WE Are Canada

CANADA’S RESOURCES

THEME: Environment

SUBJECTS: Social Studies, Geography

GRADE LEVEL: Grades 7 to 8

LESSON PACKAGE OVERVIEW:

Students will explore Canada’s natural resources by making connections between industries and geographical features across Canada’s 10 provinces and three territories. They will use the following framework: What’s there? Why (is it) there? Why care? After producing posters to share their learning, students will use their newfound knowledge to collaborate on an interactive Jeopardy!-style gameshow focused on Canada’s natural resources. Finally, students will host their gameshow for others as a fun way to raise awareness about natural resources and sustainability in Canada.

ESSENTIAL QUESTIONS:

► How can having a natural resource affect a province and how are Canadians responsible for the protection of such natural resources?
► How do location, climate and natural resources influence Canadians? What is the connection between geographical location and climate for Canada’s natural resources?

STUDENT LEARNING GOALS:

Students will:

• Investigate resource industries in Canada and the opportunity that each resource provides to Canadians
• Compare the climate and physical nature of the land across Canadian provinces to develop an understanding of the links between environment and natural resource industries
• Understand the concept of sustainability and the challenges facing Canadians regarding the future use of natural resources

WORD BANK

Agriculture—The science or practice of farming, including cultivation of the soil for the growing of crops and the rearing of animals to provide food, wool and other products
Alternative energy—energy derived from moving water, wind, the sun and gas from animal waste
Environmental factors—relating to the impact of the natural world on human activity
Forestry—the science or practice of planting, managing and caring for forests
Fossil fuel—any fuel found underground, buried within sedimentary rock, including coal, oil and natural gas
Hydroelectric—the production of electricity by the force of fast-moving water such as rivers or waterfalls
Industries—economic activity concerned with the processing of raw materials and manufacturing goods in factories
Livestock—animals and birds that are kept on a farm, such as cows, sheep or chickens
Manmade resource—items or substances that have value to human lives that do not occur in the natural world
Mining—the industry or activity of removing substances such as coal or metal from the ground by digging
Natural resource—a “gift of nature”—air, land, water, forests, wildlife, topsoil, minerals—used by people for production or for direct consumption
Non-renewable resource—a material which cannot be restored after use, such as natural gas
Oil and natural gas—non-renewable resources and types of fossil fuels that are commonly used to create energy
Renewable resource—a resource which is not diminished when used, but which will be restored in a lifetime
Resource—Something that a country has and can use to increase its wealth
Topography—the arrangement of the natural and artificial physical features of an area
Solar panel—a panel designed to absorb the sun’s rays as a source of energy for generating electricity or heating
Recommended Assessment for Learning:

You know your students best—their learning styles and preferences, skill levels and knowledge. You are also best positioned to anticipate the habits of mind that will make this lesson package successful.

In this lesson package, teaching strategies include collaborative group work, class discussion, independent reflection and suggestions for demonstration of learning include written reflection, exit tickets and student-generated discussion. Please make any accommodations or modifications that serve your students.

If the class does not have Internet access, students may create a Jeopardy!-style game based from facts from class discussion in addition to using facts from classroom texts or teacher notes.

**MATERIALS AND RESOURCES**

- Blackline Master 1: Canada’s Provinces and Territories and Their Natural Resources
- Blackline Master 2: Introduction, Rules and Clue Creation Guide
- Blackline Master 3: Jeopardy!-Style Example Questions
- PowerPoint presentation of images across Canadian provinces and their natural resources (on USB and online)
- Computer and projector for viewing slideshow
- Access to computers with Internet for student research
- **For the Jeopardy!-style gameshow board:**
  - One poster board
  - Coloured index cards (or white index cards)
  - Glue sticks
  - Double-sided tape
  - Printed numbers (or markers for writing numbers)
  - Handheld whiteboard

**Sustainable development**—development that meets the needs of the present without compromising the ability of future generations to meet their own needs

**Wind turbine**—a turbine having a large vaned wheel rotated by the wind to generate electricity
LESSON 1:
OUR GIVING PLANET

SUGGESTED TIME:
150 minutes

Investigate and Learn

1. Write the word “resource” on the board. Ask students to think about what a resource is. Write students’ responses on the board. E.g., something that is available, useful or helpful.

