

<b>Social Studies 6<sup>th</sup> Grade- Unit 7</b>	
<b>Elaborated Unit Focus</b>	In this unit students will explore the connection between geography and economy. Students will describe the location of major countries and analyze the <b>location's</b> impact on its people. Students will explain how the location and availability of resources affect where people in Canada live and what they trade. A study of environmental issues will allow students to explore the theme of <b>human environmental interaction</b> . Students will examine the history of NAFTA and how it has been replaced by USMCA.
<b>Connection to Connecting Theme/Enduing Understandings</b>	<ul style="list-style-type: none"> <li>• <b>Gain from Trade:</b> The student will understand that parties trade voluntarily when they expect to gain.</li> <li>• <b>Human Environmental Interaction:</b> The student will understand that humans, their society, and the environment affect each other.</li> <li>• <b>Location:</b> The student will understand that location affects a society's economy, culture, and development.</li> <li>• <b>Production, Distribution, Consumption:</b> The student will understand that the production, distribution, and consumption of goods/services produced by the society are affected by the location, customs, beliefs, and laws of the society</li> <li>• <b>Scarcity:</b> The student will understand that scarcity of all resources forces parties to make choices and that these choices always incur a cost.</li> </ul>
<b>GSE for Social Studies (standards and elements)</b>	<p><b>SS6G4 Locate selected features of Canada.</b></p> <ol style="list-style-type: none"> <li>a. Locate on a world and regional political-physical map: the St. Lawrence River, Hudson Bay, Atlantic Ocean, Pacific Ocean, the Great Lakes, Canadian Shield, and Rocky Mountains.</li> <li>b. Locate on a world and regional political-physical map Canada and the province of Quebec.</li> </ol> <p><b>SS6G5 Explain the impact of location, climate, distribution of natural resources, and population distribution on Canada.</b></p> <ol style="list-style-type: none"> <li>a. Describe how Canada's location, climate, and natural resources impact trade and affect where people live.</li> </ol> <p><b>SS6G6 Explain the impact of environmental issues in Canada.</b></p> <ol style="list-style-type: none"> <li>1. Explain the causes and effects of pollution and acid rain in Canada to include the Great Lakes.</li> <li>2. Explain the causes and effects of the extraction of natural resources on the Canadian Shield (e.g., mining and logging).</li> </ol> <p><b>SS6E5 Give examples of how voluntary trade benefits buyers and sellers in Canada.</b></p> <ol style="list-style-type: none"> <li>a. Explain how specialization encourages trade between countries.</li> <li>b. Compare and contrast different types of trade barriers, such as tariffs, quotas, and embargoes.</li> <li>c. Explain why international trade requires a system for exchanging currencies between nations.</li> <li>d. Explain the functions of the North American Free Trade Agreement (NAFTA).</li> </ol> <p><b>SS6E6 Describe factors that influence economic growth and examine their presence or absence in Canada.</b></p> <ol style="list-style-type: none"> <li>d. Describe the role of natural resources in a country's economy.</li> </ol>

<p><b>Connection to Literacy Standards for Social Standards (reading and /or writing)</b></p>	<p><u><b>Reading Skills</b></u>  <b>L6-8RHSS1:</b> Cite specific textual evidence to support analysis of primary and secondary sources.  <b>L6-8RHSS2:</b> Determine the central ideas or information of a primary or secondary source; provide an accurate summary of the source distinct from prior knowledge or opinions.  <b>L6-8RHSS4:</b> Determine the meaning of words and phrases as they are used in a text, including vocabulary specific to domains related to history/social studies.  <b>L6-8RHSS5:</b> Describe how a text presents information (e.g., sequentially, comparatively, causally).  <b>L6-8RHSS7:</b> Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.</p> <p><u><b>Writing Skills</b></u>  <b>L6-8WHST8:</b> Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.  <b>L6-8WHST9:</b> Draw evidence from informational texts to support analysis reflection, and research.</p>
<p><b>Connection to Social Studies Matrices (information processing and/or map and globe skills)</b></p>	<p><u><b>Map and Globe Skills</b></u>  4. compare and contrast the categories of natural, cultural, and political features found on maps   6. use map key/legend to acquire information from historical, physical, political, resource, product, and economic maps  8. draw conclusions and make generalizations based on information from maps  11. compare maps with data sets (charts, tables, graphs) and /or readings to draw conclusions and make generalizations</p> <p><u><b>Information Processing Skills</b></u>  1. compare similarities and differences  3. identify issues and/or problems and alternative solutions  5. identify main idea, detail, sequence of events, and cause and effect in a social studies context  7. interpret timelines, charts, and tables  11 draw conclusions and make generalizations  12. analyze graphs and diagrams  15. determine adequacy and/or relevancy of information  17. interpret political cartoons</p>

<b>Essential Questions and Related Supporting/Guiding Questions</b>	
<p><b>Enduring Understanding</b></p> <ul style="list-style-type: none"> <li>• <i>Location</i></li> </ul>	<p><b>Why does location matter?</b></p> <ol style="list-style-type: none"> <li>1. How does location affect where people live?</li> <li>2. How does location affect trade?</li> <li>3. How does location help or hinder a country’s development?</li> </ol>
<p><b>Enduring Understanding</b></p> <ul style="list-style-type: none"> <li>• <i>Human Environmental Interaction</i></li> </ul>	<p><b>Whose problem is it?</b></p> <ol style="list-style-type: none"> <li>1. How can progress cause problems?</li> <li>2. How does location play a part in environmental issues?</li> <li>3. Why is cooperation needed for solving environmental issues?</li> </ol>
<p><b>Enduring Understanding</b></p> <ul style="list-style-type: none"> <li>• <i>Production, Distribution, Consumption</i></li> <li>• <i>Gain from Trade</i></li> </ul>	<p><b>Do they have what it takes?</b></p> <ol style="list-style-type: none"> <li>1. Why should countries trade?</li> <li>2. How do trade barriers impact a country?</li> <li>3. How do you get what you want?</li> </ol>

## Sample Instructional Activities/Assessments

### Get the Picture! Instagram Posts

1. Label the following physical features on the map. (Appendix A and B)
  - the St. Lawrence River, Hudson Bay, Atlantic Ocean, Pacific Ocean, the Great Lakes, Canadian Shield, and Rocky Mountains
2. Label the provinces of Canada. (Appendix B)
  - **NOTE:** Since the standard only states to locate the map of Canada and province of Quebec, you may choose to have students label all the provinces or have a map with the provinces labeled and have students label Quebec. Be sure to provide students with an explanation of how Quebec has its own distinct culture from its French origins. The following website can provide a short explanation. (Scroll down to the section *Great Changes*) <http://www.quebec-guidetouristique.travel/history.aspx>

#### **Extension Activity:**

(This could be done as a connection to *SS6G5 Explain the impact of location, climate, distribution of natural resources, and population distribution on Canada.*

a. Describe how Canada's location, climate, and natural resources impact trade and affect where people live. A connection of these locations to trade/economy could be used as a preview of SS6G5a.)

1. Assign students a physical feature and the province of Quebec.
2. Using the following websites below, have students complete 3 Instagram posts as if they were visiting the assigned physical feature or province. Each post will include a graphic and a detail or fact about the importance of the feature/province or something that is unique or interesting to know. For example, if a student was assigned Quebec, they could “post” a picture of a stop sign in French and English. The text could explain the reason for this. Also, be sure they include a hashtag for their post. (Appendix C)
  - *St. Lawrence River and Seaway:* <https://www.britannica.com/place/Saint-Lawrence-River> (Scroll down to the Economy section)
  - *Hudson Bay:* <https://frontiersnorth.com/blog/2015/03/5-things-you-didn't-know-about-hudson-bay>, [http://www.newworldencyclopedia.org/entry/Hudson\\_Bay](http://www.newworldencyclopedia.org/entry/Hudson_Bay) (Scroll down to the economy section)
  - *Atlantic Ocean:* <http://gradefive.mrpolsky.com/regionsofcanada/atlantic-region.html> (Scroll down to natural resources)
  - *Pacific Ocean:* <http://www.dfo-mpo.gc.ca/oceans/publications/cos-soc/index-eng.html> (This site provides information about oceans surrounding Canada in general. Information could be used for both the Atlantic and Pacific Oceans. Scroll down to Canada: A Maritime Nation and Ocean Industries)
  - *Great Lakes:* <https://www.epa.gov/greatlakes/great-lakes-facts-and-figures>, <http://www.industryandbusiness.ca/natural-resources/why-the-great-lakes-are-our-most-important-resource>

- *Canadian Shield*: <https://www.thecanadianencyclopedia.ca/en/article/shield> (Scroll down to natural resources)
- *Rocky Mountains*: <https://www.thecanadianencyclopedia.ca/en/article/rocky-mountains> (Scroll down to Economic Importance), <https://www.oddizzi.com/teachers/explore-the-world/physical-features/mountains/mountain-case-study/the-rockies/> , <https://www.nileguide.com/destination/canadian-rockies/overview/local-info>
- *Quebec*: [https://travel.usnews.com/Quebec\\_City\\_Canada/Pictures/](https://travel.usnews.com/Quebec_City_Canada/Pictures/)

**Summary:**

Have students share their work with the class. One way this could be done is divide class into 4 groups, one physical feature/province per group. Students pass their work around the group and give feedback. Give students 7 post-it notes, one for each group member. Post the following feedback stems for students to choose:

1. I like ...
2. A question I have...
3. This reminds me of my physical feature because...

GSE Standards and Elements	<p><b>SS6G4 Locate selected features of Canada.</b></p> <ol style="list-style-type: none"> <li>a. Locate on a world and regional political-physical map: the St. Lawrence River, Hudson Bay, Atlantic Ocean, Pacific Ocean, the Great Lakes, Canadian Shield, and Rocky Mountains.</li> <li>b. Locate on a world and regional political-physical map Canada and the province of Quebec.</li> </ol> <p><b>SS6G5 Explain the impact of location, climate, distribution of natural resources, and population distribution on Canada.</b></p> <ol style="list-style-type: none"> <li>a. Describe how Canada’s location, climate, and natural resources impact trade and affect where people live.</li> </ol>
<b>Literacy Standards</b>	<p><u><b>Reading Skills</b></u></p> <p><b>L6-8RHSS1:</b> Cite specific textual evidence to support analysis of primary and secondary sources.</p> <p><b>L6-8RHSS4:</b> Determine the meaning of words and phrases as they are used in a text, including vocabulary specific to domains related to history/social studies.</p> <p><b>L6-8RHSS7:</b> Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.</p> <p><u><b>Writing Skills</b></u></p> <p><b>L6-8WHST9:</b> Draw evidence from informational texts to support analysis reflection, and research.</p>

<p><b>Connection to Social Studies Matrices (information processing and/or map and globe skills)</b></p>	<p><b><u>Map and Globe Skills</u></b>                      4. compare and contrast the categories of natural, cultural, and political features found on maps                      6. use map key/legend to acquire information from historical, physical, political, resource, product, and economic maps                      8. draw conclusions and make generalizations based on information from maps</p> <p><b><u>Information Processing Skills</u></b>                      1. compare similarities and differences                      11. draw conclusions and make generalizations                      15. determine adequacy and/or relevancy of information</p>
<p><b>Enduring Understanding(s)</b></p>	<ul style="list-style-type: none"> <li>• <b>Location:</b> The student will understand that location affects a society’s economy, culture, and development.</li> </ul>

<http://www.freeworldmaps.net/northamerica/canada/map.html>



<http://columbiacares.me/physical-map-of-us-and-canada/us-and-canada-physical-map-pics-for-alluring-of/>

Appendix A



<http://www.printablemaps.net/north-america-maps/canada-maps/maps/CANADA-provinces.pdf>

Appendix B



Georgia Department of Education

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Get the Picture!  
Instagram Posts



Paste Graphic

Paste Graphic

Paste Graphic

Text

Hashtag

Text

Hashtag

Text

Hashtag

Sample Instructional Activities/Assessments	
Where and Why?	
<p><b>Direction Sheet:</b> Complete direction sheet and maps found in Appendix D</p> <p><b>Students work in pairs to complete the following task.</b></p> <p>You have been asked to compile a set of maps with captions that explain the following statements and population density map.</p> <p><b>Statements:</b></p> <ul style="list-style-type: none"> <li>▪ “Canada’s population is mostly concentrated in a strip of land within 160 km (100 miles) of the border with the United States.”</li> <li>▪ “Canada as a whole has a population density of just 4 people per square kilometers, which makes it the 228th most densely populated country. The population density is among the lowest in the world, mostly because a great deal of the country to the north is virtually uninhabited.”</li> </ul> <p>You have five maps to analyze to provide evidence to explain why people live where they do in Canada. For each map identify the areas where people would live or would not live and provide an explanation for your reason. You may circle areas of the map that you are focusing on and create an information box to explain your choice.</p> <p><b>Summary:</b></p> <p>Have students answer the essential question, Why does location matter?, based on the information they learned from the map activity. They must include how location, climate and natural resources affect where people live. The information can be why there are higher populated areas versus lower populated areas.</p>	
GSE Standards and Elements	<p><b>SS6G5 Explain the impact of location, climate, distribution of natural resources, and population distribution on Canada.</b></p> <p>a. Describe how Canada’s location, climate, and natural resources impact trade and affect where people live.</p>
<b>Literacy Standards</b>	<p><b><u>Reading Skills</u></b></p> <p><b>L6-8RHSS1:</b> Cite specific textual evidence to support analysis of primary and secondary sources.</p> <p><b>L6-8RHSS2:</b> Determine the central ideas or information of a primary or secondary source; provide an accurate summary of the source distinct from prior knowledge or opinions.</p> <p><b>L6-8RHSS7:</b> Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.</p>

<p><b>Connection to Social Studies Matrices (information processing and/or map and globe skills)</b></p>	<p><b><u>Map and Globe Skills</u></b></p> <p>4. compare and contrast the categories of natural, cultural, and political features found on maps          6. use map key/legend to acquire information from historical, physical, political, resource, product, and economic maps          8. draw conclusions and make generalizations based on information from maps</p> <p><b><u>Information Processing Skills</u></b></p> <p>1. compare similarities and differences          11. draw conclusions and make generalizations          15. determine adequacy and/or relevancy of information</p>
<p><b>Enduring Understanding(s)</b></p>	<ul style="list-style-type: none"> <li>• <b>Location:</b> The student will understand that location affects a society’s economy, culture, and development.</li> <li>• <b>Gain from Trade:</b> The student will understand that parties trade voluntarily when they expect to gain.</li> </ul>

**Population Density in Canada**

Appendix D

**Your Task**

You have been asked to compile a set of maps with captions that explain the following statements and population density map. You have five maps to analyze to provide evidence to explain why people live where they do in Canada. For each map identify the areas where people would live or would not live and provide an explanation for your reason. You may circle areas of the map that you are focusing on and create an information box to explain your choice.

**Example**



Not many people will live here because... (Include explanation).

