The Harvesting Cycle: The Cycle of the Seasons in the Far North

Lesson Overview
Students interpret a Harvesting Cycle wheel and then construct one for their own community, by discussing the changing local conditions in weather and wildlife availability.

Grade Level
Senior high school (Grades 10-12); could be modified for Grade 9 Science (Life and the Environment Strand—Theme #2 Interactions in our Environment; Theme #3 Diversity of Living Things) or Grade 7 Social Studies (The Circumpolar World).

Time Required
Two 60 min. periods, or one double period (plus extra time if extension activities are attempted)

Curriculum Connection (Province and course)
Nunavut – Inuuqatigiit Curriculum (Relationship to the Environment: Land, Water, Ice, Caribou, Bears, Seals, Birds, Fish, Fox, Whales), integrated with any of the following:
- Grade 10 Science 15: Unit 1 Basic Ecology
- Grade 10 Northern Studies 15: Module A: History (Our Heritage); Module C: Our World Today (Past and Present)
- Grade 11 Science 25: Unit 1 Non-renewable and Renewable Resources
- Grade 11 Biology 20: Unit 1 (The Biosphere) & Unit 3 (Energy and Matter Exchange in Ecosystems)
- Grade 12 Biology 30: Unit 4 (Change in Populations and Communities)
- Grade 12 Environmental Science 35: Northern Climate; Northern Physical Geography; Northern Ecosystems; Northern Environmental Issues
- Career and Technological Studies (CTS) modules:
  - Wildlife (many connections to introductory, intermediate and advanced level Wildlife modules)
  - Tourism (Tourism Interpretation I and II; Adventure and Ecotourism)

Link to Canadian National Geography Standards

Essential Element #2 (Grades 9 to 12) - Places and Regions
- The importance of places and regions to individual and social identity

Essential Element #3 (Grades 9 to 12) - Physical Systems
- Global ocean and atmospheric systems
- World climate regions
- World patterns of biodiversity

Essential Element #4 (Grades 9 to 12) - Human Systems
- Convergence and divergence of cultures
- Environment and Society
- Use and sustainability of resources
- Environmental issues
Link to Canadian National Geography Standards (cont’d)

Geographic Skills#3 (9-12) - Organizing Geographic Information
- Use a variety of media to develop and organize integrated summaries of geographic information

Geographic Skills#4 (9-12) - Analyzing 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

Geographic Skills#5 (9-12) - Answering Geographic Questions
- Formulate valid generalizations from the results of various kinds of geographic inquiry

The Canadian Atlas

Additional Resources, Materials and Equipment Required
1. Community elders
2. Student hand out: Far North Map from the Atlas (make a copy from the Atlas or download and print from the Atlas website at www.canadiangeographic.ca/atlas.
3. Sample Lancaster Sound Harvesting Cycle wheel (provided)
4. Blank Harvesting Cycle wheel (provided)
5. Overhead projector
6. Acetates of the Far North map (obtained from #2 above)
7. Acetate of the Harvesting Cycle wheel (make from sample provided)
8. Student worksheet (provided)

Main Objective
To identify important wildlife species in Inuit culture and to construct a Harvesting Cycle wheel representative of the students’ own community.

Learning Outcomes
By the end of the lesson, students will be able to:
- Interpret the information presented on the Harvesting Cycle wheel shown on pg 19 of the Atlas
- Identify the conditions that determine the harvesting cycle for any community
- Construct their own Harvesting Cycle wheel for their community
- Present natural histories for 7-8 arctic species
- Articulate the importance of country food to Inuit culture

The Lesson
If multiple copies of the Canadian Atlas are available, have students access the Far North section of the Atlas themselves, either individually or in small groups. If this is not possible, the teacher must photocopy the required pages or visit The Canadian Atlas website at www.canadiangeographic.ca/atlas to download or print the relevant pages.
<table>
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<th><strong>Introduction</strong></th>
<th><strong>Teacher Activity</strong></th>
<th><strong>Student Activity</strong></th>
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<tr>
<td><strong>Guided Discussion:</strong></td>
<td>• What types of animals are hunted regularly by people in this community? Which is your family’s favourite country food? &lt;br&gt;• Record the list of hunted animals on the board.</td>
<td>• Students answer questions as asked and participate as required.</td>
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<tr>
<th><strong>Lesson Development</strong></th>
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<tr>
<td><strong>a) Guided Discussion:</strong></td>
<td>• Which is the best time of year to hunt caribou? Seal? Ptarmigan? Beluga? ... and so on. What determines the “best” time? &lt;br&gt;• Record these ideas randomly on the board.</td>
<td>• Students answer questions as asked and participate as required (students do not write anything down).&lt;br&gt;• Students orient themselves to the Atlas and the information on the Far North thematic pages, specifically pg 19. &lt;br&gt;• Students learn how to read the “wheel”.</td>
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<tr>
<td><strong>b) Guided Discussion:</strong></td>
<td>• Do people in other Nunavut communities hunt the same animals at the same time of year as this community? Ask students to be very specific. Compare to some far away Nunavut communities. &lt;br&gt;• Refer to a map of Nunavut. You may use the map on pg 18 of the Atlas or from the Atlas website. &lt;br&gt;• Have students account for the differences in the timing of the hunt amongst communities. &lt;br&gt;• Project the image of the Harvesting Cycle wheel from <em>The Canadian Atlas</em>, pg 19 for the class to observe. &lt;br&gt;• If there are enough copies of the Atlas, direct students to the image on pg 19. Allow them some time to look at the information on the pages. If there are not enough Atlases, hand out each student a photocopy of the wheel.</td>
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<td><strong>c) Guided Discussion:</strong></td>
<td>• Can someone tell me by reading the “wheel”, what time of year this community hunts walrus? Muskox? What are the environmental conditions near this community during the months of December and January?</td>
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### The Lesson (cont’d)