2. Explain that Canada is one of the richest countries in terms of its natural resources. Ask students if they can think of examples of natural resources available in Canada. Have them do this as a think-pair-share. E.g., forestry, fishing, mining, oil and natural gas, hydroelectric energy (dams), alternative energy, agriculture and livestock.

3. Write the definition of a natural resource on the board:

   **Natural resource**—Something, such as a forest, a mineral deposit or fresh water, that is found in nature and is necessary or useful to humans

4. Explain to students that we all use natural resources in different ways and amounts, many on a daily basis. Because some natural resources are not obvious and some resources are used infrequently, people might not be aware they are consuming those resources. Ask students: What are some natural resources you use every day? E.g., water, oil, air, gasoline and plants and animals for food.

5. Explain that natural resources come in two types; renewable and non-renewable. Renewable resources, such as water and forestry, naturally replenish. Non-renewable resources, however, are used faster than they can be replenished, if we continue to use them at a fast rate, they will vanish. For example, copper might take millions of years to regenerate.

6. Take a quick poll of students; ask them the following three questions:
   - Have you been a passenger in a car?
   - Do you take warm/hot showers or baths?
   - Do you drink from plastic cups or bottles?

   All hands should go up, reinforcing the fact that we all use non-renewable natural resources, even if it is not obvious.

7. Tell students that when they are a passenger in a vehicle or run a machine that uses gasoline, such as a dirtbike or lawnmower, they’ve consumed a non-renewable petroleum-based resource that cannot be replaced. The same goes for enjoying a hot shower as water heaters use fuel. And plastic is made using petroleum products.

8. Inform students that because Canada is such a large country spanning nearly 10 million square kilometers and our population of 36 million is relatively small in comparison to our land mass, we often don’t think about our natural resources running out.

9. **RECOMMENDED ASSESSMENT AS LEARNING:** Consider having students create a chart that links a simple action and the possible links to resources. Ask students to reflect during the process.

10. Tell students that during the next lessons they will be studying Canada’s natural resources and the industries they support.

11. Show students the PowerPoint presentation titled “Canada’s Natural Resources” from the USB or WE.ca. The presentation consists of only images—three for each province and territory. As you move through the images, have students keep a list of the resources that each province has—according to the images.

12. After showing the PowerPoint, distribute the list of natural resources by province and territory (Blackline Master 1: Canada’s Provinces and Territories and Their Natural Resources).

13. **RECOMMENDED ASSESSMENT AS LEARNING:** What did you notice about the variety of natural resources found within Canada? Ask students to keep track of the natural resources they use from the time they leave school to when they enter school the next day. Students can share this at the beginning of the next lesson.

EDUCATOR’S NOTE: Whether water is a renewable resource or not is highly debated. Ask students which category they believe it fits in and discuss why.
LESSON 2:
NATURAL RESOURCES AND THEIR IMPACTS ACROSS CANADA

SUGGESTED TIME:
75 minutes

1. Inform students that they will explore the concept of sustainability and how it relates to Canada’s non-renewable natural resources. They will then perform an in-depth analysis of specific provinces and territories and the impact natural resources has on the province’s industries and jobs.

2. Introduce the term “sustainable development” from Our Common Future, also known as the Brundtland Report, published in 1987 by the United Nations World Commission on Environment and Development (WCED).

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:

• the concept of needs, in particular the essential needs of the world’s poor, to which overriding priority should be given;

• and the idea of limitations imposed by the state of technology and social organization on the environment’s ability to meet present and future needs.”