Appendix D

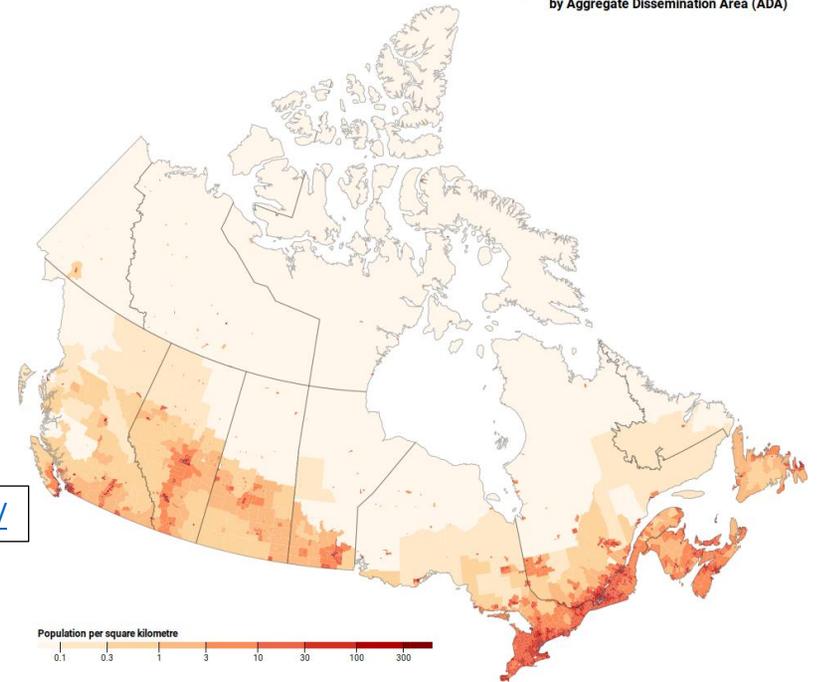
**Statements**

<https://matadornetwork.com/read/mapped-canadas-incredible-population-density/>  
 Canada's population is mostly concentrated in a strip of land within 160 km (100 miles) of the border with the United States.

<http://worldpopulationreview.com/countries/canada-population/>  
 Canada as a whole has a population density of just 4 people per square kilometers, which makes it the 228th most densely populated country. The population density is among the lowest in the world, mostly because a great deal of the country to the north is virtually uninhabited.

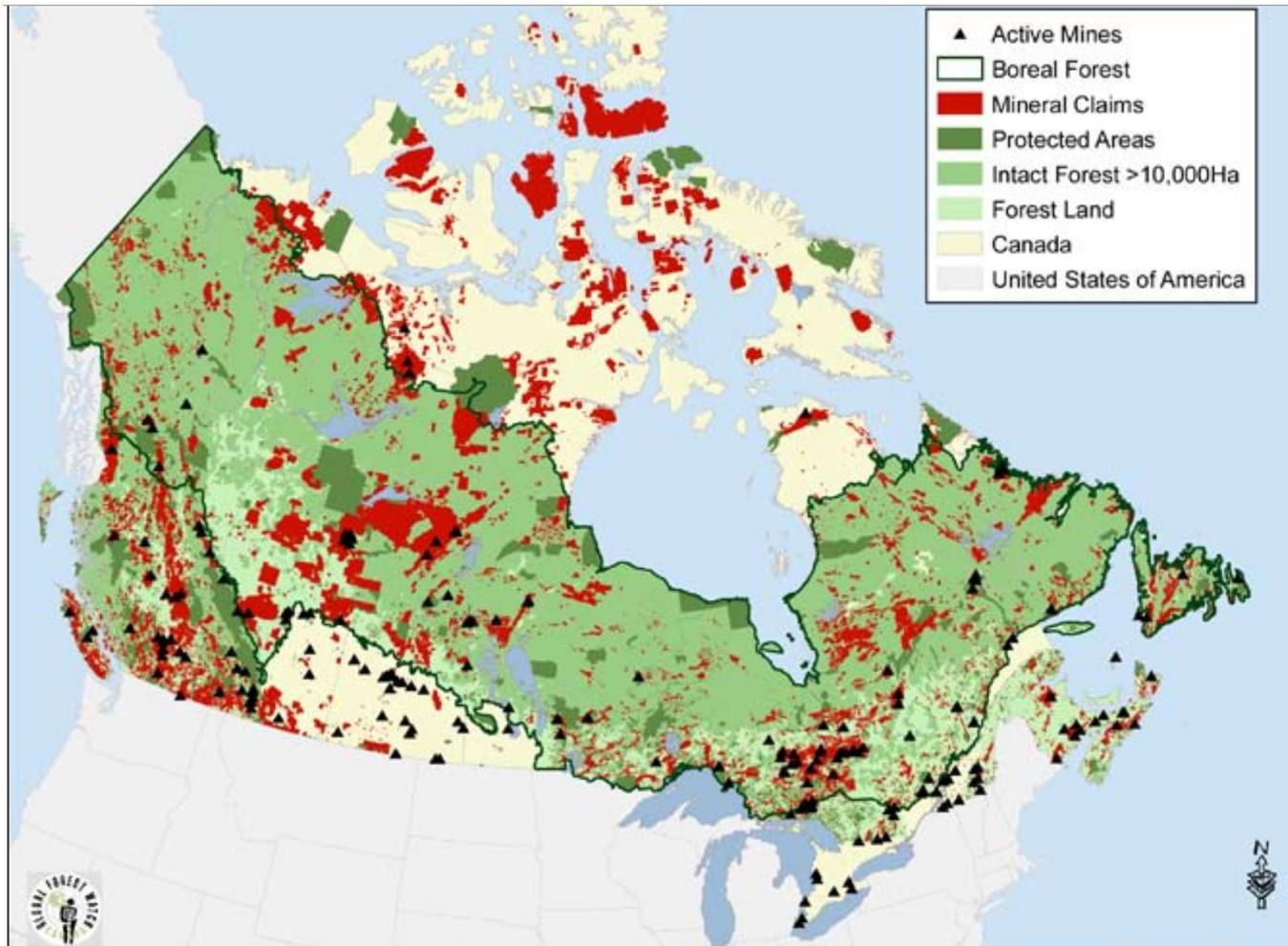
[https://www.reddit.com/r/canada/comments/5tgozc/population\\_density\\_2016\\_census\\_xpost/](https://www.reddit.com/r/canada/comments/5tgozc/population_density_2016_census_xpost/)

**Population Density, 2016 Census**  
 by Aggregate Dissemination Area (ADA)



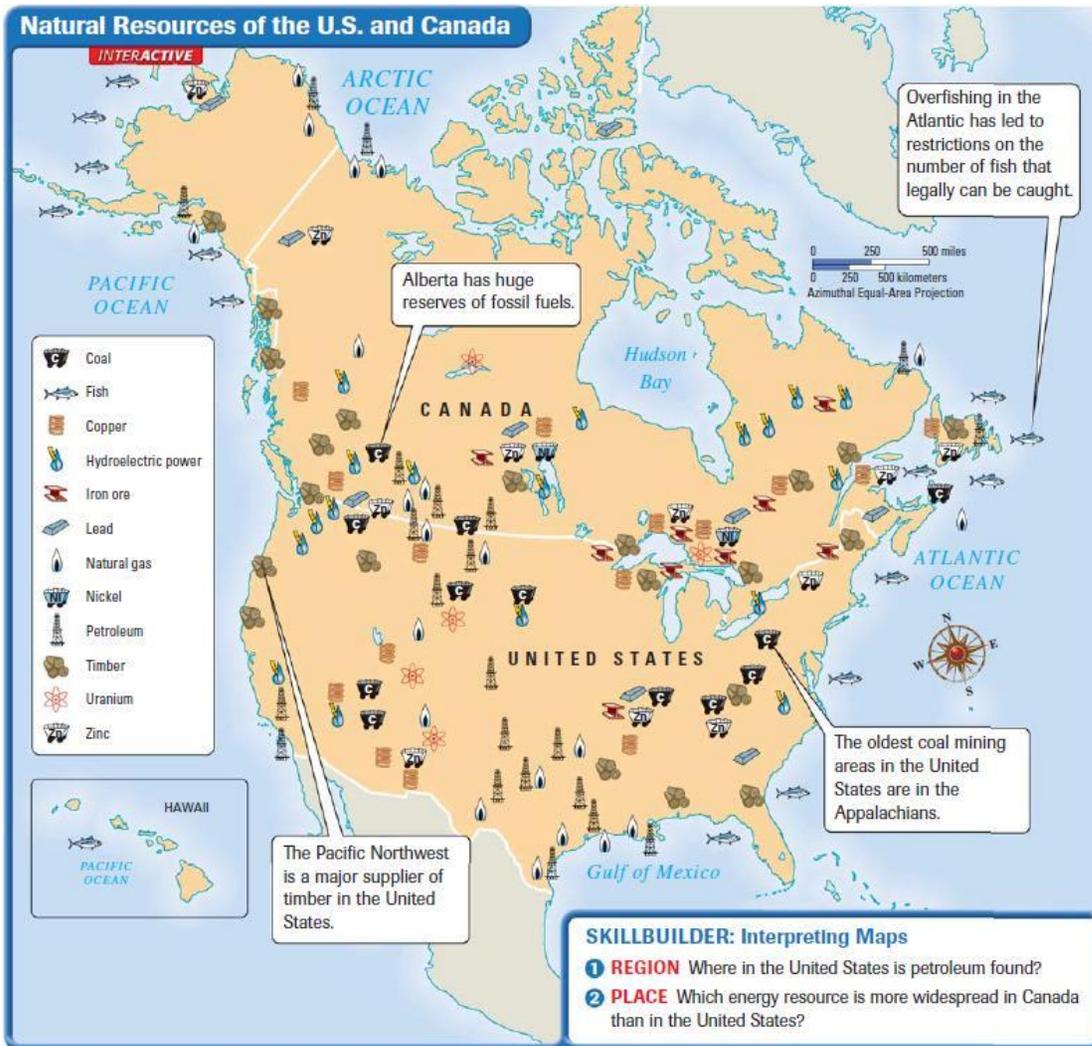
<https://www.pewtrusts.org/-/media/legacy/uploadedfiles/peg/publications/report/mining20exploration20conflicts20in20borealpdf.pdf>

Appendix D



<http://geography.name/the-united-states-and-canada-landforms-and-resources/>

Appendix D



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Appendix D

<http://www.freeworldmaps.net/northamerica/canada/map.html>

<http://columbiacares.me/physical-map-of-us-and-canada/us-and-canada-physical-map-pics-for-alling-of/>

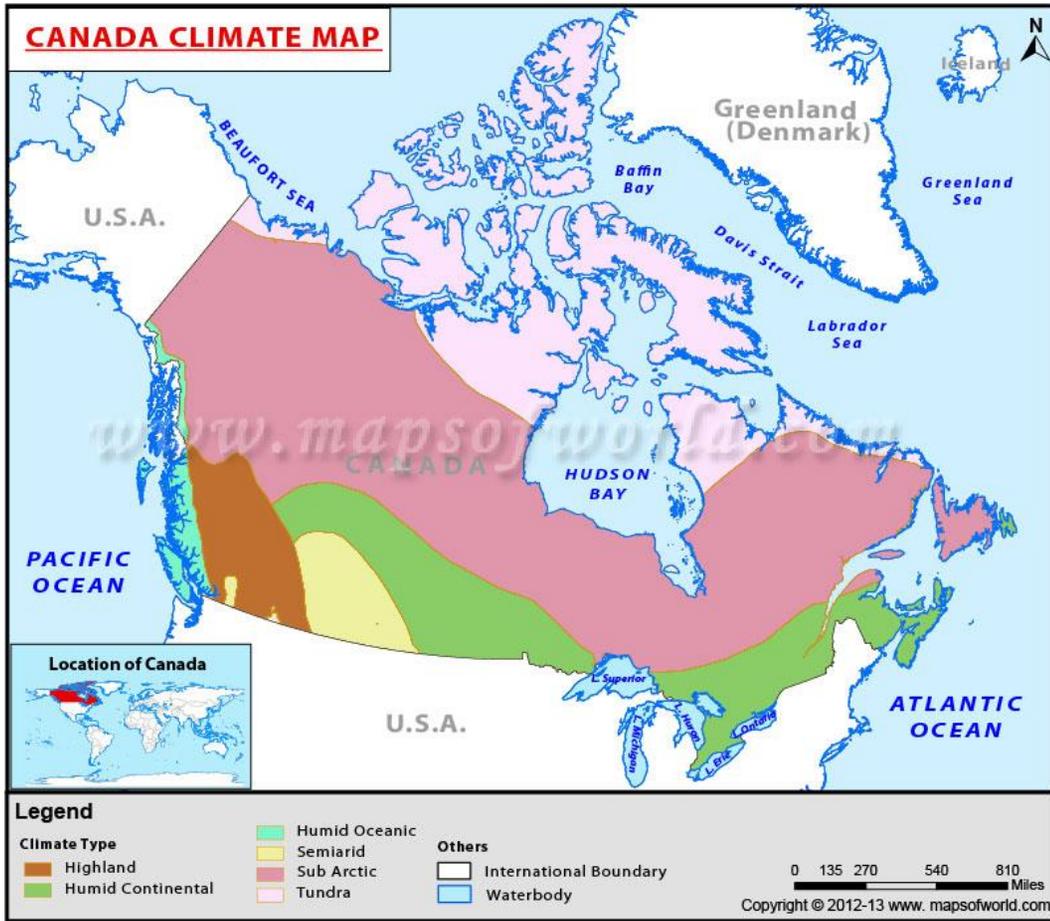
Appendix D



<https://www.mapsofworld.com/canada/thematic-maps/canada-climate-map.html>

If you need information about the type of climate, use this website.

<https://www.climateforkids.com>





## Sample Instructional Activities/Assessments

### Making the Connection! Geography and Economy

**NOTE:** *The following information is taken from the Teacher Notes. This is for teacher information only. It is placed here to help guide teachers in the purpose of the activity.*

*Trade between nations is only viable when it is **voluntary** (i.e., not coerced through military threats or economic sanctions) and mutually beneficial. When nations look for trading partners, strategic/military alliances are taken into account. Acquiring trading partners who can meet the product/service demands which one's own country cannot meet is a far greater consideration however.*

*Although some nations are rich in natural resources and highly developed in terms of technologies, infrastructure, et al, it is not always in a country's best interest financially to produce everything it is capable of. Often times nations choose to market only those products/services which they are capable of providing fastest, cheapest, and in great abundance. This phenomenon is known as economic **specialization**, and it is what sustains voluntary trade partnerships worldwide.*

*Canada specializes primarily in oil extraction and refining. This industry accounts for 19% of Canada's total exports. Another major area of specialization for Canada is the motor vehicle industry, particularly automobile and automotive parts manufacturing; this accounts for 10% of Canada's export market.*

#### **For Students: Information on Specialization**

Introduction to specialization Information Sheet **Appendix E**

- Read and discuss the information with students or create a PowerPoint of the information to ensure students understand the concept of specialization.

#### **Connection Map Directions: (Work in groups of 4) (Appendix F)**

**Purpose:** To make as many connections as possible to geography (location and natural resources) to economy (trade and specialization)

1. Each student will have one of the resources (listed below). Allow students time to familiarize themselves with their resource.
2. The center word is specialization. Students will make a connection to the word specialization from the information gained from information sheets and website. They will need to put document letter inside the box to identify where they got the information. Students need to write a brief explanation beside their connection or highlight the connections in the boxes. Also, if students see anything that raises questions for them that can be included. For example, they may notice that some of the imports and exports are the same. They may pose the question or provide an "I think" statement.