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| d) Guided Discussion*:
  - Which area of Nunavut do you think is represented by this harvesting wheel?
  - Hand out a copy of the sample Lancaster Sound Harvesting Cycle wheel to each student (provided here). Tell them that they are going to make a similar wheel for their own community, and that to use this one as an example.
  - Divide students into small groups, then hand out copies of the blank Harvesting Cycle wheel provided. Tell them that their wheels must include 7 or 8 of the animals that were identified earlier and listed on the board. They must fill out the outer three circles of the wheel first, after discussing the environmental conditions at varying times of the year. Allow students to work 30 minutes or so.
  - Ask each group to present their completed Harvesting Cycle wheel to the class. Draw names randomly to determine the order of presentations.
  *Elders could be invited into the class to observe/participate in the discussions.
  - Students should eventually be able to deduce that this is from the north Baffin area.
  - Students work together in small groups, yet each student fills out a separate wheel as they participate within their group.
  - Students share their wheel information with their classmates. They may decide to nominate one student to speak for the group. Let the students decide.|

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|                            | Identify differences that arose between groups (in ice conditions of a particular month, for example, or in hunting times of a specific animal) and allow the class time to discuss these differences of opinion.
|                            | Hand out the worksheet provided to each student. Read it over for the class. Ask that it be completed for homework. Tell students it will be taken up during the next class. | Students justify their decisions and make changes to their wheels as needed. |
|                            |                      | If time permits allow students to begin working on the homework questions. |

### Lesson Extension
- Start a "Hinterland Who’s Who" type board in the classroom or within the school, presenting natural history information for each species identified by the students.
• Students could contact the local Hunters and Trappers Association (HTA) to collect quota information for the wildlife species identified, and perhaps compare 2-3 recent years of data for the community.

• Have students research wildlife issues that were key to the Nunavut land-claim agreement.

Assessment of Student Learning

• Question students throughout the lesson to check for understanding.

• Monitor student participation in the class activities, including student discussions.

• Evaluate the neatness and detail of the Harvesting Cycle wheels generated by the students.

• Evaluate the detail and accuracy of the student homework worksheet.

• For testing purposes, a harvesting cycle wheel could be given to students with questions that would determine how well they understand the wheel idea.

Further Reading


• Graves, J. and Ed Hall. Arctic Animals. GNWT, Yellowknife, NT.: 1985.


Student Activity Worksheet:
Harvesting Cycles

1. Look at the Harvesting Cycle wheel for Lancaster Sound, and answer the following questions:
   a. Which species identified on the wheel is hunted year round? What allows this to happen?
      ____________________________________________________________
      ____________________________________________________________
      ____________________________________________________________

   b. Why is the muskox hunted from October to April only?
      ____________________________________________________________
      ____________________________________________________________

   c. Why are narwhal and beluga hunted for a much longer period of time than the other marine
      species represented on the wheel?
      ____________________________________________________________
      ____________________________________________________________

2. Look at the Harvesting Cycle wheel that you developed for your community, and answer the
   following questions:
   a. Are there differences in the types of animals shown on your wheel, compared to the ones shown
      for Lancaster Sound? If so, what are they?
      ____________________________________________________________
      ____________________________________________________________
      ____________________________________________________________

   b. What environmental factors (e.g. climate, habitat, topography) account for the species
      differences between the two locations?
      ____________________________________________________________
      ____________________________________________________________
      ____________________________________________________________
3. Copy the table shown below in your notebooks and list the 7-8 species you identified on your
   Harvesting Cycle wheel down the left-hand side. Then complete the table:

<table>
<thead>
<tr>
<th>Species</th>
<th>Feeds on</th>
<th>Is hunted by...</th>
<th>Habitat description</th>
<th>Time of year hunted by Inuit</th>
<th>Used by Inuit for...</th>
</tr>
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<td></td>
<td></td>
<td>(list natural predators, do not include humans)</td>
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<td></td>
<td>(list uses of the animal, other than as food)</td>
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5. There are no right or wrong answers to the last two questions here. However, really think about the
   questions before writing out your answers. You may even want to ask a family member to help you
   answer them!

   a) What does hunting, fishing and camping truly mean to you and your family?

   ____________________________________________________________________________
   ____________________________________________________________________________
   ____________________________________________________________________________
   ____________________________________________________________________________

   b) What does eating country food mean to you, personally?

   ____________________________________________________________________________
   ____________________________________________________________________________
   ____________________________________________________________________________
   ____________________________________________________________________________
Create a full-page graphic of the Lancaster Sound Harvesting Cycle Wheel
Create a full-page graphic of blank Harvesting Cycle Wheel the students can fill in.