3. After reviewing the concept of sustainability and the types of natural resources found in Canada, have students move into groups of two to three. Tell them that each small group will be in charge of investigating the natural resources of a specific province or territory, the industries formed from these natural resources and how the economy of that province or territory is influenced by its natural resources. Tell students that fun and interesting facts are also welcome.

4. During their research students must answer the following questions:
   a. The name of the province/territory
   b. The name of the capital city and any major rivers or lakes labelled on a map
   c. The population of the major cities as well as the province’s or territory’s total population
   d. The environment/climate of the province/territory
   e. A description of the physical region that the province/territory belongs to (topography)
   f. The natural resources found within the province/territory
   g. Industries or products that the province/territory is known for that are linked to the natural resources
   h. The population of residents that are employed in each natural resource industry found in the province or territory
   i. How much the province/territory recycles
   j. Any interesting facts about the province

EXTENSION: Have students calculate the percentage of the population employed within the natural resource industry.

EDUCATOR’S NOTE:
While observing students and their research, make sure to promote the practices of conservation and environmental protection. Mention that threats to Canada’s natural resources, such as overuse and pollution, require our attention. Some provinces are better than others in terms of addressing these pressing concerns. While students are investigating, invite them to consider their own impact on the natural resources they use on a daily basis.

EDUCATOR’S NOTE: In the interest of fairness, write the names of the provinces and territories on slips of paper and put them in a hat. Have student groups select a slip of paper. They will be responsible for researching this area. In the next lesson, they will use their research to create a Jeopardy-style gameshow to raise awareness about natural resources and sustainability.

RECOMMENDED ASSESSMENT AS LEARNING: Ask students to reflect on their findings. Was there anything that surprised them in terms of the size and scope of the natural resource industry in the provinces or territories they studied?
LESSON 3:  
NATURAL RESOURCES OF CANADA GAME

SUGGESTED TIME:  
150 minutes

Action Plan

1. Remind students of the process of a Jeopardy-style game referring to the set of basic rules noted on Blackline Master 2: Introduction, Rules and Clue Creation Guide.

2. Provide students with additional support by showing a traditional game of Jeopardy! in action, play the sample clip of contestants competing in a Beyoncé-themed category on Jeopardy! youtube.com/watch?v=iReQ3fgqj2g (1:29).

3. Divide students into five groups that correspond to the five categories of clues: Types of Natural Resources, Jobs, Economy, Climate and Geography.

4. Review a model set of clues linked to the subject of sustainability to demonstrate how to construct clue-response pairs from Blackline Master 3: Jeopardy-Style Example Questions with students.


6. Have students work for the remainder of the period on their clue generation.

7. At the end of the class period ask students to identify goals for participation in their game. Note that if their efforts have success, opportunity can be provided for students to develop “round 2” clues as an additional challenge and opportunity for learning.

8. Ask students how many participants (or games played) would they consider a success and why.

9. RECOMMENDED ASSESSMENT AS LEARNING: Have students complete an exit ticket responding to the following question: what surprised you most about what you learned about natural resources today?
LESSON 4:
RAISING AWARENESS THROUGH A JEOPARDY!-STYLE GAME SHOW

SUGGESTED TIME:
100 minutes

Take Action

1. Students will now have the opportunity to see their self-produced Jeopardy!-style game in action. Run the game using the following rules:

   EDUCATOR’S NOTE: Ensure that students are aware of the rules of the game.

   • Using textbooks and notes are not allowed.
   • Teams can be self-selected.
   • Each team may keep their own score on a sheet of paper or select a scorekeeper.
   • Select three individuals or teams to participate in each game.
   • Participants have 15 seconds to write down their question on a handheld whiteboard.
   • Award points to all participants who record the correct question.
   • Rotate the team who gets to choose the next clue to be read.
   • The individual or team with the most points at the end of the game is recognized as the winner and leaves with recognition or a prize (prizes can be sustainability-themed—like a reusable water bottle or recycle sticker.)
LESSON 5: REPORT AND CELEBRATE

SUGGESTED TIME: 75 minutes

Report and Celebrate

1. Celebrate the success of your efforts by extending an invitation to others to promote awareness of Canada’s natural resources. Continue to engage others in conversations about the topic.