3. Next, they will branch off of this connection.
4. They will continue this process making as many connections as they can. They can go back to specialization and start new threads if it is needed. NOTE: All connections do not have to start from specialization. This is just the starting point to get students thinking.

**Resources for activity**

- Document A: Website: <https://www.cia.gov/library/publications/the-world-factbook/geos/ca.html> (Use the geography section for natural resources and economy) (1 student)
- Document B: Information Sheet Appendix G-1 and G-2 (2 students)
- Document C: Land Use Map Appendix H
- Document D: Natural Resources Map Appendix I
- Document E: Physical Feature Map Appendix J

1 student for 3 maps
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**Summary:**

Have students rotate their connections map between groups. Students are to look for common ideas. Have students share their observations.

GSE Standards and Elements	<p><b>SS6G5 Explain the impact of location, climate, distribution of natural resources, and population distribution on Canada.</b></p> <p>a. Describe how Canada’s location, climate, and natural resources impact trade and affect where people live.</p> <p><b>SS6E5 Give examples of how voluntary trade benefits buyers and sellers in Canada.</b></p> <p>a. Explain how specialization encourages trade between countries.</p> <p><b>SS6E6 Describe factors that influence economic growth and examine their presence or absence in Canada.</b></p> <p>d. Describe the role of natural resources in a country’s economy.</p>
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6<sup>th</sup> Grade Modern World Studies Frameworks for the Georgia Standards of Excellence in Social Studies

<p><b>Literacy Standards</b></p>	<p><u><b>Reading Skills</b></u>  <b>L6-8RHSS1:</b> Cite specific textual evidence to support analysis of primary and secondary sources.  <b>L6-8RHSS4:</b> Determine the meaning of words and phrases as they are used in a text, including vocabulary specific to domains related to history/social studies.  <b>L6-8RHSS7:</b> Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.  <u><b>Writing Skills</b></u>  <b>L6-8WHST9:</b> Draw evidence from informational texts to support analysis reflection, and research.</p>
<p><b>Connection to Social Studies Matrices (information processing and/or map and globe skills)</b></p>	<p><u><b>Map and Globe Skills</b></u>  4. compare and contrast the categories of natural, cultural, and political features found on maps  6. use map key/legend to acquire information from historical, physical, political, resource, product, and economic maps  8. draw conclusions and make generalizations based on information from map   <u><b>Information Processing Skills</b></u>  1. compare similarities and differences  11. draw conclusions and make generalizations  15. determine adequacy and/or relevancy of information</p>
<p><b>Enduring Understanding(s)</b></p>	<ul style="list-style-type: none"> <li>• <b>Location:</b> The student will understand that location affects a society’s economy, culture, and development.</li> <li>• <b>Production, Distribution, Consumption:</b> The student will understand that the production, distribution, and consumption of goods/services produced by the society are affected by the location, customs, beliefs, and laws of the society.</li> </ul>

<http://www.globalization101.org/trade-specialization/>

Appendix E

### **Excerpts from *Trade Specialization***

So far we have considered two broad categories of goods and services and identified the reasons why countries like the United States import them. These include:

1. Economically essential goods and services that are either not available at home or unavailable at a reasonable cost;
2. Goods and services from abroad that may be similar in function and price to those available at home, but which differ in quality or features.

A large number of other goods and services imported by the United States and many other countries would probably fit into two additional categories:

1. Goods and services that native companies, farms, and individuals can produce, but which foreign countries can produce more cheaply; and
2. Goods and services that can be produced more cheaply domestically, but which native companies, farms, and individuals have chosen not to produce in favor of producing more sophisticated (and hence more expensive) goods and services.

Many items in both of these categories—indeed, a large share of the total U.S. imports—are parts, semi-finished products, components, and other items that are assembled into finished products in the United States. A quick look at these two categories of imports will help introduce the important principle of international trade specialization, which is the key to understanding not just why countries trade, but how different countries end up trading the goods and services that they do.

Country-by-country differences in the cost of producing goods and services have a major influence on the direction and content of trade. Production costs are, in turn, influenced by the national endowments of three key production inputs: labor, capital (shorthand for equipment and technology), land and natural resources.

### ***Comparative Advantage and the Mutual Gains from Trade***

Countries have a mutual interest in specializing in the production of the goods and services that their unique combination of labor, capital, and land will enable them to produce most efficiently and cheaply. They can then trade goods and services that they are relatively well-equipped to produce for goods and services produced by other countries. Countries seek goods and services from other countries that they may not be able to produce efficiently or do not have the capacity to produce.

For example, even if U.S. companies could make both bicycles and computers more efficiently and at a lower cost than foreign firms, the theory of comparative advantage tells us that the United States should specialize more in the production of the good—in this case, computers—where its efficiency and cost advantage is greatest.

## 6<sup>th</sup> Grade Modern World Studies Frameworks for the Georgia Standards of Excellence in Social Studies

One of the most important and somewhat unexpected features of this principle of specialization is that it applies even in cases in which a particular country has an efficiency or cost advantage over other countries in all the products they are both able to manufacture. Economists call this the theory of comparative advantage.

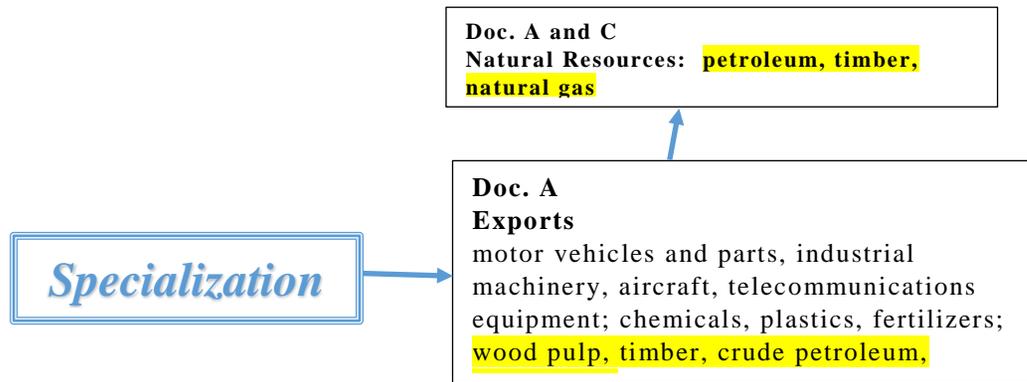
Appendix E  
(cont.)

The implication of the theory of comparative advantage is that all countries will benefit from trading with each other regardless of how well-endowed they are in labor, capital, and land, and regardless of how efficiently they can produce any particular good.

The key to securing these mutual gains from trade is for all countries to specialize as much as possible in the production of those products in which their efficiency and cost advantages are greatest. The idea, then, is that countries should devote as much of their national endowments (labor, capital, land) as they can to those things they do best. All countries should specialize in the thing they make the best, and then we can all buy one another's best product.

*Making the Connection – Geography and Economy*

Appendix F



<https://www.britannica.com/place/Canada/Transportation-and-telecommunications#ref43308>

### **Document B**

#### **Waterways**

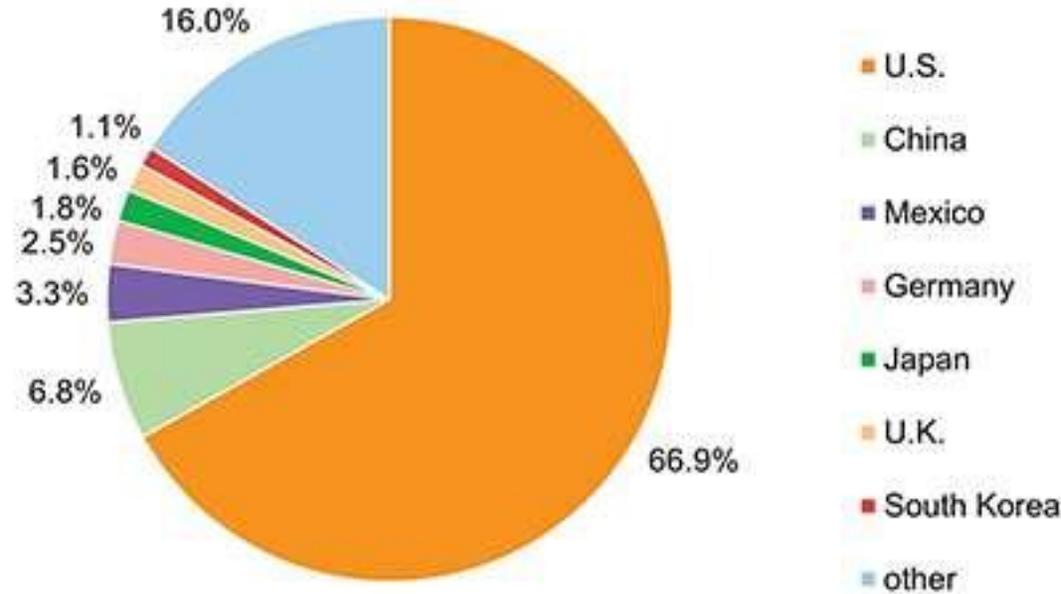
A large proportion of goods carried in Canada, in both domestic and [international trade](#), uses water facilities for some part of its journey. The inland shipping routes are dominated by the 2,342-mile (3,769-km) St. Lawrence–[Great Lakes](#) waterway, which provides navigation for vessels of 26-foot (8-metre) [draft](#) to the head of [Lake Superior](#). It includes the major canals of Canada. There are seven locks between Montreal and Lake Ontario; the [Welland Canal](#) bypasses the [Niagara River](#) and [Niagara Falls](#) between [Lake Ontario](#) and [Lake Erie](#) with eight locks; and the [Sault Sainte Marie Canal](#) and lock link Lakes Huron and Superior. The 16 locks overcome a drop of some 582 feet (177 metres) from the head of the lakes to Montreal. The [St. Lawrence Seaway](#) accommodates all but the largest oceangoing vessels, making the upper [St. Lawrence](#) and [Great Lakes](#) area open to four-fifths of the world’s maritime fleet. The main commodities shipped are grain from [Thunder Bay](#) on Lake Superior to St. Lawrence ports, and iron ore to [steel](#) mills in both Canada and the United States.

<https://www.britannica.com/place/Canada/Trade>

Manufactured goods have always been Canada’s primary imported goods. Automobiles and automobile parts are the leading imports, followed by industrial machinery. Other significant imports are chemical products, textiles, [petroleum](#), and such foods as vegetables in the winter season and tropical and subtropical fruits and nuts.

The [United States](#) is Canada’s chief trading partner, [constituting](#) more than two-thirds of all Canadian trade; exports account for a larger share of trade than imports. The dependence on U.S. trade is not just a technical matter of market shares in imports and exports. Because exports are so important, business trends in the United States feed back directly and quickly into the Canadian business sector. Changes in consumer tastes in the United States may have disproportionate effects on Canadian producers.

### Canada major import sources (2014)

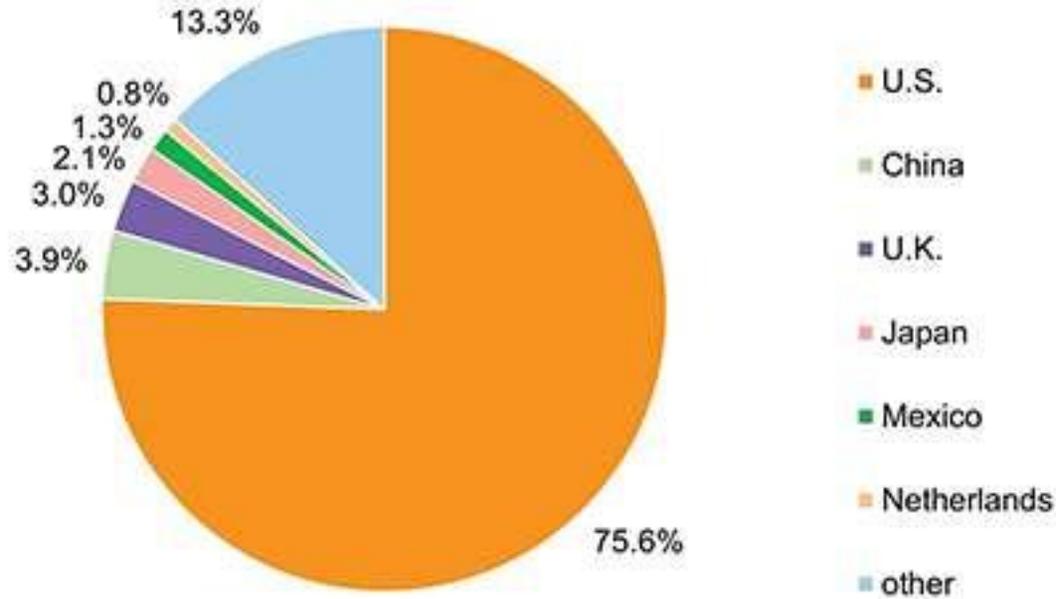


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#### Canada: Major import sources *Encyclopædia Britannica, Inc.*

Canada also retains strong ties with Europe, but newly emerging trade patterns may decrease somewhat Canada's dependence on its traditional pattern. [China](#) now ranks as Canada's second largest trading partner. Other important partners include the [United Kingdom](#), [Mexico](#), [Japan](#), [South Korea](#), and [Germany](#).

### Canada major export destinations (2014)



© Encyclopædia Britannica, Inc.

Canada: Major export destinations *Encyclopædia Britannica, Inc.*

<https://atlas.media.mit.edu/en/profile/country/can/> *Document B*

The top exports of Canada are [Cars](#) (\$48.9B), [Crude Petroleum](#)(\$39.6B), [Vehicle Parts](#) (\$10.5B), [Refined Petroleum](#) (\$8.34B) and [Sawn Wood](#) (\$7.79B), using the 1992 revision of the HS (Harmonized System) classification. Its top imports are [Cars](#)(\$26.4B), [Vehicle Parts](#) (\$20.4B), [Delivery Trucks](#) (\$12.9B), [Refined Petroleum](#) (\$10.8B) and [Crude Petroleum](#) (\$10.3B).

<http://www.worldstopexports.com/canadas-top-import-partners/>

Below is a list showcasing 15 of Canada’s top trading partners, countries that imported the most Canadian shipments by dollar value during 2017. Also shown is each import country’s percentage of total Canadian exports.

1. United States: US\$319.6 billion (76% of total Canadian exports)
2. China: \$18.2 billion (4.3%)
3. United Kingdom: \$13.6 billion (3.2%)
4. Japan: \$9.1 billion (2.2%)
5. Mexico: \$6 billion (1.4%)
6. South Korea: \$4 billion (1%)
7. India: \$3.2 billion (0.8%)
8. Germany: \$3.2 billion (0.8%)
9. France: \$2.6 billion (0.6%)
10. Belgium: \$2.6 billion (0.6%)
11. Netherlands: \$2.4 billion (0.6%)
12. Italy: \$1.8 billion (0.4%)
13. Hong Kong: \$1.7 billion (0.4%)
14. Australia: \$1.5 billion (0.4%)
15. Switzerland: \$1.5 billion (0.4%)

<http://www.worldstopexports.com/canadas-top-exports/>

The following export product groups represent the highest dollar value in Canadian global shipments during 2017. Also shown is the percentage share each export category represents in terms of overall exports from Canada.

