

**Lesson Plan for *Antarctica Independent Research Project***  
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*“...the desire for knowledge for its own sake is the one which really counts and there is no field for the collection of knowledge which at the present time can be compared to the Antarctic.”*

- Apsley Cherry-Garrard

**Grades:** 4-7

**Overview:** This independent research project allows students freedom to study a particular Antarctic topic that interests them. It is designed as a culminating activity. Students are provided with the opportunity to demonstrate their understanding of a concept through creation of a project of their own choosing. This is a unique opportunity to research and create a product with more depth than breadth. Encourage students to create a project that utilizes their strength. Projects may include (but are not limited to): PowerPoint presentations, dioramas, poems, photographs, posters, newspapers, scrapbooks, book reports, written reports, travel brochures, travel journals, plays, games, demonstrations, models, drawings or paintings, debates, simulations, science experiments, cartoon books, video taped television news broadcasts ...the list is endless.

*\*My students participated in this open-ended assignment last year and produced some of the most amazing projects. They frequently commented that they particularly liked the freedom to choose their project and topics.*

### Ohio Science Content Benchmarks

#### Grades 6-8: Scientific Ways of Knowing

Benchmark A: Use skills of scientific inquiry processes (e.g., hypothesis, record keeping, description and explanation).

### Ohio Math Content Benchmarks

#### Grades 3-4: Data Analysis and Probability Standard

1. Collect and organize data from an experiment, such as recording and classifying observations or measurements, in response to a question posed.

#### Grades 5-7: Data Analysis

4. Determine appropriate data to be collected to answer questions posed by students or teacher, collect and display data, and clearly communicate findings.

### Ohio Technology Benchmarks

Benchmark A: Communicate information technologically and incorporate principals of design into creation of messages and communication products

Benchmark B: Develop, publish and present information in format that is appropriate for content and audience.

#### Grade 6: Publication

1. Create and publish information in printed form (e.g., use software to produce homework assignments, reports, flyers, newsletters).
2. Develop and publish information in electronic form (e.g., slide presentations, multimedia products, Web materials).

### Grade 7: Productivity Tools

1. Select an appropriate software tool to create and publish print information (e.g., word processor for a report, desktop publishing tool for signs/calendars/newsletters).

### Ohio Reading Benchmarks

#### Grades 4-7: Informational, Technological and Persuasive Text Standard

- A. Analyze the importance of setting
- E. Demonstrate comprehension by inferring themes, patterns, and symbols

### Ohio Social Studies Benchmarks

#### Grades 6-8: Geography

- Explain how the environment influences the way people live in different places and the consequences of modifying the environment.

#### Grades 3-5: Social Studies Skills and Methods

- Use problem-solving skills to make decisions individually and in groups.

#### **Materials:**

- Computers with Internet connectivity
- Student supplied materials for project

#### **Procedure:**

As a culminating activity to demonstrate student understanding:

1. Provide students with the student worksheet, review procedures, and instructions.
2. Allow students at least one class period for research and topic selection.
3. Discourage purchasing of materials as most projects can be created using recycled materials and materials commonly found around school and home.
4. Projects can be presented to classmates or displayed in school halls.
5. Assessment using rubric provided.

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Name \_\_\_\_\_

## Antarctica Project

### A cool independent learning experience

This project will demonstrate your understanding of a specific science topic by creating a project of your own choosing. This is a unique opportunity to research and create a product with more depth than breadth, meaning you can dig deeper into a topic that interests you. Create a project that uses your strengths. Be prepared to share your project with your classmates.

Begin by researching possible topics (this is an idea fishing trip):

1. Go to at least 5 different websites and look for information on your topic.
2. Open a new Word document.
3. Cut and paste the web address to a Word document.
4. Cut and paste some facts that you found under each web address. \*\*\*The facts should be only 1 sentence long. \*\*\*

See example below:

- Begin by going to this website:

<http://www.units.muohio.edu/cryolab/education/antarctic.htm>

- Try some of the links and see if there is any information about your topic. Then use search engines like Yahoo!igans, Ask Jeeves, or Google to find information you can use for your project.
- Then create a document that looks sort of like this

Your name      Topic Idea #1 = icebergs      Project Idea #1 = PowerPoint

<http://nsidc.org/icebergs/>

Icebergs form when ice from large glaciers flows into the ocean and breaks into floating blocks. Most icebergs form in Alaska, Greenland, and Antarctica.

<http://www.theice.org/RISiceberg.html>

In March 2000, a very large iceberg broke away from the Ross Ice Shelf. This berg is estimated to be 25 miles wide and 170 miles long, making it nearly as big as the state of Connecticut!

The next step is to get teacher approval for your topic and project.

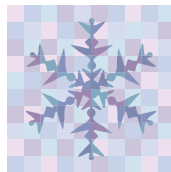
Projects may include (but are not limited to):

- PowerPoint presentations
  - dioramas
  - poetry collection
  - photograph
  - poster
  - newspaper
  - scrapbook
  - book report
  - 
  - written report
  - travel brochure
  - travel journal
  - play
  - game
  - demonstration
  - model
  - drawing or painting
  - debate
  - simulation
  - science experiment
  - cartoon book
  - video taped television news broadcast
  - timeline
- ...the list is endless.

Possible Antarctica Topics:

Do NOT limit yourself to these ideas! Follow what interests you!

- Penguins
- Geography of Antarctica
- Ozone layer changes
- Climate changes
- Global fishing industry and Antarctica
- Plants and animals of Antarctica
- Plant and animal adaptations
- Icebergs
- Insects of Antarctica
- Explorers, past and present
- Antarctic food webs
- Careers of Antarctic research scientists
- Compare/contrast the North and South Poles
- Polar books
- UV changes
- Marine life of Antarctic waters
- Why is the Drake Passage so rough?
- Time zones
- Glaciers
- Reasons for the seasons
- Daylight vs. Darkness



Get the idea? Got a great idea?

Enjoy and have fun with this project! Please get teacher approval for your topic and project.





Student Name \_\_\_\_\_

Project Title \_\_\_\_\_

### Antarctica Project Rubric

This rubric should be completed *by the student* upon project completion.

Student must complete the rubric with a **blue** pen. The teacher will use a different color.

Process	Unsatisfactory	Satisfactory	Excellent
Has clear vision of final project	1, 2, 3	4, 5, 6, 7	8, 9, 10
Managed time wisely	1, 2, 3	4, 5, 6, 7	8, 9, 10
Acquired needed knowledge base through thorough research	1, 2, 3	4, 5, 6, 7	8, 9, 10
<b>Product/Project</b>			
Format/ Neatness	1, 2, 3	4, 5, 6, 7	8, 9, 10
Mechanics of presentation	1, 2, 3	4, 5, 6, 7	8, 9, 10
Organization/Flow	1, 2, 3	4, 5, 6, 7	8, 9, 10
Creativity	1, 2, 3	4, 5, 6, 7	8, 9, 10
Demonstrates Acquired Knowledge	1,2,3,4,5,6,7,8,9,10	12,14,16,18,20	22,24,26,28,30
<b>Total Score</b>			<b>/100</b>

Excellent - of highest quality. Student has reached above and beyond average expectations and quality.

Satisfactory - student has met requirements but could use some improvement in some areas.

Unsatisfactory - improvement needed in many areas.