A Polar Expedition for Information

Lesson Overview:
A scavenger hunt for information takes place in the Polar Regions with specific emphasis on the Canadian Arctic

Grade Level: Grade 10

Time Required: One 60 minute class

Curriculum Connection:
Yukon, Social Studies 10 – Applications of Social Studies

Links to Canadian National Standards for Geography:

Essential Element #1: The World in Spatial Terms
- Map, globe and atlas use (e.g. observing and analyzing relationship)
- Expanding locational technology (including remote sensing, GPS and GIS)
- Map projections for specific applications
- Location/allocation situations (e.g. the best location for a fast food outlet and the extent of its market area; the best location for a hospital and the area it serves)
- Mental maps and spatial relationships

Essential Element #5: Environment and Society
- Global effects of human modification of the physical environment
- Global effects on the human environment by changes in the physical environment
- Impacts of major natural hazards/disasters on humans
- World patterns of resource distribution and utilization
- Use and sustainability of resources
- Environmental issues (e.g. global warming, loss of biodiversity, deforestation, ozone depletion, air pollution, water pollution, acid precipitation, disposal of solid waste)

Geographic Skill #2: Acquiring Geographic Information
- Systematically locate and gather geographic information from a variety of primary and secondary sources.
- Systematically assess the value and use of geographic information.

Geographic Skill #4: Analyzing Geographic Information
- Use quantitative methods of analysis to interpret geographic information.
- Make inferences and draw conclusions from maps and other geographic representations.
Use the processes of analysis, synthesis, evaluation and explanation to interpret geographic information from a variety of sources.

Geography Skill #5: Answering Geographic Questions
- Formulate valid generalizations from the results of various kinds of geographic inquiry.
- Evaluate the answers to geographic questions.
- Apply geographic models, generalizations and theories to the analysis, interpretation and presentation of geographic information.

Link to the Canadian Atlas Online (CAOL)
www.canadiangeographic.ca/atlas/

Additional Resources, Materials, and Equipment Required:
- Student activity sheet and answer sheet (attached)
- Maps from the Atlas of Canada website (atlas.nrcan.gc.ca)
- Explore Our Maps
  - Reference Maps
  - International
  - Antarctica and North Circumpolar Region

Main Objective:
Students will gain a better understanding of the complexity of the polar regions through this scavenger hunt with a specific focus on Canada’s Arctic region.

Learning Outcomes: By the end of the lesson, students will be able to:
- compare the land in the Arctic to the Antarctic
- identify the issues facing the people who live in the north
- assess the impacts of climate change on polar regions
# The Lesson:

<table>
<thead>
<tr>
<th>Teacher Activity</th>
<th>Student Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduction</strong></td>
<td></td>
</tr>
<tr>
<td>Lead a discussion of what students know of the polar regions of the world.</td>
<td>Add to list of information about polar regions.</td>
</tr>
<tr>
<td>Hand out maps of Antarctica and the North Circumpolar Region or have students access them online through the Atlas of Canada website as listed in the Additional Resources section.</td>
<td></td>
</tr>
</tbody>
</table>

| **Lesson Development** | |
| Instruct students to access the Canadian Geographic Atlas Online and complete the student worksheet. | Complete the student worksheet. |

| **Conclusion** | |
| Discussion of the overall findings in the scavenger hunt may occur prior to assigning the students the final summary writing task. | Complete the paragraph to be handed in for evaluation. |
| Collect the paragraphs. | |

**Lesson Extension:**
Students may research the landscape and climate of Antarctica in order to complete a comparison paragraph for this region.

**Assessment of Student Learning:**
Paragraphs may be collected to evaluate the content and ability to synthesize the information.

**Further Reading**
Canadian Polar Commission ([www.polarcom.gc.ca](http://www.polarcom.gc.ca))
International Polar Year ([www.ipy.org](http://www.ipy.org))
Student Worksheets

A Polar Expedition for Information
Activity Sheet

Follow the clues to find nuggets of information! Complete the answer sheet as you travel.

Start your journey by looking at the map of Antarctica. Using the linear scale on the map, measure the approximate distance across Antarctica ____ (1) ___. Find the highest elevation on the map and name it ____ (2) ___. Now turn to the North Circumpolar Region map. Name the two largest countries (by area) that occupy this region ____ (3) ___. Using the linear scale on the map, measure the approximate shortest distance between these two countries if you go through the labelled North Pole ____ (4) ____.

Now it’s time to learn more about this region in Canada.

Go to the Canadian Geographic Online Atlas website (http://www.canadiangeographic.ca/atlas/intro.aspx?lang=En ). On the left side, click on

- Explore by theme - The land - Extremes of weather – Basics – Climate zones

Climate
The polar region is represented by the community of ____ (5) ___. Clicking on this community reveals a maximum temperature of ____ (6) ____ and a minimum temperature of ____ (7) ___. Most of the precipitation falls in the ____ (8) ____ season. This must be why some people refer to areas of the Arctic as a cold desert. Where are the extremes? Click on Phenomena and Weather records. List the records that have been set in what you consider polar locations ____ (9) ____.

On the left, click on The land – Canada’s many faces – Land forms – Arctic lands

Physical Landscape
Choose two words to describe the landscape that you are seeing in the video clip ____ (10) _____. Did you know there were mountains in the Arctic? The highest peak on Ellesmere Island is ____ (11) ____. How does this compare to the highest elevation that you noted on Antarctica ____ (12) ____?

On the left, click on The people – First Peoples

The Inhabitants
Canada’s newest territory is Nunavut and it is the first legislature ____ (13) ____. This was a treaty settlement created in 1999. Select Cultures and Arctic. Name two sources of food that were important for the Inuit people ____ (14) ____. There are many issues facing the people of the northern regions. Select Issues – Growing populations. The average age for the population in Nunavut is ____ (15) ____. How does this compare to the Canadian average ____ (16) ____?

Another issue is climate change. On the left, select The issues – Climate change – Changing landscapes – North.

Climate change
Read the section on the North and note the effects of climate change on northern regions in the box on the answer sheet.

Hypothesize some of the effects of climate change on the Antarctic region.

Final Summary
Based on the information that you have collected in the scavenger hunt, write one paragraph to describe the Arctic region of Canada.