1. Mineral fuels including oil: US\$84.6 billion (20.1% of total exports)
2. Vehicles: \$62.3 billion (14.8%)
3. Machinery including computers: \$32.4 billion (7.7%)
4. Gems, precious metals: \$18.6 billion (4.4%)
5. Wood: \$14.1 billion (3.3%)
6. Electrical machinery, equipment: \$13 billion (3.1%)
7. Plastics, plastic articles: \$12.6 billion (3%)
8. Aluminum: \$9.8 billion (2.3%)
9. Aircraft, spacecraft: \$9.7 billion (2.3%)

10. Oil seeds: \$7.9 billion (1.9%)

<https://www.thecanadianencyclopedia.ca/en/article/shield> *Document B*

Appendix G-2

Excerpts from article: Canadian Shield

The Canadian Shield is rich in natural resources, including minerals, forests and freshwater. Mining began in the region in the mid-19th century and was key to Canada's economic development. Various minerals and precious stones have been mined or continue to be mined on the Shield, including gold, silver, copper, zinc, nickel, iron, uranium and diamonds.

Today, the largest concentration of active mines on the Shield — and in the world — is located around Sudbury, Ontario. Metals mined here include copper, nickel, gold and palladium.

Kimberlites — formations where diamonds can be located — are scattered throughout the Shield, with the largest deposit located near Lac de Gras, Northwest Territories, about 300 km northeast of Yellowknife. Canada's first diamond mine — called Ekati — opened there in 1998.

The Canadian Shield also contains iron ore, including deposits near Wawa, Ontario. Canada's largest iron ore deposit, however, is known as the Labrador Trough or New Québec Orogen, and runs in a strip through northeastern Québec and western Labrador.

Similarly, the Shield also contains major uranium deposits, found around Great Bear Lake in the Northwest Territories, in northern Saskatchewan, and at Elliot Lake, Ontario. Today, Saskatchewan is the sole producer of Canadian uranium, primarily from the Cigar Lake area.

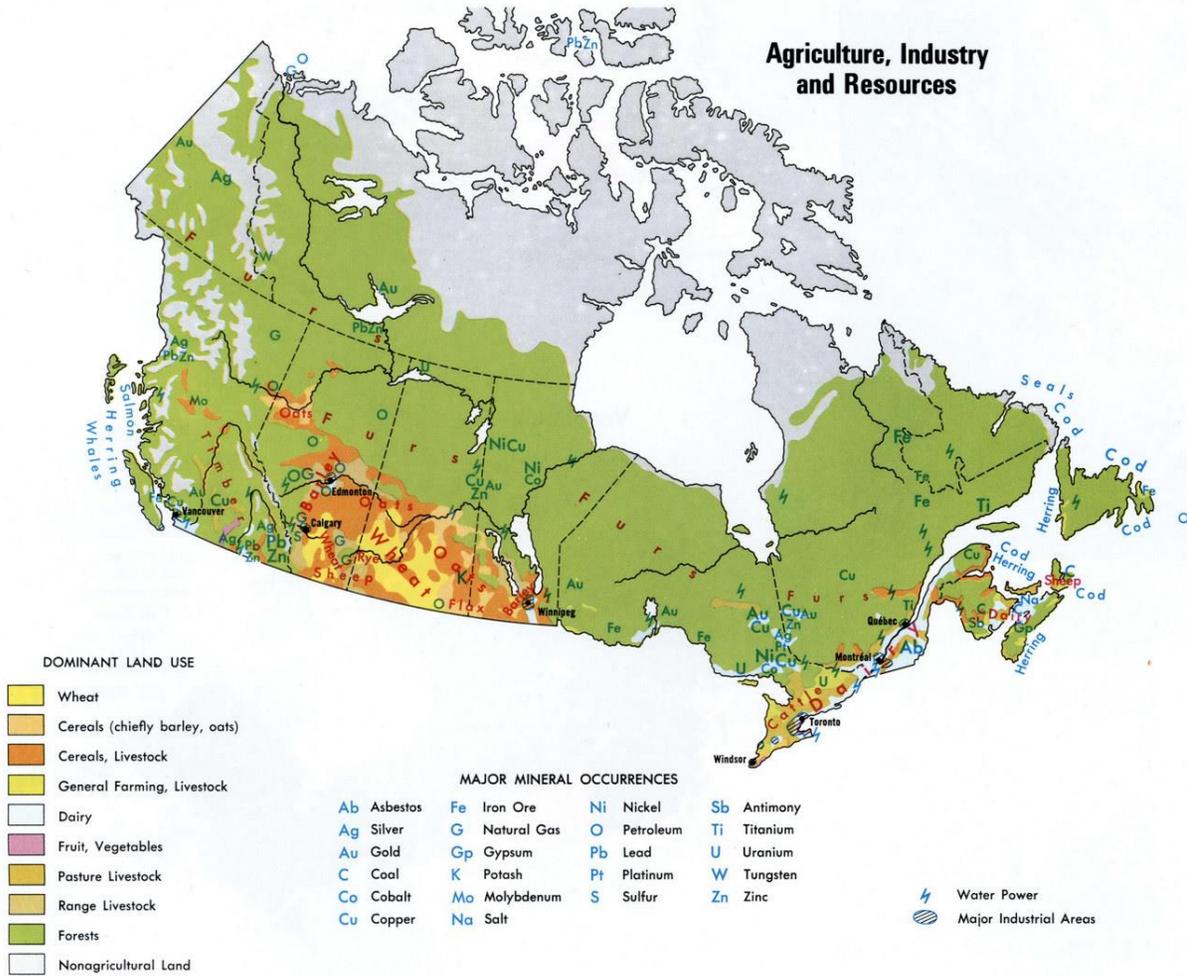
Given the prominence of the boreal forest throughout the Canadian Shield, forestry is also a prominent industry. Many of the small towns and villages scattered throughout northern Ontario and Québec were founded around pulp and paper mills and other forestry-related activities (e.g., Atikokan, Ontario).

Due to its numerous rivers, the Canadian Shield region produces a significant amount of hydroelectricity. Some of the highest producing hydroelectric dams include Churchill Falls, Labrador, and James Bay, Québec.

Document C

<http://us-canad.com/resources-of-canada.html>

Appendix H



Georgia Department of Education

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Document D

<http://geography.name/the-united-states-and-canada-landforms-and-resources/>

Appendix I



Georgia Department of Education

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Document E

<http://www.freeworldmaps.net/northamerica/canada/map.html>

Appendix J



Sample Instructional Activities/Assessments	
From NAFTA to USMC – Shape-Up Summary	
<p><b>Introduction:</b></p> <ol style="list-style-type: none"> <li>Read and review the following 2 articles with students for background information.                             <ul style="list-style-type: none"> <li>Excerpt from article, <i>What is NAFTA? Seven things to know about the North American free trade pact</i> (Appendix K)</li> <li>What You Need to Know about NAFTA and USMCA (Appendix L)</li> </ul> </li> <li>Have students complete the “Most Important Thing” summary activity. (Appendix M)</li> <li>Review student responses to the Most Important Thing.</li> </ol> <p><b>Part 2:</b></p> <ol style="list-style-type: none"> <li>Have students read the article, <i>Canada agrees to join U.S. and Mexico in new trade deal to replace NAFTA, say US and Canadian officials.</i> (Appendix N)</li> <li>Have students complete Shape-Up Summary and response sheet. (Appendix O and P)</li> </ol> <p><b>Summary:</b></p> <p>Using their knowledge gained from the articles, have students analyze a political cartoon by completing the political cartoon analysis sheet. (Appendix Q)</p> <p>You may choose one cartoon, use both or have students work in pairs and each student analyze their cartoon and share.</p> <p><i>Political Cartoons</i></p> <ul style="list-style-type: none"> <li>Cartoon 1 (Appendix R)</li> <li>Cartoon 2 (Appendix S)</li> </ul> <p>Discuss student analysis as a class.</p>	
<p>GSE Standards and Elements</p>	<p><b>SS6E5 Give examples of how voluntary trade benefits buyers and sellers in Canada.</b></p> <ol style="list-style-type: none"> <li>Compare and contrast different types of trade barriers, such as tariffs, quotas, and embargoes.</li> <li>Explain the functions of the North American Free Trade Agreement (NAFTA).</li> </ol>

<p><b>Literacy Standards</b></p>	<p><b><u>Reading Skills</u></b>  <b>L6-8RHSS1:</b> Cite specific textual evidence to support analysis of primary and secondary sources.  <b>L6-8RHSS2:</b> Determine the central ideas or information of a primary or secondary source; provide an accurate summary of the source distinct from prior knowledge or opinions.  <b>L6-8RHSS4:</b> Determine the meaning of words and phrases as they are used in a text, including vocabulary specific to domains related to history/social studies.  <b>L6-8RHSS7:</b> Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.  <b><u>Writing Skills</u></b>  <b>L6-8WHST9:</b> Draw evidence from informational texts to support analysis reflection, and research.</p>
<p><b>Connection to Social Studies Matrices (information processing and/or map and globe skills)</b></p>	<p><b><u>Information Processing Skills</u></b></p> <ol style="list-style-type: none"> <li>1. compare similarities and differences</li> <li>3. identify issues and/or problems and alternative solutions</li> <li>5. identify main idea, detail, sequence of events, and cause and effect in a social studies context</li> <li>11 draw conclusions and make generalizations</li> <li>15. determine adequacy and/or relevancy of information</li> <li>17. interpret political cartoons</li> </ol>
<p><b>Enduring Understanding(s)</b></p>	<ul style="list-style-type: none"> <li>• <b>Production, Distribution, Consumption:</b> The student will understand that the production, distribution, and consumption of goods/services produced by the society are affected by the location, customs, beliefs, and laws of the society.</li> </ul>

<https://www.usatoday.com/story/news/politics/2018/08/23/nafta-seven-things-you-should-know-free-trade-agreement/1063956002/>

Appendix K

Excerpt from article: *What is NAFTA? Seven things to know about the North American free trade pact*

**Michael Collins, USA TODAY** Published 6:00 a.m. ET Aug. 23, 2018 | **Updated 11:13 a.m. ET Aug. 23, 2018**

WASHINGTON – After a year of negotiations, the U.S. and Mexico are on the verge of striking a deal to revise the North American Free Trade Agreement, or NAFTA.

With that in mind, this is a good time to step back and see how we got to this point.

### ***What is NAFTA?***

The North American Free Trade Agreement, or NAFTA, is a trade pact signed by the U.S., Canada and Mexico, which made it easier for companies in those three countries to move goods and supplies across North America’s borders. The agreement took effect on Jan. 1, 1994, and essentially eliminated tariffs on most goods traded among the three nations.

NAFTA took effect under President Bill Clinton, who ushered it through Congress, but the framework for the deal was laid years earlier. Ronald Reagan made a North American free trade zone part of his 1980 presidential campaign platform. And President George H.W. Bush signed NAFTA on Oct. 7, 1992, setting the stage for congressional approval of the agreement.

### ***Why is a new NAFTA deal being negotiated?***

President Donald Trump despises the current NAFTA agreement, which he blames for the loss of American jobs. Trump often blasted NAFTA as the “worst trade deal ever” while on the campaign trail and has even threatened to pull out of the agreement unless a better deal can be reached.

Other critics concede that NAFTA needs to be updated to reflect changes in the world economy. For example, the digital economy was in its infancy when NAFTA was originally negotiated. Now it’s a global phenomenon.

So to try to salvage NAFTA and sync it with today’s business environment, the U.S., Mexico and Canada entered into negotiations last August to revise the 24-year-old agreement.

## What You Need To Know About NAFTA and USMCA

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[teachingkidsnews.com/2018/10/10/what-you-need-to-know-about-nafta-and-usmca/](https://teachingkidsnews.com/2018/10/10/what-you-need-to-know-about-nafta-and-usmca/)



Appendix L

By Joyce Grant

A big agreement was just made between the United States, Canada and Mexico.

It's complicated—too complicated to explain fully here—but it's good to have an idea about what it is and why it is important.

Back in 1994, the US, Canada and Mexico made a deal to all become “trading partners.” That means, each country would partner with the others to make it easy to buy and sell things and services back and forth. That deal was called NAFTA, the North American Free Trade Agreement.

When countries don't have a deal like that, it's sometimes hard for one country to sell things to another country.

It's easier to understand with an example. This is a fictional example—it's not real—to help illustrate how NAFTA works.

- Let's say Fakeland (not a real place) makes bicycles and they want to sell them in Canada. (Fakeland isn't part of any agreement.) Canadians start buying lots of bikes from Fakeland. The people in Canada who make bikes might get upset: “Canadians are buying Fakeland bikes instead of our Canadian bikes!” So the Canadian government, which wants to support the Canadian bike makers, might decide that every Fakeland bike must cost more than any Canadian bike. That would encourage Canadians to buy the lower-priced Canadian bikes. (Assuming the Fakeland and the Canadian bikes are the same except for price.)

When a government increases another country's price like that, it's known as a *tariff*.

(This is a very simplified example. The agreement covers many, many things and is very long and complicated.)

The NAFTA agreement lets the United States, Canada and Mexico sell things back and forth with fewer tariffs.

Recently, US President Donald Trump said he doesn't like the old NAFTA deal. He wanted to make a new deal that was even better for the United States. He started working with the Mexican government to create a new deal. Canada later joined the discussions.

After many hours of discussion, the three countries came up with a new deal.

It is called the United States-Mexico-Canada Agreement, or USMCA for short.

The new agreement is very much like the old, NAFTA deal. There are a few things that were changed, for some industries like the dairy industry that sells milk and milk products. The agreement also covers things like: how easy it is for someone to work in one of the other countries, and how easy it is for one of the three countries to invest in companies in the other two countries.

## 6<sup>th</sup> Grade Modern World Studies Frameworks for the Georgia Standards of Excellence in Social Studies

The new deal may be better than the NAFTA deal for Indigenous peoples, because it helps to protect more of their rights, according to an article by Perry Bellegarde, the national chief of the Assembly of First Nations, in *Macleans* magazine.

Appendix L (cont.)

The new USMCA deal isn't finalized yet. All three countries still have to sign off on it, but it is likely that will happen "toward the end of November," according to Tom Blackwell from the *National Post*.

**The Most Important Thing**

Appendix M

The most important thing about NAFTA to USMCA is_____.
Detail 1:
Detail 2:
Detail 3:
In summary, the most important thing about NAFTA to USMCA is

<https://www.usatoday.com/story/news/politics/2018/09/30/nafta-canada-agrees-join-u-s-mexico-new-trade-agreement/1453244002/>

### *Canada agrees to join U.S. and Mexico in new trade deal to replace NAFTA, say US and Canadian officials*

**Michael Collins, USA TODAY** Published 11:01 p.m. ET Sept. 30, 2018 | **Updated 1:22 p.m. ET Oct. 1, 2018**

WASHINGTON – Canada has agreed to join the United States and Mexico in a trade deal that will replace the North American Free Trade Agreement, U.S. and Canadian officials said Sunday night.

