Water: A precious resource

Lesson Overview
In this lesson, students will learn about one of Canada’s most important renewable resources; Water. They will use The Canadian Atlas to complete a fact finder exercise about Canada’s water supply. Next, they will map Canada’s ocean drainage basins and complete an organizer to make connections between water supply, physical geography, industry and population.

Grade Level
Grades 9-12

Time Required
Two 60-minute lessons

Curriculum Connection
Northwest Territories, Social Studies 9

Link to Canadian National Geography Standards
Essential Element #2 (Grades 9-12) – Places and Regions
• Interdependence of places and regions

Essential Element #5 (Grades 9-12) – Environment and Society
• Use and sustainability of resources

Geographic Skill #3 (Grades 9-12) – Organizing geographic information
• Use a variety of media to develop and organize integrated summaries of geographic information.

Geographic Skill #5 (Grades 9-12) – Answering geographic questions
• Formulate valid generalizations from the results of various kinds of geographic inquiry.

The Canadian Atlas
• Students will use information from the thematic spread entitled “Water-Rich Land” on pages 12 & 13 of The Canadian Atlas. You can also use the related pages of The Canadian Atlas website at www.canadiangeographic.ca/atlas.
• Students may refer to other thematic maps from the Atlas to complete Part B of the Student Activity Sheet.

Additional Resources, Materials and Equipment Required
• Water-Rich Land Student Activity Sheet (provided)
• Blank base map of Canada (http://atlas.gc.ca/site/english/maps/reference/outlinecanada/canada02)
• Access to the Internet if students complete the assignment using the on-line Atlas

Main Objective
Students will understand and appreciate the importance of Canada’s fresh water supply as a renewable resource.
**Learning Outcomes**

By the end of the lesson, students will be able to:

- Distinguish between renewable and non-renewable resources.
- Construct a map of Canada's Ocean drainage basins.
- Make connections between natural resources and geographical location, physical features, climate, industry and population.

**The Lesson**

<table>
<thead>
<tr>
<th>Introduction</th>
<th>Teacher Activity</th>
<th>Student Activity</th>
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<tbody>
<tr>
<td></td>
<td>• Start with the question “What is a natural resource?”. Discuss the definition.</td>
<td>• Record the definition of a natural resource into notes.</td>
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<td>• Ask students to brainstorm a list of natural resources on the board.</td>
<td>• Create a list of natural resources from the brainstorming session.</td>
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<td>• Explain that some of these resources are able to replace themselves (renewable), while others can only be used once (non-renewable). (Emphasize that renewable resources have to be managed carefully or they can become non-renewable.)</td>
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<td>• Classify the list of natural resources as renewable or non-renewable resources.</td>
<td>• Classify natural resources as renewable or non-renewable.</td>
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<td></td>
<td>• Explain that the following activity will teach them more about one particular renewable resource; Water.</td>
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<thead>
<tr>
<th>Lesson Development</th>
<th>Teacher Activity</th>
<th>Student Activity</th>
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<tbody>
<tr>
<td></td>
<td>• Distribute the Student Activity Sheets and base maps of Canada.</td>
<td>• Listen to the instructions and ask for clarification if required.</td>
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<td>• Read the instructions from the activity sheet to students.</td>
<td>• Work through the activity sheets.</td>
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<td>• (Students should complete Part A in the first lesson and Part B in the second lesson. Decide in advance if students will work individually or in groups to complete the activity.)</td>
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<td>• Monitor students as they complete the activity.</td>
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<tr>
<th>Conclusion</th>
<th>Teacher Activity</th>
<th>Student Activity</th>
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<tbody>
<tr>
<td></td>
<td>• Collect the activity sheets or have a class discussion/debate based on student findings.</td>
<td>• Hand in the activity sheets or participate in a classroom discussion/debate based on findings.</td>
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**Lesson Extension**

- Assign a research assignment where students compare Canada’s amount and use of fresh water to the United States and the former Soviet Union. (The comparison to the US and FSU is a requirement in the curriculum for this unit.)
- Ask students to research another natural resource and present their findings in a poster or oral presentation.
Assessment of Student Learning
Collect and assess the completed student activity sheets.

Further Reading
Visit the Freshwater Website by Environment Canada at http://www.ec.gc.ca/water/.
Student Activity Sheet
Water: A precious resource

By completing this activity you will understand how our economy and lifestyles are interconnected with the supply of fresh water in Canada.

Part A – Fact Finder
Gather information from pages 12-13 of The Canadian Atlas – Our Nation, Environment and People to find out the facts about water in Canada. (You may use the print or on-line version.)

1. How has an abundant water supply contributed to Canada’s development in the past and in the present?
   
   Past: ______________________________________________________________________
   ______________________________________________________________________
   
   Present: __________________________________________________________________
   ______________________________________________________________________

2. Name some of the potential threats to Canada’s water supply:
   
   ______________________________________________________________________
   ______________________________________________________________________
   ______________________________________________________________________
   ______________________________________________________________________
   ______________________________________________________________________

3. Fill in the blanks with the correct fact:
   
   a) What percentage of the world’s water supply is:
      
      salt water _________ fresh water _________
      
   b) What percentage of the world’s fresh water is:
      
      ice _________ surface water _________ ground water _________

4. a) Rank the top five ways of withdrawing surface water from the least to the greatest amount.

   1. ______________________________________________________________________
4. a) Cont’d

2. __________________________

3. __________________________

4. __________________________

5. __________________________

b) Which one returns the least amount of water to natural sources?

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5. a) How many ocean drainage basins do we have in Canada?

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b) List the ocean drainage basins below.

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6. Create your own map of Canada’s ocean drainage basins using a blank base map of Canada.

- Shade each drainage basin a different colour.
- Label the drainage basins and major rivers on the map.
- Include a title, legend, direction (north arrow), author and date.
### Part B – Making Connections

In point form, complete the organizer below using *The Canadian Atlas – Our Nation, Environment and People*. (You may use the print or online version.) Some of the information can be found in the section “Water-Rich Land”. You may have to use other thematic sections of the atlas to complete some columns of the organizer.

<table>
<thead>
<tr>
<th>Drainage Basin</th>
<th>Location (e.g. coastal, north/south)</th>
<th>Physical features (e.g. prairie, mountainous, lowland)</th>
<th>Climate (e.g. high/low precipitation)</th>
<th>Use of water in Industry (e.g. irrigation, hydroelectric power, etc.)</th>
<th>Population (e.g. high/low population density)</th>
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</thead>
<tbody>
<tr>
<td>Hudson</td>
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<td>Pacific</td>
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<td>Atlantic</td>
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<tr>
<td>Gulf of Mexico</td>
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Making Connections (cont’d)
In your opinion, which region faces the most social and economic challenges to their fresh water supply in the future? Write your response in paragraph format in the space provided below. Use facts from your organizer to support your opinion.

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