



EXPEDITIONARY
LEARNING

Grade 5: Module 3B: Unit 2: Lesson 7

Research Practice, Part 2: Natural Resource Development and How it Modifies the Physical Environment



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.

Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)

- I can quote accurately from a text when explaining what the text says using explicitly and when drawing inferences. (RI.5.1)
- I can explain important relationships between people, events, and ideas in a historical, scientific, or technical text using specific details in the text (RI.5.3)
- I can integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (RI.5.9)
- I can conduct short research projects that use several sources to build knowledge about multiple aspects of a topic. (W.5.7)
- I can gather relevant information from print and digital sources, summarize information in notes and finished work, and provide a list of sources. (W.5.8)

Supporting Learning Targets

- I can build knowledge about how Canada's resources meet people's needs and wants and how resource industries modify the environment, by using several sources to conduct research.
- I can explain how Canada's resources meet people's needs and wants and how resource industries modify the environment, by quoting accurately from sources.
- I can synthesize my research by paraphrasing information from a variety of texts and providing a list of sources.

Ongoing Assessment

- Modifying the Physical Environment research web (from homework)
- Research notes



Agenda	Teaching Notes
<ol style="list-style-type: none">1. Opening<ol style="list-style-type: none">A. Engaging the Reader: Modifying the Physical Environment Resource Web (5 minutes)2. Work Time<ol style="list-style-type: none">A. Researching in Groups (35 minutes)B. Partner and Whole Group Share (15 minutes)3. Closing and Assessment<ol style="list-style-type: none">A. Synthesizing Information (5 minutes)4. Homework<ol style="list-style-type: none">A. Use the resources you have analyzed and interpreted in the lesson to complete your resource web.B. Read your independent reading book for at least 15–20 minutes.	<ul style="list-style-type: none">• In this lesson, students practice the research skills they were introduced to in the previous lesson with three new resources. In order to be gradually released from guided instruction in preparation for the End of Unit 2 Assessment, students work in groups with minimal teacher assistance or modeling; however, as you circulate, if you spot common issues with the research process students are following, use these issues as teaching points when you refocus the whole group toward the end of the lesson.• The graph does not provide answers to the “meeting wants and needs” question. Make sure students are aware that not all of the resources answer both of the questions.• In advance:<ul style="list-style-type: none">– Review the Popcorn Read protocol (see Appendix).• Post: Learning targets.



Lesson Vocabulary	Materials
paraphrasing	<ul style="list-style-type: none"> • Canada's Natural Resources anchor chart (begun in Lesson 1) • Canada's Natural Resources anchor chart (completed, for teacher reference; see Unit 2 Overview) • Research note-catcher (from Lesson 6; one new blank copy per student and one for display) • Research Skills and Processes anchor chart (from Lesson 6; one for display) • Research folders (one folder per team; one of each resource per student): <ul style="list-style-type: none"> – Text: "Deforestation in Canada" – Image: "Oil: A Promise of Wealth" – Graph: "Releases of Lead to Water by Source, Canada, 2011" • Research note-catcher, Part 2 (suggested answers, for teacher reference) • Homework: Modifying the Physical Environment: Lesson 7 resource web (one per student)

Opening	Meeting Students' Needs
<p>A. Engaging the Reader: Modifying the Physical Environment Resource Web (5 minutes)</p> <ul style="list-style-type: none"> • Remind students that for homework they were to reread the research resources and fill out the Modifying the Physical Environment research web. • Invite students to share their resource webs with their group, to justify their responses on the resource web to the rest of the group, and to make any additions or revisions based on what they see and hear from others. • Refocus students whole group. Invite volunteers to share their responses aloud. Add appropriate student suggestions to the Canada's Natural Resources anchor chart. Refer to Canada's Natural Resources anchor chart (completed, for teacher reference) for how the anchor chart should look. 	<ul style="list-style-type: none"> • Provide sentence frames to allow all students access to the discussion: "The resource _____ is used to make products like _____, which meet people's needs and wants because _____."



Work Time	Meeting Students' Needs
<p>A. Researching in Groups (35 minutes)</p> <ul style="list-style-type: none"> Focus students on the learning targets. Invite them to read them with you: <ul style="list-style-type: none"> * "I can build knowledge about how Canada's resources meet people's needs and wants and how resource industries modify the environment, by using several sources to conduct research." * "I can explain how Canada's resources meet people's needs and wants and how resource industries modify the environment, by quoting accurately from sources." * "I can synthesize my research by paraphrasing information from a variety of texts and providing a list of sources." Remind students of what <i>paraphrasing</i> means and that they discussed how paraphrasing should be a brief retelling in their own words. Remind students of the guiding questions: <ul style="list-style-type: none"> * "How are Canada's available resources used to meet people's needs and wants today?" * "How do natural resource industries modify the physical environment?" Distribute a new blank Research note-catcher to each student. Remind them of what to record in each column to answer the question. Tell students that today they are going to work in their groups to continue researching by using three new resources to answer the focus questions. Then they are going to record what they find on their note-catchers, just as they did in the previous lesson. Explain that by working in groups, they can discuss their ideas before recording information on their note-catchers. Invite students to reread the processes recorded on the Research Skills and Processes anchor chart to remind themselves of how to use different types of media to research effectively. Distribute research folders and orient students to each of the resources inside: <ul style="list-style-type: none"> – Text: "Deforestation in Canada" – Image: "Oil: A Promise of Wealth" – Graph: "Releases of Lead to Water by Source, Canada, 2011" Explain to students that they will analyze and interpret the information on each of the resources, so that by the end of the lesson there should be information from three resources listed on their Research note-catchers. Make it clear that some of the resources may not answer both of the questions; those resources may provide answers on only one of the questions. 	<ul style="list-style-type: none"> Learning targets are a research-based strategy that helps all students, especially challenged learners. Posting learning targets allows students to reference them throughout the lesson to check their understanding. The learning targets also provide a reminder to students and teachers about the intended learning behind a given lesson or activity.



