Learning Objectives
Students will...
- Recognize geographical location as a key factor in understanding the importance of Arctic sovereignty issues.
- Identify the natural and human geographical features of the Arctic on various maps.
- Determine how the cartographer defines Arctic sovereignty by what is shown or missing from the map. (i.e. what information has been selected or omitted.)

Time required
60-90 minutes

Suggested Grade level
Secondary (Grades 9-12)

Materials
- Passage from *Polar Imperative* (Appendix A)
- Blank Circumpolar Map
- Labelled Circumpolar Map
- Arctic Issues Maps
  - Indigenous Arctic Peoples
  - Potential New Shipping Routes (may be combined with sea ice map)
  - Resources of the Arctic
  - Sea Ice Change in the Arctic
  - Stakeholders of the Arctic
- Analyzing Spatial Information organizer (Appendix B)

Set-up
This lesson can be used as a stand-alone introduction to the Arctic and Arctic sovereignty issues. It also provides a strong foundation for completing the subsequent lessons as a comprehensive unit of study on Arctic sovereignty, inspired by Shelagh Grant’s prize winning text, entitled *Polar Imperative*. Each of the subsequent lessons refers to one of these maps to show the inherent connection between spatial information and Arctic issues and promotes geographical thinking in

Introduction
Assess and activate prior knowledge about the Arctic.

Suggested activity:
Project a blank Circumpolar Map for the class to view. Ask students if they recognize features of the map. For example, can they identify the landmasses, oceans, boundaries? Some students may be quite familiar with this type of map projection and region of the world while others will not. Help them identify the boundary between Arctic and Subarctic regions, refer to the treeline definition of the Arctic as stated in *Polar Imperative*, by Grant (Refer to the labelled Circumpolar map and Glossary as required). Introduce the term ‘sovereignty’ and how it relates to the Arctic.

Development
Activity: Inferring cartographers’ sense of importance (inspired by *Teaching about Geographical Thinking*, 2008, p.21)

Inform students that they are going to collect and analyze more information about the Arctic using maps. Divide students into small groups. Provide each group with one of the specialized maps on an Arctic issue and an Analyzing Spatial Information organizer. Ask students to list the important features represented on the map and identify the factors that make these features important (examples are provided). Direct students to record their findings in the organizer. Analyze the results to identify the cartographer’s criteria for assigning geographical importance in the specific area.

Conclusion
Class discussion:
Evaluate the spatial information contained in the maps. Ask students to share their findings and identify information that has been omitted from the maps. Speculate as to the reasons why.

Extend your geographic thinking
Portals to Geographical Thinking: Geographical Importance

- Refer to Charles Gritzner’s definition of geography: “What is where, why there, and why care?” Ask students to synthesize the information gleaned from the previous activity to answer this geographical question.
- Use this lesson as a launching point to learn more about specific issues related to Arctic sovereignty. Subsequent lesson topics include: the Northwest Passage and National Identity, Arctic Indigenous Peoples, Resource Development, Climate Change and an Arctic Council Simulation.

.../continued
Appendix A: Passage from *Polar Imperative*

For the most part, major Canadian studies on Arctic sovereignty have tended to focus on legal interpretations and potential challenges, but with only a cursory review of circumpolar history. *Polar Imperative* takes a much different approach, initially by narrowing the parameters of the study to exclude the Subarctic, then adopting a comparative platform to broaden the scope by encompassing all of the North American Arctic, including Alaska and Greenland, and finally by extending back over thousands of years to identify circumstances and events that influenced changes in occupation or authority. Where pertinent, the inquiry touches on parallel situations in the European and Russian Arctic to establish a global context for changes taking place. Only through understanding the history of all three Arctic countries can we fully comprehend the implications of the current situation (Grant, 2010, x-xi).

Most histories of the Canadian Arctic start with the British Admiralty expeditions, creating essentially a British/Canadian history with perceived American challenges arising before and after the turn of the twentieth century. By comparison, *Polar Imperative* travels further back in time, beginning long before humans roamed the planet to show how climate change affected Arctic plant and animal life 20 million years ago, then forward to the present. There is also more emphasis on Inuit history, their arrival in North America, their life in the colonial period, then bringing the story full circle to their success in regaining greater control over their homelands.

Hopefully the passage of time will have made it (*Polar Imperative*) even more valuable in understanding the historical context and patterns of continuity that lie behind current sovereignty issues in the North American Arctic (Grant, 2010, xiii).
Mapping the Arctic: An Introduction to Arctic Issues

Blank Circumpolar Map

© 2002. Her Majesty the Queen in Right of Canada, Natural Resources Canada. / Sa Majesté la Reine du chef du Canada, Ressources naturelles Canada.
Indigenous Arctic Peoples

Indigenous peoples of the Arctic countries

Subdivision according to language families

- Na’Dene family
  - Athabaskan branch
  - Eyak branch
  - Tlingit branch
  - Haida branch
- Penutian family
- Macro-Algonkian family
  - Algonkian branch
  - Wakashan branch
  - Salish branch
- Macro-Siouan family
  - Sioux branch
  - Iroquois branch
- Indo-European family
  - Germanic branch
- Eskimo-Alutai family
  - Inuit group of Eskimo branch
  - Yupik group of Eskimo branch
  - Aleut group
- Uralic-Yukaghir family
  - Finno-Ugric branch
  - Samoyed branch
  - Yukaghir branch
- Uralic family
  - Turkic branch
  - Mongolic branch
  - Tungusic-Manchurian branch
- Chukotko-Kamchatkan family
  - Ket (isolated language)
- Nivkh (isolated language)
- Ainu (isolated language)

Notes:

- For the USA, only peoples in the State of Alaska are shown. For the Russian Federation, only peoples of the North, Siberia and Far East are shown.
- Majority populations of independent states are not shown, not even when they form minorities in adjacent countries (e.g. Finns in Norway).
- Areas show colours according to the original languages of the respective indigenous peoples, even if they do not speak these languages today.
- Overlapping populations are not shown. The map does not claim to show exact boundaries between the individual groups.

In the Russian Federation, indigenous peoples have a special status only when numbering less than 50,000. Names of larger indigenous peoples are written in green.
Mapping the Arctic: An Introduction to Arctic Issues

Potential New Shipping Routes

Arctic Shipping Routes
- North-West Passage (NWP)
- Northern Sea Route (NSR)
- Transpolar Sea Route (TSR)
- Arctic Bridge Route (ABR)
Mapping the Arctic: An Introduction to Arctic Issues

Resources in the Arctic

[Map of the Arctic region]
Mapping the Arctic: An Introduction to Arctic Issues

Sea Ice Change in the Arctic
Mapping the Arctic: An Introduction to Arctic Issues

Stakeholders of the Arctic
### Appendix B: Analyzing Spatial Information Organizer

**Map Title:** ________________________________

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<tr>
<th>Natural features</th>
<th>Human features</th>
<th>Significance</th>
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### Helpful Examples

**Natural features include:**
- mountains
- bodies of water
- vegetation

**Human features include:**
- Cities
- political boundaries
- transportation routes

**Types of Significance:**
- Economic influence
- political influence
- environmental uniqueness
- assigned significance (cultural, historical)
- instrumental or strategic value

I think the cartographer chose to map these features because...

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Information that has been omitted from the map

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

I wonder why?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________