“Today, Canada and the United States reached an agreement, alongside Mexico, on a new, modernized trade agreement for the 21st century: the United States-Mexico-Canada Agreement (USMCA),” U.S. Trade Representative Robert Lighthizer and Canadian Foreign Affairs Minister Chrystia Freeland said in a joint statement. “USMCA will give our workers, farmers, ranchers and businesses a high-standard trade agreement that will result in freer markets, fairer trade and robust economic growth in our region.”

“It will strengthen the middle class and create good, well-paying jobs and new opportunities for the nearly half-billion people who call North America home,” Lighthizer and Freeland added.

“We look forward to further deepening our close economic ties when this new agreement enters into force,” they said in crediting Mexican Economy Secretary Ildefonso Guajardo “for his close collaboration over the past 13 months.”

The U.S. had imposed a deadline of midnight Sunday with Canada to reach a new three-country deal.

The last-minute deal will provide the U.S. with greater access to Canada’s dairy market, an issue that had been considered vital for U.S. dairy manufacturers, a senior administration official told reporters.

The text of the new deal was to be submitted to Congress late Sunday and is expected to be signed by all three countries by the end of November, the official said.

“This is a big win for the United States, Mexico and Canada,” the official said.

In a tweet sent early Monday, President Donald Trump praised the salvaged accord and said it would have a new name.

"We reached a wonderful new Trade Deal with Canada, to be added into the deal already reached with Mexico. The new name will be The United States Mexico Canada Agreement, or USMCA. It is a great deal for all three countries, solves the many deficiencies and mistakes in NAFTA, greatly opens markets to our Farmers and Manufacturers, reduce(s) Trade Barriers to the U.S. and will bring all three Great Nations closer together in competition with the rest of the world. The USMCA is a historic transaction!," Trump tweeted.

Commerce Secretary Wilbur Ross described the new agreement as "a huge deal" during an appearance Monday on Fox Business Network's "Mornings With Maria."

"I think it clearly vindicates President Trump's trade policies because this is fundamental reform and now there is no more NAFTA, there's USMCA," Ross said. "So rest in peace NAFTA."

The new agreement comes just one month after the U.S. and Mexico announced that they had reached a new trade pact to replace NAFTA, which essentially eliminated tariffs on most goods traded among the U.S., Canada and Mexico and made it easier for companies in those three countries to move goods and supplies across their borders

Negotiators for the U.S., Canada and Mexico began talks more than a year ago to replace the 24-year-old agreement, which Trump has repeatedly blasted as "the worst deal ever."

Canada was a part of the discussions to renegotiate NAFTA when the talks started last year. But the negotiations reached an impasse in late May, and Canada stayed on the sidelines while the U.S. and Mexico continued their talks. After the U.S. and Mexico reached a new deal, Trump indicated he was ready to move forward without Canada if an agreement could not be reached with Ottawa.

Negotiations between the U.S. and Canada appeared to be hopelessly stalled last week, partly because of U.S. demands for access to Canada's dairy market.

Trump said at a press conference Wednesday that negotiators for the two countries weren't getting along, and he threatened to slap tariffs on Canadian-made cars. Trump also claimed he had refused to meet with Canadian Prime Minister Justin Trudeau during a U.N. General Assembly in New York last week. A spokesman for Trudeau's government disputed that a meeting had ever been requested.

But with a U.S.-imposed deadline of reaching a new deal by midnight Sunday, the talks accelerated over the weekend, leading to an 11th-hour deal announced late Sunday.

Appendix N  
(cont.)

As part of the new deal, Canada will offer the U.S. greater access to its dairy market than what the U.S. would have achieved through the Trans-Pacific Partnership, a trade treaty Trump withdrew from last year, the senior administration official said.

A dispute resolution process that the U.S. had wanted to scrap but Canada wanted to keep will remain in place. The new accord will include an “accommodation” to help shield Canada if Trump follows through on a threat to tax imported vehicles, the official said.

It was not immediately clear what that accommodation would entail, but published reports suggested Canada could be exempt from the auto tariffs if it agrees to limit its auto exports to the U.S.

Other new provisions are changes to the so-called auto rules of origin, which dictate that, to avoid tariffs, a certain percentage of an automobile must be built from parts that originated from countries within the NAFTA region.

Under the new rules, cars must be built with at least 75 percent of parts made in North America, up from 62.5 percent under NAFTA. Also, 40 to 45 percent of an auto will have to be made by workers earning at least \$16 an hour.

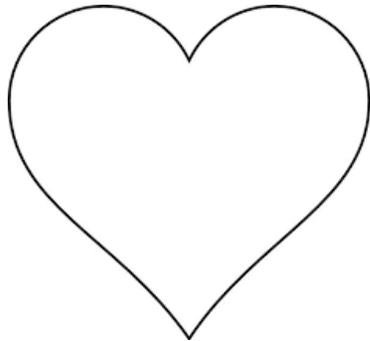
The new trade deal also includes standards designed to protect intellectual property and trade secrets, tougher labor requirements for Mexico and environmental obligations designed to combat trafficking in wildlife, timber and fish.

The agreement will run for 16 years but will be reviewed after six years and could then be extended for another 16.

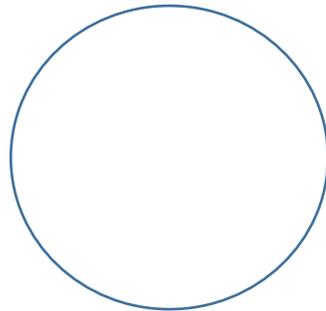
***Shape Up Summary – From NAFTA to USMCA***

Appendix O

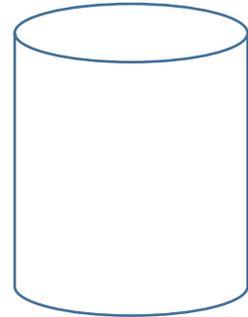
What is at the heart of USMCA?



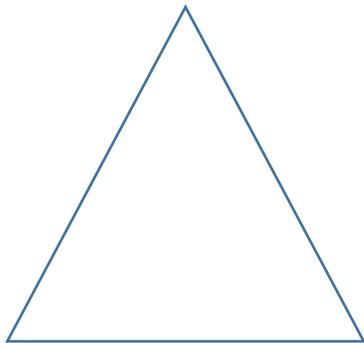
How is the change from NAFTA to USMCA like a circle?



What is the recipe for USMCA?



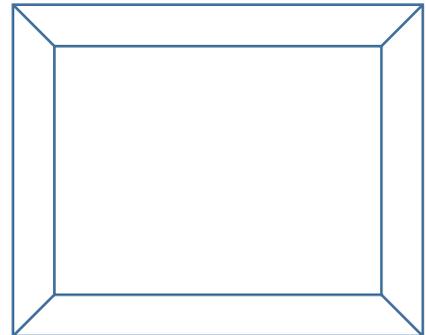
What is the main point of the article?



What are 4 major details of the article?

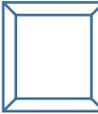


Create a visual of the main idea of the article.



**Shape-Up Summary Response Sheet**

Appendix P

Shape	Response
	
	
	
	
	1.
	2.
	3.
	4.
	

6<sup>th</sup> Grade Modern World Studies Frameworks for the Georgia Standards of Excellence in Social Studies

**NOTE:** This analysis sheet is from [https://www.archives.gov/files/education/lessons/worksheets/cartoon\\_analysis\\_worksheet.pdf](https://www.archives.gov/files/education/lessons/worksheets/cartoon_analysis_worksheet.pdf). It was modified to fit this document.

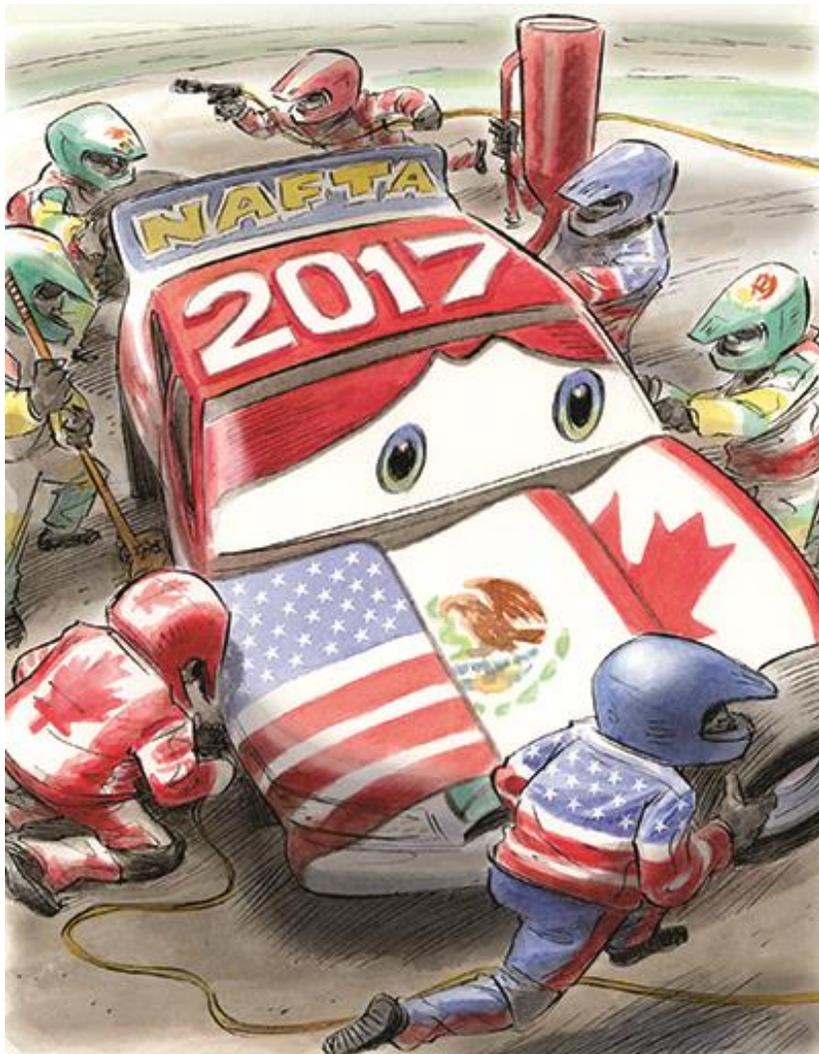
<b>Analyze a Cartoon</b>	
<b>Meet the cartoon.</b>	
Quickly scan the cartoon. What do you notice first?	
What is the title of caption?	
<b>Observe its parts.</b>	
<b>Words:</b> Are there labels, descriptions, thoughts or dialogue?	<b>Visuals:</b> <ul style="list-style-type: none"> <li>• List the people, objects, and places in the cartoon.</li>   <li>• List the actions or activities.</li> </ul>
<b>Try to Make Sense of it</b>	
<b>Words:</b> Which words or phrases are most significant?	<b>Visuals:</b> Which of the visuals are symbols?
List adjectives that describe the emotions portrayed.	What do they stand for?
Who drew the cartoon?	When was it created?
What was happening at the time in history at the time it was created?	
What is the message? List evidence from the cartoon or your knowledge about the cartoonist that led you to your conclusion.	

<https://ottawacitizen.com/opinion/columnists/editorial-cartoons-for-july-2017>



[https://www.logisticsmgmt.com/article/cross\\_border\\_logistics\\_nafta\\_tune\\_up\\_time](https://www.logisticsmgmt.com/article/cross_border_logistics_nafta_tune_up_time)

Appendix S

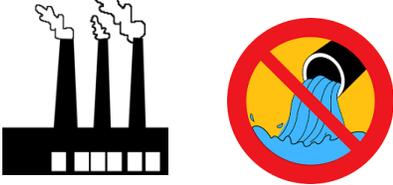
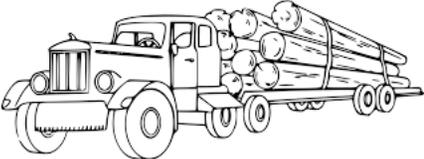


Sample Instructional Activities/Assessments	
<b>Superhero to the Rescue!</b>	
<p>1. Have students work in groups to determine the cause, effect and possible solutions of the pollution, acid rain, mining and logging. Have students complete the graphic organizer. (Appendix T)</p> <ul style="list-style-type: none"> <li>• Resources (Appendix U – BB)                             <ul style="list-style-type: none"> <li>○ <b>NOTE: There are more articles/infographics posted than are needed. This is a selection of articles for you to choose from based on your students’ needs. If you choose, you can select excerpts from the articles. For example, the article in appendix is 7 pages long. For this article, you would need to select excerpts.</b></li> </ul> </li> </ul> <p>2. Review the information with the students.</p> <p>3. Environmental Superhero (work in groups of 2 or 3)– See attached directions (Appendix CC )</p> <p>4. Have groups present their Superhero.</p>	
GSE Standards and Elements	<p><b>SS6G6 Explain the impact of environmental issues in Canada.</b></p> <ol style="list-style-type: none"> <li>1. Explain the causes and effects of pollution and acid rain in Canada to include the Great Lakes.</li> <li>2. Explain the causes and effects of the extraction of natural resources on the Canadian Shield (e.g., mining and logging).</li> </ol>
<b>Literacy Standards</b>	<p><u><b>Reading Skills</b></u></p> <p><b>L6-8RHSS1:</b> Cite specific textual evidence to support analysis of primary and secondary sources.</p> <p><b>L6-8RHSS2:</b> Determine the central ideas or information of a primary or secondary source; provide an accurate summary of the source distinct from prior knowledge or opinions.</p> <p><b>L6-8RHSS4:</b> Determine the meaning of words and phrases as they are used in a text, including vocabulary specific to domains related to history/social studies.</p> <p><b>L6-8RHSS5:</b> Describe how a text presents information (e.g., sequentially, comparatively, causally).</p> <p><b>L6-8RHSS7:</b> Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.</p> <p><u><b>Writing Skills</b></u></p> <p><b>L6-8WHST8:</b> Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.</p> <p><b>L6-8WHST9:</b> Draw evidence from informational texts to support analysis reflection, and research.</p>

<p><b>Connection to Social Studies Matrices (information processing and/or map and globe skills)</b></p>	<p><b><u>Map and Globe Skills</u></b></p> <p>6. use map key/legend to acquire information from historical, physical, political, resource, product, and economic maps              8. draw conclusions and make generalizations based on information from maps              11. compare maps with data sets (charts, tables, graphs) and /or readings to draw conclusions and make generalizations</p> <p><b><u>Information Processing Skills</u></b></p> <p>1. compare similarities and differences              3. identify issues and/or problems and alternative solutions              5. identify main idea, detail, sequence of events, and cause and effect in a social studies context              7. interpret timelines, charts, and tables              11 draw conclusions and make generalizations              12. analyze graphs and diagrams              15. determine adequacy and/or relevancy of information              17. interpret political cartoons</p>
<p><b>Enduring Understanding(s)</b></p>	<ul style="list-style-type: none"> <li>• <b>Human Environmental Interaction:</b> The student will understand that humans, their society, and the environment affect each other.</li> </ul>

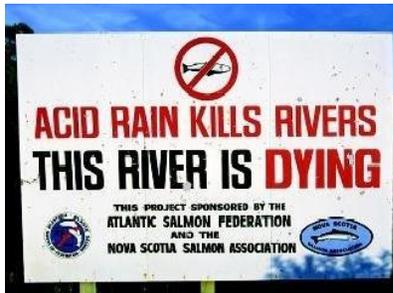
**Environmental Issues in Canada**

Appendix T

	<b>Causes</b>	<b>Effects</b>	<b>Possible Solutions</b>
<p>Great Lakes <b>Pollution – Acid Rain</b></p> 			
<p>Extraction of Natural Resources on Canadian Shield <b>Mining</b></p> 			
<p>Extraction of Natural Resources on Canadian Shield <b>Logging</b></p> 			

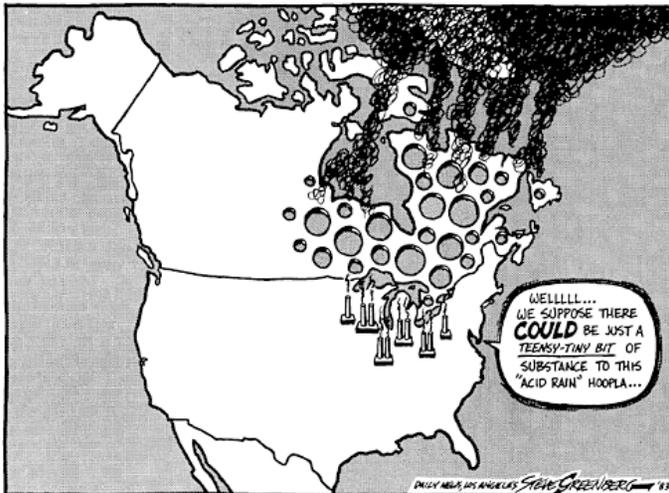
[https://www.researchgate.net/figure/a-A-signpost-in-Nova-Scotia-Canada-proclaims-effects-of-acid-rain-on-salmon-fishery\\_fig3\\_275344491](https://www.researchgate.net/figure/a-A-signpost-in-Nova-Scotia-Canada-proclaims-effects-of-acid-rain-on-salmon-fishery_fig3_275344491)

Appendix U



a) A signpost in Nova Scotia, Canada proclaims effects of acid rain on salmon fishery (source: 'Water Encyclopedia', 2015) b) fish kill due to acidification of river ('Juliana Muna', n.d.) Adapted from 'Effects of Acid rain' US EPA (2012).