2. Document the success of your Jeopardy!-style game show by sharing results during morning announcements, in the school’s newspaper or on class bulletin boards.

3. Challenge those you share with to learn about and take action on an issue. This sharing will help raise awareness about Canada’s natural resources and current and proposed sustainability projects across the country. Challenge them to try one of the following:
   - Commit to raising awareness about the environment by taking the WE Are Canada Pledge. If students are interested, visit: WE.ca for more information and to take the pledge.
   - Start their own WE Take Charge Campaign. Use the campaign to raise awareness about conserving Canada’s natural resources by increasing recycling efforts and finding alternative sources of energy.

REFLECT:

4. As a class, reflect on the learnings and experience from the Action Plan and Take Action sections of the lesson plan package. Think about the measureable goals that were set for the Take Action section and using the evidence collected, reflect upon how well these goals were achieved through the action.

5. Write down the goals on the front board and ask students to reflect through a written, verbal or visual response. Within the reflection, students should link the evidence collected in the Take Action section and directly align this to the measureable goal. Does the evidence demonstrate that the goal was met?

6. Ask students to reflect further to understand the deeper impact of the Take Action section and to consider how they can ensure their event/campaign has lasting impacts:
   - How will we ensure that the initiatives we started will not be a one-time event, but instead continue each year?
   - How might we support the initiative in other school communities as needed?
   - How will involvement in WE Take Charge help us deepen our understanding of important environmental issues?

7. Through research completed, actions implemented by students and the process of reflection, students should be able to understand the importance of helping causes that are directly linked to the environment.

8. Ask students to reflect on their action in the Take Action section.

9. **RECOMMENDED ASSESSMENT AS LEARNING:** Informally assess the depth and scope of each line of questioning, noting that student clues should showcase a basic understanding of the topic selection as well as a linear progression of additional knowledge. For the purpose of this type of assessment, whole groups will need to be assessed collectively.
Newfoundland and Labrador
  • Fisheries
  • Mining oil and natural gas
  • Hydroelectricity

PEI
  • Agriculture

Nova Scotia
  • Fisheries
  • Mining—coal
  • Agriculture
  • Forestry
  • Off-shore oil and gas

New Brunswick
  • Forestry
  • Agriculture
  • Fisheries
  • Mining

Quebec
  • Forestry—pulp and paper
  • Energy—hydroelectricity
  • Mining—asbestos, iron, gold

Ontario
  • Agriculture
  • Energy—hydroelectricity
  • Forestry
  • Mining—nickel, uranium, zinc, gold, silver and copper

Manitoba
  • Agriculture
  • Mining
  • Energy—hydroelectricity

Saskatchewan
  • Mining—uranium, potash, oil and natural gas
  • Agriculture

Alberta
  • Mining—coal, oil and natural gas
  • Agriculture
  • Livestock—cattle

British Columbia
  • Forestry—lumber, pulp and paper
  • Mining—coal, natural gas, copper
  • Fishing
  • Agriculture
  • Energy—hydroelectricity
  • Livestock—cattle

Northwest Territories
  • Mining—diamonds, off-shore petroleum

Yukon
  • Mining—off-shore gas and oil

Nunavut
  • Mining—off-shore gas and oil
Introduction

This Jeopardy!-style game for the classroom is a team game designed to help you review and retain information about Canada’s provinces and territories and our country’s natural resources.

