers to measure students' learning according to the subject area and particular strand. It is up to the teacher to see exactly how this fits into their local curriculum documents. All information in this book has been matched to the National Curriculum Framework.

Assessment

Detailed notes and assessment proformas have been included at the end of the activities. (See page 50-53.)

Teachers' Notes

Promoting Creative Thinking

The following creative thinking strategies are used in this book:

Forced Analogies

- The idea is to compare the problem with something else that has little or nothing in common, and gaining new insights as a result.
- Thinking about the effects of a highly unlikely situation.

Lateral Thinking

- Looking at the problem in a different way, e.g. Aunty Annie is sitting knitting and three year old Jacob is upsetting her by playing with the wool. One parent suggests putting Jacob into the playpen. The other parent suggests it might be a better idea to put Annie in the playpen to protect her from Jacob.

Applied Imagination

- Use of prompting questions to elicit new ideas.
- How could I adapt this? Modify, magnify, minimise, reverse, substitute, rearrange, combine and so on. The line of questioning needs to be specific to the topic.

Problem Reversal

- State the problem in reverse. Change a positive statement into a negative one.
- Try to define what something is NOT.
- Figure out what everybody else is not doing.
- Change the direction or location of your perspective.
- Flip-flop results – think about achieving the opposite of what you want to achieve, e.g. "I want to increase my fitness. But how could I decrease my fitness?" Think about decreasing sales, failing a test, etc.
- Turn defeat into victory or victory into defeat, e.g. if I was stranded on the moon after a space shuttle problem, what good would come out of it? I might end up travelling through a worm-hole to another dimension.

If I failed a maths test, what good would come out of it? I might focus on doing twice as well in my spelling test. Or I might start going to homework classes and meet new friends, and so on.

Brainstorms

- Brainstorms, particularly when done with a partner or small group, are an excellent method for exploring creative thinking. They can also lead on to mind-mapping®. Tony Buzan (www.buzan.com.au) pioneered the concept in 1970. The technique is an effective method of note-taking and useful for the generation of ideas by associations. Basically, the student starts in the centre of the page with the main idea, and works outward in all directions, producing a growing and organised structure composed of key words and key images, similar to a brainstorm but with more meaning. It can be done with students of all ages.

Mind-maps can use imagery, colour and direction to illustrate a concept. Emotions and feelings about the particular theme can be given as well.

For more information on mind-mapping, check out this website:

www.mind-mapping.co.uk/mind-maps-examples.htm

Other Titles in this Series:

• Wonders of the Rainforest • Oceans Alive • World Cultures • Endangered Animals

The Icy Continent

Activity

Read

Read about Antarctica – The Last Land in the Cool Antarctica resource book to help you complete the following.

► Just The Facts

1. By what name was Antarctica known around 2000 years ago?

T _____

2. What does this phrase mean?

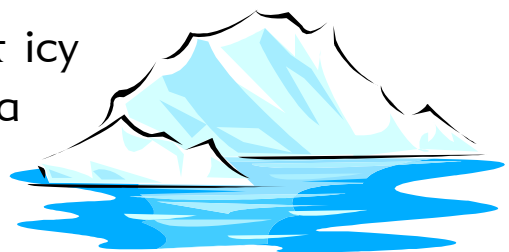
3. What does the name "Antarctica" mean?

► Creative Corner

Antarctica is the last of the earth's continents to be explored by humans. Do you think there could be land somewhere on our planet that has not yet been discovered? Explain why or why not.

► Think About It: Ice World

What if the earth contained nothing but icy land? Imagine if the middle of Australia contained icy flats rather than a hot and dry outback.



Do you think humans could survive in this environment? Would there be a variety of plants and animals?

TASK: On another sheet of paper, write about what you think an ice world would be like.

Discovering Antarctica



You will need access to the Internet or the Cool Antarctica resource book to complete this activity.

Go to ► www.readyed.com.au/urls/AYL/antarctica.htm and click on the website for Page 11.

More than 230 years ago, many explorers went to the southern part of the world in the hope of finding land. Read about some of these amazing explorers at the website.

► New Technology

When Antarctica was first discovered there were no telephones, no computers, no mobile phones, no ipods, no film or video recorders and no vehicles to drive around the continent.

Look at the table below. Add **four** more things (mod cons) that you think might have been useful around the time of Captain Cook's first journey south in 1772. For each item that you list, explain exactly what it could have been used for. Be as creative as you like.

Item	What it could have been used for
video camera	<i>e.g. Record the moment when people first stepped onto land. Record the first sighting of land.</i>
microwave	<i>e.g. To warm up a hearty lunch for the crew.</i>

- Check out Antarctica from Space at **Site 2**.