<https://canadacid.wordpress.com/facts/>



<https://www.csmonitor.com/Environment/2015/1104/Soil-health-improving-in-US-and-Canada-due-to-acid-rain-decline>

*Soil health improving in US and Canada, due to acid rain decline*

Thanks to pollution regulations, acid rain levels in the northeastern US and eastern Canada are significantly lower today than they were a few decades ago.

November 4, 2015. By **Lonnie Shekhtman** Staff

A group of scientists from the United States and Canada have found that the acidity of soils in some parts of the continent has declined, abating years of harm to plants and aquatic life by reversing the depletion of a critical nutrient in soil: calcium.

Scientists have determined this by testing soil samples collected in 27 locations between 2009 and 2014, in the forests of Maine, New Hampshire, Vermont, Ontario and elsewhere in the northeastern US and eastern Canada. They compared their results to those compiled by the same group of scientists working at the same locations between eight and 24 years ago.

"The start of widespread soil recovery is a key step to remedy the long legacy of acid rain impacts on terrestrial and aquatic ecosystems," Gregory Lawrence, a US Geological Survey (USGS) soil and water chemist, said in a statement.

Dr. Lawrence is a lead author of a paper published on October 23 in the journal Environment Science and Technology with researchers from the USGS, Canadian Forest Service, University of Maine, US Forest Service, and Quebec's parks ministry.

Thanks to pollution regulations in the US (like the Clean Air Act) and in Canada that have curtailed emissions of sulfur dioxide and nitrogen oxide into the atmosphere, acid rain levels today are significantly lower. This is very good news, since acid rain depletes nutritious calcium, a mineral that prevents toxic aluminum from forming in the upper level of soil. This level of soil is dense with nutrients that sustain plant and aquatic life.

Aluminum is naturally found a couple of feet below ground, Lawrence tells The Christian Science Monitor, but it's not harmful there.

"Acid rain mobilized it and changed it from benign to something harmful," Lawrence explained. Acid rain forced the aluminum to move from its home deep in the soil to the nutritious upper levels.

This phenomenon caused environmental havoc – poisoning fish, trees, and plants – during peak acid rain levels dating back to the 1970s.

Interestingly, the researchers found that there was actually more aluminum than expected deeper underground, “but that’s probably not because of rain,” Lawrence says. The researchers say that they believe the aluminum is actually moving back to where it came from, says Dr. Lawrence.

Appendix V (cont.)

“We think this is part of the recovery response,” he says.

The team hopes to next study the calcium levels in the soil, which aren’t declining anymore, but also are not growing. “The most uncertain is the recovery of calcium in the soil,” explains Lawrence. “It seems to be a very slow process and we’re not sure how slow.”

<http://www.thecanadianencyclopedia.ca/en/article/acid-rain/>

Excerpts from article:

### ***Acid Rain***

Article by H.I Ferguson, D.s. Jeffries  
Updated by Sarah-taïssir Bencharif  
Date Published August 29, 2013  
Last Edited March 4, 2015

The primary cause of low pH in precipitation over northeastern North America is sulphuric acid (H<sub>2</sub>SO<sub>4</sub>) from industrial and urban emissions of sulphur dioxide (SO<sub>2</sub>). Nitric acid (HNO<sub>3</sub>) generated from emissions of nitrogen oxides (NO<sub>x</sub>) is a significant contributing factor in this region. In Canada, as in many other countries, the majority of NO<sub>x</sub> emissions are from transportation

### **Emissions Over Time**

Canadian emissions of SO<sub>2</sub> in 2011 were 1.85 million tonnes, down from 2.2 million tonnes in 2006. As a point of comparison, in 2011 SO<sub>2</sub> emissions in the US were 6.28 million tonnes, down from 12 million tonnes in 2006. Fuel for electricity and heating, as well as non-ferrous smelters (producing such metals as [nickel](#) and [copper](#) are the largest sources of SO<sub>2</sub> emissions in Canada, followed closely by emissions produced by the oil and gas sector.

In terms of NO<sub>x</sub> emissions, Canada produced 1.94 million tonnes in 2011, compared to 2.3 million tonnes in 2006. The US produced about the same in 2011 (1.94 million tonnes), compared to 3.4 million tonnes in 2006. The largest sources of NO<sub>x</sub> emissions in Canada are transportation vehicles (including cars, trains, planes and boats), and the oil and gas industry.

### **Effects of Acid Rain**

When acid rain reaches the Earth's surface, it can cause damage to aquatic [ecosystems](#) and buildings. Acid rain and its associated pollutants (SO<sub>2</sub>, NO<sub>x</sub>, sulphate particles and ozone) can also damage [forests](#) and [crops](#), and there is evidence of adverse human health effects. The degree of effects depends on the acid-reducing capability of the receptor (e.g., vegetation, soils, rock, lakes and streams). In areas where this buffering capacity is low, like the Canadian [Shield](#), acidic deposition over several years has led to increased acidity of rivers and lakes, and to the accelerated leaching

of [aluminum](#) from [soils](#). This is seen most in the surface waters of southeastern Canada, where acid rain levels are highest. However, SO<sub>2</sub> emissions in western Canada have increased to the point that vulnerable lakes in this region may also be threatened.

Aquatic life is dependent on the balanced pH of surface waters. Once the pH falls below approximately 5.5, both the amount and diversity of vegetation, zooplankton, [amphibians](#) and [fish](#) decreases. The aluminum leached from soils may also be in a form that is toxic to aquatic organisms. Once the average pH of a lake drops to around 4.5, most fish populations are eradicated due to reproductive failure or the disappearance of suitable food sources. Fish populations in thousands of lakes in eastern North America and Scandinavia have declined or disappeared because of water acidification, and hundreds of thousands more are threatened. [Rivers](#) are impacted as well. This is seen in the marked decline of ATLANTIC SALMON in the [Maritimes](#) and in Scandinavia. Birds and other fish predators may decrease in numbers because of this reduced food supply.

Reductions in North American SO<sub>2</sub> emissions could suggest that aquatic ecosystems will soon recover from acidification. However, this is not the case. Only lakes located near smelters with dramatically reduced emissions approach this expectation. Most lakes are only affected by long-range emissions and so far, they show relatively small increases in pH. This delay in the chemical recovery of lakes is due to several geochemical factors related to the storage or release of acids, or bases from the forest soils and wetlands that surround these lakes. Biological recovery in lakes does not necessarily follow chemical recovery. The only extensive evidence of biological recovery is in lakes from the Sudbury/Killarney region of [Ontario](#).

The effects of acid rain and its associated pollutants on forests and agriculture are not as clear-cut, but are potentially serious. These include direct damage to plant foliage, seed germination failure, retardation of growth (particularly at early life stages), deterioration of plant roots associated with the leaching of soil constituents and, possibly, increased plant susceptibility to insects and diseases.

There are several potential effects of acid rain on human health. The [lead](#), copper and other metals from water delivery pipes can leach and contaminate acidified drinking water. Increased concentrations of heavy metals in fish from acidified rivers and lakes can pose a problem for populations consuming significant quantities of these fish.

<https://www.nature.com/news/2005/050810/full/news050808-10.html>

## Acid rain still hurting Canada

Appendix X

### Ecologists call for further cuts in industrial pollution.

Michael Hopkin

Lakes and waterways in North America are struggling to recover from the effects of acid rain, despite reduced emissions of the pollutants that cause it. Without further cuts, it could be millennia before the worst-affected sites recover, say environmentalists.

Although the 1990 US Clean Air Act has reduced acid rain in northeastern North America, many lakes in eastern Canada are still beyond their critical load - the amount of acidification that harms the organisms living there, researchers told a meeting of ecologists in Montreal.

Acid rain is caused largely by sulphur dioxide and oxides of nitrogen emitted by industrial activities such as coal burning. The gases dissolve in rainwater to form acids. Much of this industry is based in the United States, but the weather exports pollution north of the border. Between 50% and 70% of Canada's acid rain comes from the United States, while only 2-10% of America's pollution in this area comes from Canada.

**“It may take thousands of years for the soils to recover.”**

The Clean Air Act reduced US sulphur dioxide emissions from 16 million tonnes a year in the 1980s to 11 million tonnes in 2000. Rain is less acidic, but Ontario's lakes are not recovering, Shaun Watmough of Trent University in Peterborough, Ontario, told the annual meeting of the Ecological Society of America.

Many of the province's 31,000 small lakes have a pH value of about 5, making them dangerously acidic for fish and plants, he says.

"We've had 20 years of reductions and things still haven't got better," says Watmough. "That's going to annoy a lot of people; reductions are expensive."

## Calcium leak

The soil around these lakes has simply been overburdened, Watmough explains.

Hydrogen ions formed when sulphates and nitrates dissolve in the rainwater, are generally buffered by calcium ions from the soil, curbing acidity. But so much acid rain has fallen that there is not enough calcium available to do this, Watmough says.

Appendix X (cont.)

"It may take thousands of years for the soils to recover," he says.

Many acid-damaged soils in Europe are treated with lime to replace lost calcium. But this would be expensive to do in Canada's vast wilderness, and harmful if overdone, Watmough says. Another option might be to burn trees to release stored calcium, although this has never been tested.

The only practical solution is to cut industrial emissions further, argues Watmough.

## Long recovery

The lakes' plight is a reminder that it often takes longer to recover from pollution than it did to pollute, said John Gunn, a fish ecologist at Laurentian University in Sudbury, Ontario, who studies Canada's eastern lakes. He has found that many species find it harder to return to ecosystems disturbed by acidification.

"Lakes are resilient," says Gunn. "But the timeline of recovery is longer than we expected."

The situation also shows that the Canada-US Air Quality agreement, which aims to control levels of atmospheric pollutants across the countries' border, is still a work in progress, said Peggy Farnsworth of Canada's Environmental Protection Service. Further cooperation to cut emissions is likely to be necessary, she adds.

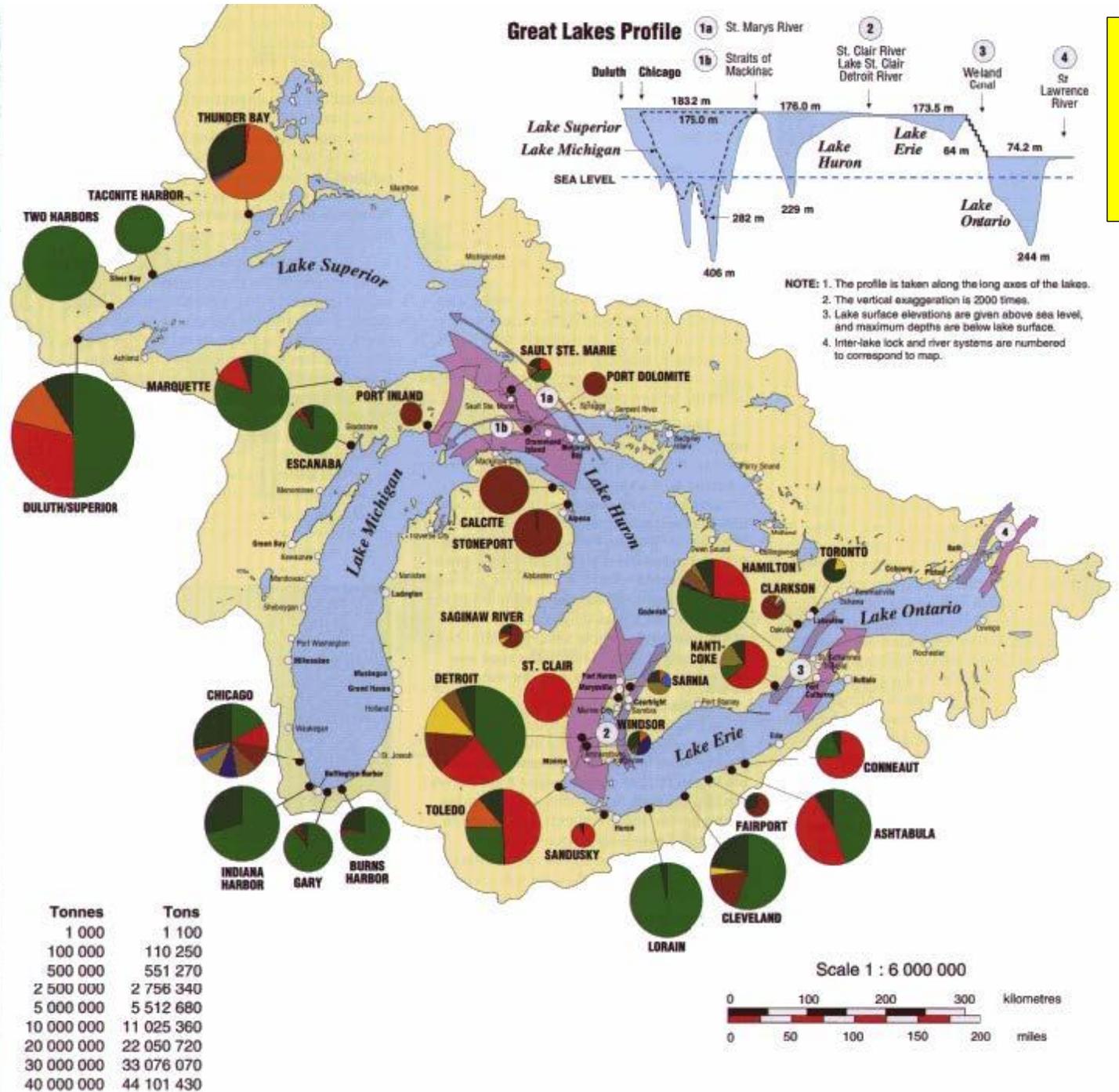
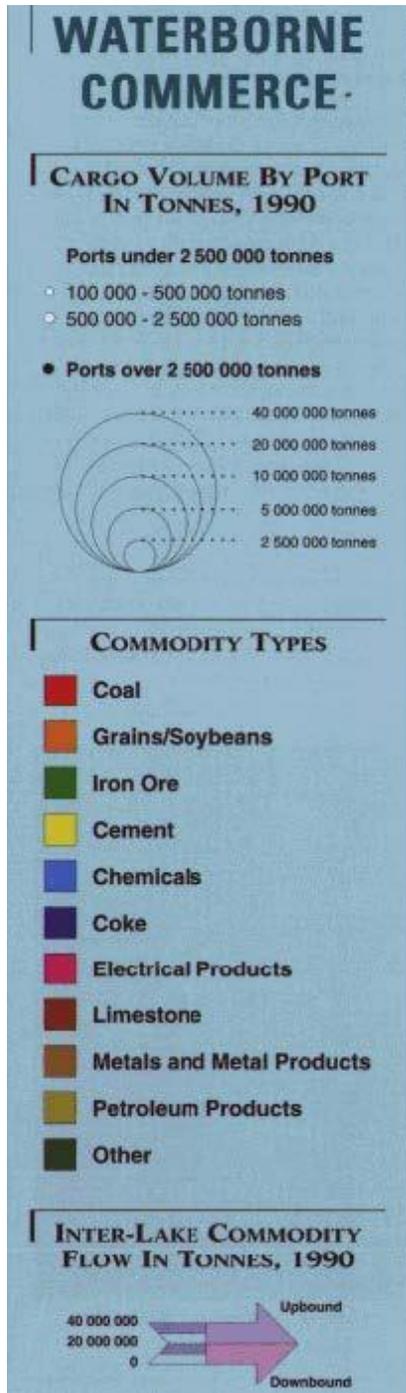
## WHAT KINDS OF POLLUTANTS ARE BEING PUT INTO THE GREAT LAKES?