Game Rules:

• Using textbooks and notes is not allowed.
• Teams can be self-selected.
• Each team may keep their own score on a sheet of paper or select a scorekeeper.
• Select three individuals or teams to participate in each game.
• Participants have 15 seconds to write down their question on a handheld whiteboard.
• Award points to all participants who record the correct question.
• Rotate the team who gets to choose the next clue to be read.
• The individual or team with the most points at the end of the game is recognized as the winner and leaves with recognition or a prize, (prizes can be sustainability-themed—like a reusable water bottle or recycle sticker.)

Writing Jeopardy!-Style Clues:

• Teams will need pencils and paper or a computer, as well as reference materials (history books, encyclopedias, previous work samples, Internet research, etc.).

Steps:

For your team’s category, determine the desired response to your first clue, it should be easy and phrased as a question. In the Sustainability category, a good example response would be: “What is oil?” Since oil is a well-known non-renewable resource that is found in Alberta, the clue could be “This non-renewable resource is mostly found in Alberta and is expected to run out worldwide in 40 years.” Remember that clues should be written in the form of statements.

Write four more clues, with the level of difficulty increasing alongside the dollar amount each question is worth. Often all it takes to turn a $100 clue into a $300 clue is using a more obscure fact.
$100

Clue: This non-renewable resource is mostly found in Alberta and is expected to run out worldwide in 40 years.

Response: What is oil?

$200

Clue: This material takes 100 to 400 years to break down in a landfill.

Response: What is plastic?

$300

Clue: This renewable energy source provides more than half of Canada’s electricity.


$400

Clue: This kind of renewable energy is captured in the form of heat.

Responses: What is solar energy? [OR] What is geothermal energy?

$500

Clue: This province has 99 percent of its residents using a recycling program—the highest rate in the country.

Response: What is Prince Edward Island?
Appendix: Image Sources for PowerPoint: Canada’s Natural Resources

1. canada.com/hook+canada+jeopardizing+fish+stocks+with+poor+management+report+says/6091501/story.html
4. britannica.com/place/Prince-Edward-Island
6. panoramio.com/photo/10403313
7. thechronicleherald.ca/business/1284726-taylor-lets-be-cautious-about-rosy-views-of-n.s.-economy
8. thechronicleherald.ca/business/25842-logging-cutbacks-may-pay-dividends-carbon-credits
9. energy.novascotia.ca/oil-and-gas
10. forestinfo.ca/forest-renewal/
11. theguardian.pe.ca/News/Local/2015-07-17/article-4217308/Potatoes-New-Brunswick-leads-project-to-improve-yields/1
13. naturalresourcesmagazine.net/?article=the-new-normal#prettyPhoto
15. lapresse.ca/actualites/justice-et-affaires-criminelles/201006/11/01-4289259-crash-au-nord-de-manic-5-le-nez-de-lhydravion-retrouve.php
17. rurallivingcanada.blogspot.ca/2012/09/canadians-are-increasingly-positive.html
18. commons.wikimedia.org/w/index.php?curid=2564777
21. mbagsocieties.ca/history/
22. cbj.ca/vale-paring-down-nickel-ops-in-manitoba/
23. powerforthefuture.ca/2014/06/repowering-manitoba/
24. cjme.com/article/180522/sask-benefit-canada-china-uranium-export-agreement
25. croplife.ca/2015/09
26. mining.com/oil-price-debacle-likely-to-drive-alberta-into-recession-report-67435-92554/
27. sidneyblake.com/2014/08/chasing-crops-alberta-agriculture-photography/
29. financialpost.com/related/topics/forestry+british+columbia+brink/1779267/story.html
30. opentextbc.ca/geology/highland-valley-copper-mine-at-logan-lake/
31. this.org/2011/04/04/bc-salmon/
32. yppofbc.ca/argiculture/
34. mining.com/diavik-diamond-mine/
35. ngm.nationalgeographic.com/2014/02/yukon/nicklen-photography#/11-faro-mine-complex-670.jpg
36. en.wikipedia.org/wiki/Jericho_Diamond_Mine