There are approximately 35 million people in the Great Lakes area, and that results in a lot of domestic waste, with a relatively small area to dispose of it in. In fact, a 2006 study revealed that 20 evaluated cities (representing one-third of the region's population) produced more than three trillion litres of waste in one year. That is equal to 1.2 million Olympic swimming pools of waste. More than 90 billion litres of the waste that is dumped into the Great Lakes each year is untreated sewage. That is the equivalent of dumping more than 100 Olympic swimming pools of raw sewage into the Great Lakes each day!

The United States laws require secondary wastewater treatment, but there is no corresponding Canadian federal law. Many wastewater treatment facilities in the Great Lakes are combined sewer systems, which collect stormwater (from runoff into street gutters) and domestic wastewater (everything that is put down the drain or flushed down the toilet) together. During periods of heavy precipitation and runoff, the wastewater treatment facility becomes overloaded and redirects flow to water sources, even though the waste hasn't been treated. This can also happen during maintenance and power outages. In 2001, Ontario reported 144 significant bypasses.

Regarding the waste that is treated and released into the Great Lakes, many pollutants can survive the treatment process. For example, steroids (anti-inflammatory drugs), non-prescription drugs, insect repellent, detergent metabolites and plasticizers have been found in potentially dangerous concentrations in many lakes and streams across Canada and the United States. Over 360 chemical compounds, including DDT and mercury, have been found in the Great Lakes. For more information about emerging pollutants, the ways in which wastewater is treated or water pollution in general, see the fact sheets regarding [Emerging Contaminants](#), [Wastewater Treatment](#) and [Water Pollution](#).

There is also a high concentration of industrial activity in the Great Lakes area. The map below shows the location of industrial facilities in the region. The larger circles represent a greater amount of industrial activity in the region, and each region is also broken down into the types of industrial activity that are prevalent in the area. Lake Superior is much less affected by industry, compared with the southern portion of the Great Lakes system.



Industry pollutes the Great Lakes through wastewater and air pollution. Excessive air pollution can result in acid rain. Measurements have found that about 20 percent of the phosphorus that enters Lake Michigan is from atmospheric deposition. For more information about atmospheric deposition, see the [Acid Rain fact sheet](#). Agricultural runoff also adds pollutants to the Great Lakes, particularly in the form of excess nutrients, including nitrogen and phosphorus, which can lead to algae blooms.

Appendix X (cont.)

Due to intense agricultural practices and phosphorus in detergents, all five lakes have experienced excess algae growth. Lake Erie was the first to show the signs of severe eutrophication, in the 1960s. Eutrophication is a process in which a lake ages and becomes more nutrient-rich. Without nutrient pollution, this process takes thousands of years. Nutrients that were added to Lake Erie caused it to undergo the eutrophication process in only 25 years. Lake Erie is the smallest, warmest and shallowest of the Great Lakes, and it is surrounded by agricultural operations, urban areas and industries. Phosphorus acts as a fertilizer, and encourages plant growth. When the plants die, they settle to the bottom and decompose, using up the oxygen in the lake. When this happened to Lake Erie, many people thought the lake was “dead,” because oxygen was depleted, fish and aquatic life couldn’t survive, the lake appeared mossy and slimy, and it smelled bad. To clean up the lakes, The Great Lakes Water Quality Agreement was developed in 1972, between the United States and Canada. As a part of the agreement, phosphorus levels were reduced. Currently, phosphorus levels in Lakes Superior, Huron and Michigan are all below the maximum allowable concentration, and Lakes Erie and Ontario are both below (but near) the maximum allowable concentration. For more information about the amendments and additions that were made to the Great Lakes Water Quality Agreement over the year, see the fact sheet called [Cleaning Up After Pollution](#).

Algal bloom in Lake Erie;

[https://commons.wikimedia.org/wiki/File:Algal\\_bloom\\_in\\_Lake\\_Erie\\_\(8740853887\).jpg](https://commons.wikimedia.org/wiki/File:Algal_bloom_in_Lake_Erie_(8740853887).jpg)



In fact, when Dr. Seuss wrote "The Lorax" in 1971, one part of the story originally went like this:

You're glumping the pond where the Humming-fish hummed!  
No more can they hum, for their gills are all gummed.  
So I'm sending them off. Oh their future is dreary.  
They'll walk on their fins and get woefully weary

in search of some water that isn't so smelly.  
I hear things are just as bad up in Lake Erie.

Appendix X (cont.)

In 1974, the final line about Lake Erie was removed, after the lake was cleaned up.

### WHAT'S THE BAD NEWS?

A Canadian study by Sierra Legal graded 20 Canadian and American cities on their wastewater treatment facilities. There were four Canadian cities in the top ten and seven Canadian cities in the bottom ten. The cities of Kingston, Sault Ste. Marie and Windsor (all in Ontario) were the only three cities to have wastewater treatment facilities that were capable of only primary treatment, which only removes up to 55 percent of fecal coliforms from the water! There were more American cities than Canadian cities that had adequate phosphorus removal processes. It has been estimated that between \$30 billion and \$40 billion are needed over the next 15 years to bring Ontario water and wastewater treatment systems to effective treatment levels.

The Great Lakes have been receiving large quantities of many harmful substances for many years. Even after laws are developed to limit the amount of pollution, it takes many years before the lake can return to normal. Many toxic substances can bioaccumulate as they move up the food chain. This means that, while the chemical concentration may be low in the water, it may be a little more concentrated in a minnow, a little more concentrated in a small fish, and a little more concentrated in a larger fish, and so on. By the time the food chain reaches birds and other animals that eat fish, the concentration of toxic substances may be very high. In many of the states and in Ontario, there are warnings against human consumption of certain fish, because the toxins can be so concentrated that people would become ill. According to the Environmental Protection Agency, the toxins in Lake Michigan were so concentrated in the mid-1990s that one meal of lake trout from Lake Michigan would expose a person to more PCBs than they would be exposed to if they drank lake water for their entire life!

Another area of concern is the biodiversity of the aquatic life in the Great Lakes. The balance of the aquatic ecosystem in the Great Lakes has been disturbed with the introduction of exotic species. Non-native plants and animals have eliminated certain species of native plants and animals. This change may not seem significant, but it can significantly change the habitat of the lake over time.

Warning Sign of Polluted Water on the Great Lakes;

<https://www.epa.gov/greatlakes#1>



## IS THERE ANY GOOD NEWS?

Appendix X (cont.)

There is some good news. The concentration of some chemicals, like polychlorinated biphenyls (PCBs; used as cooling and insulating fluids in industrial transformers) and polycyclic aromatic hydrocarbons (PAHs; emitted through the burning of fossil fuels) are decreasing, but it will take between 10 and 30 years to completely eliminate them from the water. The Great Lakes have been described as a giant set of lungs, which have finally been given a chance to exhale. In other words, the atmospheric concentrations of PCBs have decreased enough to allow the chemical to evaporate from the water. Between 1992 and 1996, the Great Lakes released ten tonnes more of PCBs than were put into them.

The Great Lakes Water Quality Agreement was a great turning point in the poor quality of the Great Lakes. There is still a great deal of pollution that enters the Great Lakes, but the improvement so far has shown that the efforts are not futile. Most areas of concern are near cities and industries, where pollution is more concentrated. In many regions, stringent waste disposal regulations are being developed and applied, and agricultural practices are being observed, so that runoff and sediment pollution can be minimized. The Great Lakes are an extremely important water source to Canadians and Americans, as well as to the world. It is very important that the lakes be protected, so that they can continue to provide safe drinking water for the 35 million people in the Great Lakes region, as well as sustainable industry and agriculture.

<https://www.thecanadianencyclopedia.ca/en/article/mining>. Accessed 11 October 2018.

Appendix Y

Excerpts from Sandlos, John and Arn Keeling. "Mining". *The Canadian Encyclopedia*, 04 March 2015, *Historica Canada*.

### **Mineral Processing and Associated Waste**

Typically, target minerals form a small fraction of mined rock; today's mines often exploit ores containing a fraction of a percent of valuable minerals. Mineral processing, or beneficiation, removes target minerals through various thermo-mechanical or chemical techniques. The waste material, a pulverized rock slurry known as tailings, poses a major disposal challenge. It often contains heavy metals (cadmium, arsenic, lead, zinc, etc.) that may be released into waterways, soil, and the air (as dust) at levels that threaten the health of humans and wildlife. Moreover, tailings from sulfide mineral deposits may react with water and air to produce sulfuric acid (or acid mine drainage) which can in turn dissolve more toxic heavy metals from surrounding rock or waste piles. In the case of uranium or radium mining, radioactive material within tailings may present a danger to local populations of humans and wildlife. At many mines, the sheer volume of waste rock and tailings can be staggering, creating large-scale, human-made topography such as ridges, hills, and the pits where the tailings were originally mined. The processing of ore in smelters, where rock is heated to very high temperatures to extract base metals, can result in smokestack pollution in the form of toxic compounds, such as sulfur dioxide and arsenic trioxide. While technological improvements have resulted in the increased capture of these pollutants prior to emission from smelter stacks, the collection of highly toxic dusts, such as arsenic trioxide, can pose additional waste disposal problems. More broadly, the combination of high postwar demand, declining ore grades, and increasing volumes of rock and tailings has meant that mining now generates the largest waste stream of any industry.

**DEFORESTATION**

**1. Deforestation is permanent forest loss.**

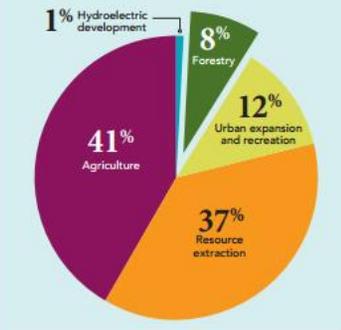
Deforestation is the clearing of forests to make way for non-forest land uses, such as urban development or agriculture. It is different from temporary forest cover loss from things like harvesting, insect outbreaks or forest fires, where the forest will grow back. Deforestation is serious because it reduces biodiversity and wildlife habitat, affects water and soil quality, and has an influence on climate change.

**2. Deforestation in Canada is tiny.**

Canada's 348 million hectares of forest lands represent about 9% of the world's forests, but contribute just 0.3% to deforestation globally. In 2010, about 46,000 hectares of Canadian forest were converted to another land use. **Annually, this represents less than 0.02% of Canada's forest land.**

**Five things you need to know about deforestation in Canada.**

Of the less than 0.02% of Canada's forests lost to deforestation each year, these are the causes:



**5. Forestry isn't a top cause.**

In 2010, forestry was responsible for about 8% of Canada's deforested area, primarily through the creation of forestry roads. Harvesting does not cause deforestation, as trees are required to be regenerated after harvest. Clearing forests for agricultural use accounted for 41% of deforestation in Canada in 2010. The remaining causes of deforestation in Canada are resource extraction (37%), urban expansion and recreation (12%), and hydroelectric development (1%).

**3. Canada monitors deforestation closely.**

Natural Resources Canada–Canadian Forest Service (NRCan–CFS) tracks what is happening to Canada's forests, using a combination of satellite data, aerial photos and other information. NRCan–CFS tracks where and when deforestation has occurred and the causes of land-use change, such as urban development, agriculture or resource extraction.

<http://blog.resolutefp.com/2016/06/truth-deforestation-canada/>

**4. Deforestation rates in Canada are declining.**

Over the past 20 years, annual deforestation rates in Canada have declined, dropping from 64,000 hectares in 1990 to about 46,000 hectares in 2010. Since 1990, about 0.33% of Canada's total forest area has been converted to other land uses. Governments and industry are trying to better understand and reduce deforestation in Canada by planning land uses over an entire landscape and encouraging different land users to work together.



Georgia Department of Education

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<https://www.thoughtco.com/deforestation-in-canada-1203594>

### **Deforestation in Canada by Frederic Beaudry. Updated March 17, 2017**

Deforestation, or the loss of forests, is progressing at a fast pace worldwide. This issue gets much attention in tropical regions where rainforests are converted to agriculture, but large swaths of boreal forests are cut each year in colder climates. Canada has long enjoyed an excellent standing in terms of environmental stewardship. What does Canada’s recent record on deforestation look like?

#### **An Important Player in the Global Forest Picture**

Canada’s use of its forest is significant because of the global importance of its wooded lands – 10% of the world’s forests are located there. Most of it is boreal forest, defined by stands of coniferous trees in subarctic regions. A lot of the boreal forest is far from roads and this isolation makes Canada the steward of much of the remaining primary or “pristine forests” not fragmented by human activity. These wilderness areas play important roles as wildlife habitat and as climate regulators. They produce large amounts of oxygen and store carbon, thus reducing atmospheric carbon dioxide, which is a key greenhouse gas.

#### **Net Losses**

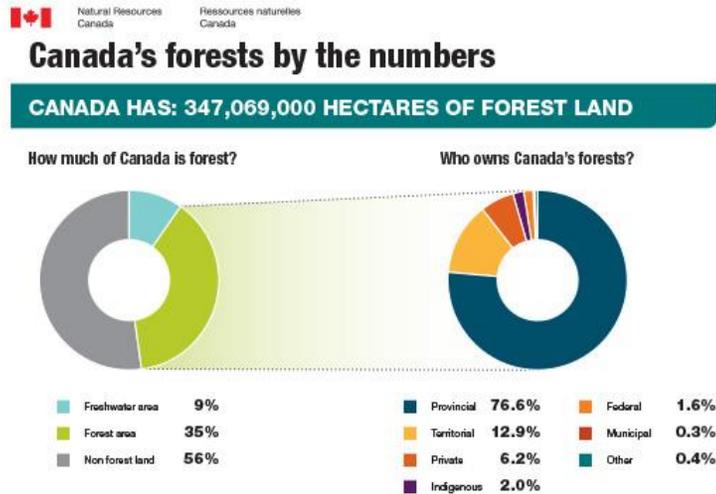
Since 1975, about 3.3 million hectares (or 8.15 million acres) of Canadian forest were converted to non-forest uses, representing about 1% of the total forested areas. These new uses are primarily agriculture, oil/gas/mining, but also urban development. Such changes in land use can truly be considered deforestation, as they result in permanent or at least very long lasting loss of forest cover.

#### **Cut Forests Does Not Necessarily Mean Lost Forest**

Now, a much greater amount of forest is cut each year as part of the forest products industry. These forest cuts amount to around a half million hectares a year. The main products issued from Canada’s boreal forest are softwood lumber (typically used in construction), paper, and plywood. The forest products sector’s contribution to the country’s GDP is now only slightly more than 1%. Canada’s forestry activities do not convert forests into pastures like in the Amazon Basin, or into palm oil plantations like in Indonesia. Instead, forestry activities are done as part of management plans prescribing practices to encourage natural regeneration, or the direct replanting of new seedling trees. Either way, the cutover areas will return to forest cover, with only a temporarily loss of habitat or carbon storing capabilities. Around 40% of Canada’s forests are enrolled in one of the three leading forest certification programs, which require sustainable management practices.

#### **A Major Concern, Primary Forests**

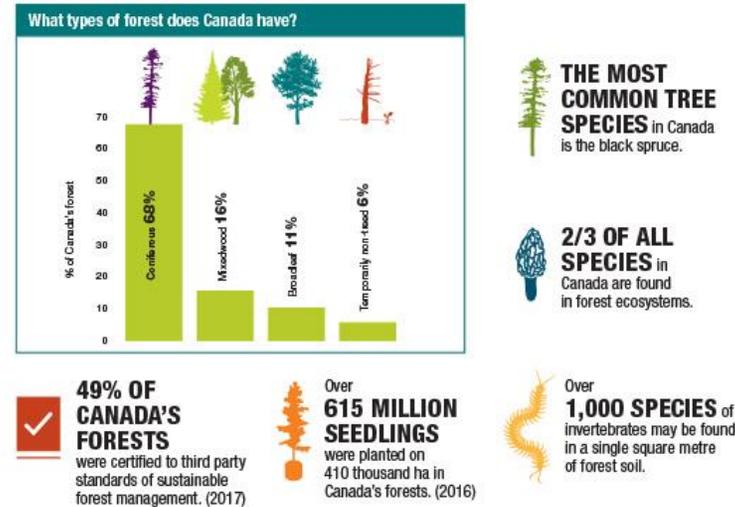
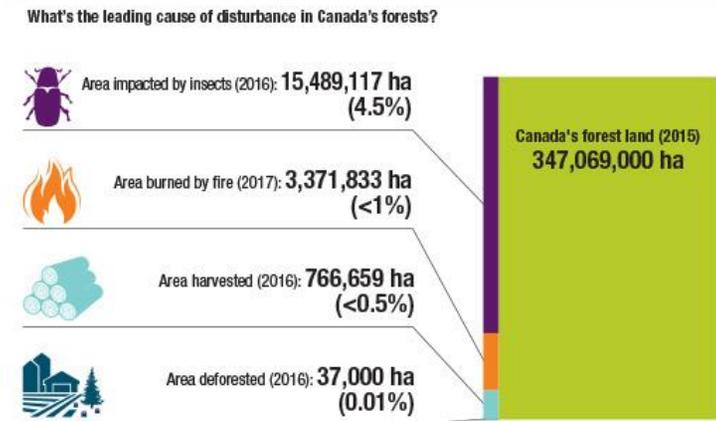
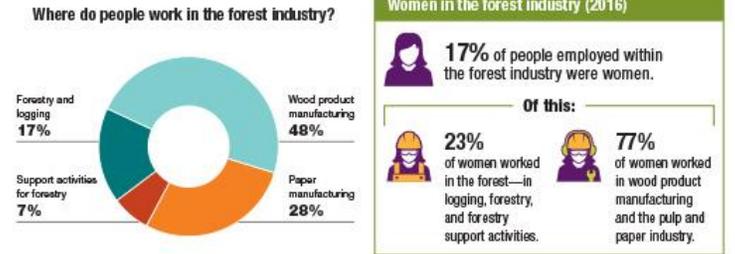
The knowledge that most forests cut in Canada are managed to grow back doesn’t detract from the fact that primary forest continued to be cut at an alarming rate. Between 2000 and 2014, Canada is responsible for the greatest total loss, acreage-wise, of primary forest in the world. This loss is due to the continued spread of road networks, logging, and mining activities. Over 20% of the world’s total loss of primary forests occurred in Canada. These forests will grow back to, but not as secondary forests. Wildlife necessitating large amounts of land (for example, woodland caribou and wolverines) will not come back, invasive species will follow the road networks, as will hunters, mining prospectors, and second-home developers. Perhaps less tangibly but just as importantly, the unique character of the vast and wild boreal forest will be diminished.



The forest industry contributed **\$24.6 BILLION** (1.6%) to Canada's gross domestic product (GDP). (2017)

The forest industry directly employed **209,940** people (1.1% of total employment). (2017)

**6%** of those employed in the forest industry were **INDIGENOUS**. (2016)



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## *Environmental Superhero*



Appendix CC

**Your Task:** Create a superhero to fight an environmental issue in Canada. You may choose from pollution in the Great Lakes, acid rain, mining in the Great Shield or logging. The following is a list of requirements.

1. You need to create your superhero and identify what their superpower is that will help reduce the effects of the environmental issue. (You may draw your superhero and label anything that will help them in solving your issue. For example, if you could put special glasses on your hero that are used to record pollution in the Great Lakes and trace it back to its source.)
    - a. When creating this superpower, you need to include *how* you think it will help your issue. When explaining this, you will include the causes of the issue.
  2. You may also create other “tools” that they may use to help solve the problems your issue has created.
  3. Introductory paragraph
    - a. Explains the causes and effects of the environmental issue.
    - b. What is being done currently to help the environment.
    - c. Why your environmental superhero is needed
- Just remember you need to provide evidence about the causes, effects and solutions that you have gathered from your readings, videos, pictures, etc.
  - You will be assessed on your knowledge of the issue as well as creativity when developing your superhero.
  - Have fun as you enter the creative zone where your creative powers can take over!

## Culminating Unit Performance Task

### Brain Chain

#### Brain Chain Directions (Appendix DD)

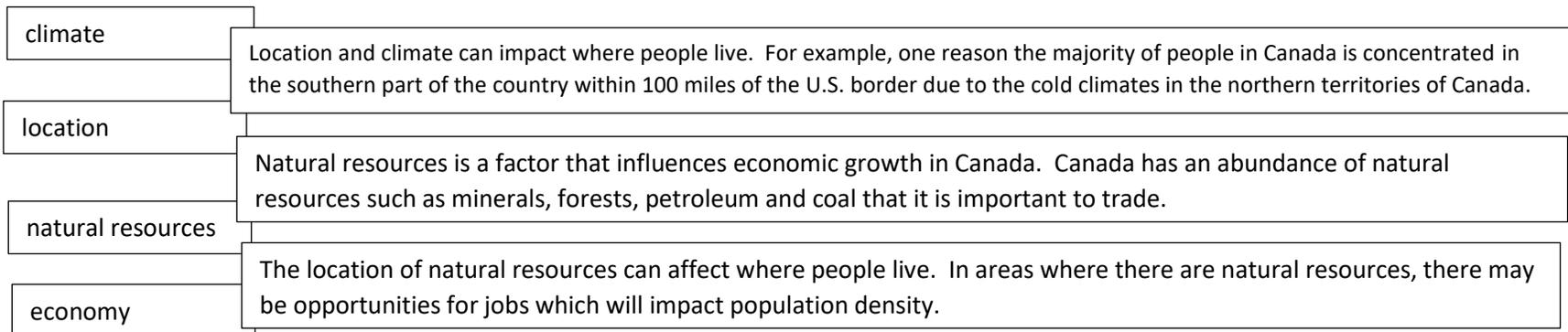
#### Brain Drain Student Response Sheet (Appendix EE and FF)

**NOTE: Differentiation:** There are 2 response sheets. Appendix EE is for the more advanced students. Appendix FF is for students who may need more assistance. The words are placed for them. Students will need to make the connection statements.

**Purpose:** To make connections between terms, places, concepts studied in the unit.

1. Students are given 15 terms, places, concepts.
2. They choose 8 terms and make a chain to show the connections between terms using information learned from the unit.

**Example:** This sample does not use words from the list. It is for an example only.



<p><b>GSE Standards and Elements</b></p>	<p><b>SS6G4 Locate selected features of Canada.</b></p> <ul style="list-style-type: none"> <li>c. Locate on a world and regional political-physical map: the St. Lawrence River, Hudson Bay, Atlantic Ocean, Pacific Ocean, the Great Lakes, Canadian Shield, and Rocky Mountains.</li> <li>d. Locate on a world and regional political-physical map Canada and the province of Quebec.</li> </ul> <p><b>SS6G5 Explain the impact of location, climate, distribution of natural resources, and population distribution on Canada.</b></p> <ul style="list-style-type: none"> <li>a. Describe how Canada’s location, climate, and natural resources impact trade and affect where people live.</li> </ul> <p><b>SS6G6 Explain the impact of environmental issues in Canada.</b></p> <ul style="list-style-type: none"> <li>3. Explain the causes and effects of pollution and acid rain in Canada to include the Great Lakes.</li> <li>4. Explain the causes and effects of the extraction of natural resources on the Canadian Shield (e.g., mining and logging).</li> </ul> <p><b>SS6E5 Give examples of how voluntary trade benefits buyers and sellers in Canada.</b></p> <ul style="list-style-type: none"> <li>e. Explain how specialization encourages trade between countries.</li> <li>f. Compare and contrast different types of trade barriers, such as tariffs, quotas, and embargoes.</li> <li>g. Explain why international trade requires a system for exchanging currencies between nations.</li> <li>h. Explain the functions of the North American Free Trade Agreement (NAFTA).</li> </ul> <p><b>SS6E6 Describe factors that influence economic growth and examine their presence or absence in Canada.</b></p> <ul style="list-style-type: none"> <li>d. Describe the role of natural resources in a country’s economy.</li> </ul>
<p><b>Literacy Standards</b></p> <p><b>(Standards used depend upon the choice of the activity.)</b></p>	<p><u><b>Reading Skills</b></u></p> <p><b>L6-8RHSS1:</b> Cite specific textual evidence to support analysis of primary and secondary sources.</p> <p><b>L6-8RHSS2:</b> Determine the central ideas or information of a primary or secondary source; provide an accurate summary of the source distinct from prior knowledge or opinions.</p> <p><b>L6-8RHSS4:</b> Determine the meaning of words and phrases as they are used in a text, including vocabulary specific to domains related to history/social studies.</p> <p><b>L6-8RHSS5:</b> Describe how a text presents information (e.g., sequentially, comparatively, causally).</p> <p><b>L6-8RHSS7:</b> Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.</p> <p><u><b>Writing Skills</b></u></p> <p><b>L6-8WHST8:</b> Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.</p>

	<p><b><i>L6-8WHST9:</i></b> Draw evidence from informational texts to support analysis reflection, and research.</p>
<p><b>Social Studies Matrices</b> (Standards used depend upon the choice of the activity.)</p>	<p><b><u>Map and Globe Skills</u></b></p> <p>4. compare and contrast the categories of natural, cultural, and political features found on maps</p> <p>6. use map key/legend to acquire information from historical, physical, political, resource, product, and economic maps</p> <p>8. draw conclusions and make generalizations based on information from maps</p> <p>11. compare maps with data sets (charts, tables, graphs) and /or readings to draw conclusions and make generalizations</p> <p><b><u>Information Processing Skills</u></b></p> <p>1. compare similarities and differences</p> <p>3. identify issues and/or problems and alternative solutions</p> <p>5. identify main idea, detail, sequence of events, and cause and effect in a social studies context</p> <p>7. interpret timelines, charts, and tables</p> <p>11 draw conclusions and make generalizations</p> <p>12. analyze graphs and diagrams</p> <p>15. determine adequacy and/or relevancy of information</p> <p>17. interpret political cartoons</p>
<p><b>Enduring Understanding(s)</b></p>	<ul style="list-style-type: none"> <li>• <b>Gain from Trade:</b> The student will understand that parties trade voluntarily when they expect to gain.</li> <li>• <b>Human Environmental Interaction:</b> The student will understand that humans, their society, and the environment affect each other.</li> <li>• <b>Location:</b> The student will understand that location affects a society’s economy, culture, and development.</li> <li>• <b>Production, Distribution, Consumption:</b> The student will understand that the production, distribution, and consumption of goods/services produced by the society are affected by the location, customs, beliefs, and laws of the society</li> <li>• <b>Gain from Trade:</b> The student will understand that parties trade voluntarily when they expect to gain.</li> </ul>

## Brain Chain Directions

Appendix DD

### How words are connected!

St. Lawrence River	Hudson Bay	economy	Natural resources	Great Lakes
Canadian Shield	Rocky Mountains	pollution	acid rain	mining
logging	Quebec	NAFTA	USMCA	tariffs

Your Goal: Make a chain of connections between terms and places.

1. Select 8 words from the list above. You must be strategic in your selection and placement of the words in order to make a connection.
2. Write the first two in the first 2 boxes. In the long box write a connection sentence(s) for the two words.
3. Continue this process until you have completed the connections for your 8 terms.

Example (Not using the words above)

climate	Location and climate can impact where people live. For example, one reason the majority of people in Canada is concentrated in the southern part of the country within 100 miles of the U.S. border due to the cold climates in the northern territories of Canada.
location	The location of natural resources can affect where people live. In areas where there are natural resources, there may be opportunities for jobs which will impact population density.
natural resources	Natural resources is a factor that influences economic growth in Canada. Canada has an abundance of natural resources such as minerals, forests, petroleum and coal that it is important to trade.
economy	

### Brain Chain

Appendix EE

1.

1. & 2.

2.

2. & 3.

3.

3. & 4.

4.

4. & 5.

5.

5. & 6.

6.

6. & 7

7.

7. & 8.

8.

### Brain Chain

Appendix FF