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Invite students to begin.• Give regular time reminders to ensure students get to each resource.• Circulate to support students in researching and to look out for any common issues that could be used as teaching points when you refocus the group. Ask guiding questions:<ul style="list-style-type: none">* "How does the resource answer the question? How do you know?"* "What does the resource show or say?" <p>"How would you say that in your own words?"</p>	
<p>B. Partner and Whole Group Share (15 minutes)</p> <ul style="list-style-type: none">• Refocus the whole group.• Invite students to pair up with someone from another group to share their research notes. Invite students to add to or revise their notes based on what they learn from their partner.• Refocus the whole group. Take one resource at a time and invite volunteers to share their notes on each resource with the whole group. Guide students with the Research note-catcher, Part 2 (suggested answers, for teacher reference).• If you noticed any issues when circulating to work with students, this is a good opportunity to discuss them with the whole group.• Invite students to discuss in groups:<ul style="list-style-type: none">* "Now that you have had an opportunity to practice researching with your group, is there anything you think needs to be revised on the Research Skills and Processes anchor chart?"• Revise the anchor chart accordingly.	<ul style="list-style-type: none">• Provide sentence starters for students who have difficulty expressing their ideas orally.



Closing and Assessment	Meeting Students' Needs
<p>A. Synthesizing Information (5 minutes)</p> <ul style="list-style-type: none">• Ask students to refer to their resources and notes and discuss in groups:<ul style="list-style-type: none">* “How are natural resources used to meet the needs and wants of people today?”• After 1 or 2 minutes, ask students to popcorn share their ideas. Listen for: “They produce necessary commodities such as paper and wood products, and gasoline.”• Ask students to refer to their resources and notes and discuss in groups:<ul style="list-style-type: none">* “How do natural resource industries modify the physical environment?”• After 1 or 2 minutes, ask students to popcorn share their ideas. Listen for: “They cut down trees and pollute water with lead.”• Distribute Homework: Modifying the Physical Environment: Lesson 7 resource web.	<ul style="list-style-type: none">• To ensure balanced airtime and that a variety of student voices are heard, consider limiting each student to one popcorn share.
Homework	Meeting Students' Needs
<ul style="list-style-type: none">• Use the resources you have analyzed and interpreted in the lesson to complete your resource web.• Read your independent reading book for at least 15–20 minutes.	<ul style="list-style-type: none">• Consider providing a partially completed resource web to students who struggle with reading multiple texts.• Consider providing an audio version of independent reading texts to support students who struggle reading independently.



EXPEDITIONARY
LEARNING

Grade 5: Module 3B: Unit 2: Lesson 7

Supporting Materials



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.

Exempt third-party content is indicated by the footer: © (name of copyright holder). Used by permission and not subject to Creative Commons license.



Research Folders:

Text: “Deforestation in Canada”

Annual deforestation rates are estimated using a combination of satellite and aerial images, land-use records and field inspections. The results show that deforestation is mostly driven by the **conversion** of forest land for agriculture, industrial development, resource extraction, and urban expansion.

What is deforestation?

Deforestation is the permanent removal of forest cover from an area, and the conversion of the previously forested land to other uses. In Canada, **clear cutting** and other harvesting practices are used as part of sustainable forest management to provide timber for producing paper and wood products. This is not considered deforestation, however, because the area is replanted or allowed to regenerate naturally, renewing the forest cover.

How much deforestation occurs in Canada?

Canada’s 397.3 million **hectares** of forest, other wooded land, and other land with tree cover account for about 10% of the world’s forest cover. In 2010, an estimated 45,000 hectares were deforested in Canada. Over the past 20 years, annual deforestation rates have been decreasing. Overall, deforestation has annually affected less than 0.01% of Canada’s forest and other wooded land in recent years.

Globally, about 13 million hectares of forest are deforested each year—the area of Nova Scotia and New Brunswick combined. Canada has 10% of the world’s forests, but only contributes to 0.3% of global deforestation.

Around the world, deforestation is a major issue because it reduces **biodiversity**, affects water and soil quality, and is an important contributor to **climate change**. Although the rate of deforestation in Canada is quite low, it still makes sense to **reduce** it where possible.



Research Folders:

Text: "Deforestation in Canada"

Glossary:

Word	Meaning
conversion	a change in something in order to use it for a different purpose
clear cutting	a way of cutting trees down that means they are all cut down in the same way
hectare	an area of land that is 100 meters by 100 meters
globally	all over the world
biodiversity	the variety of life in an area
climate change	change in weather patterns
reduce	make smaller



Research Folders:

Image: “Oil: A Promise of Wealth”



Photograph by Peter Essick

Beneath a green sweep of fen and forest in northern Alberta lies a promise of wealth —vast layers of hydrocarbons that can be refined into petroleum like gasoline. Undisturbed until now, these trees may soon fall: This land has already been staked out by prospectors.

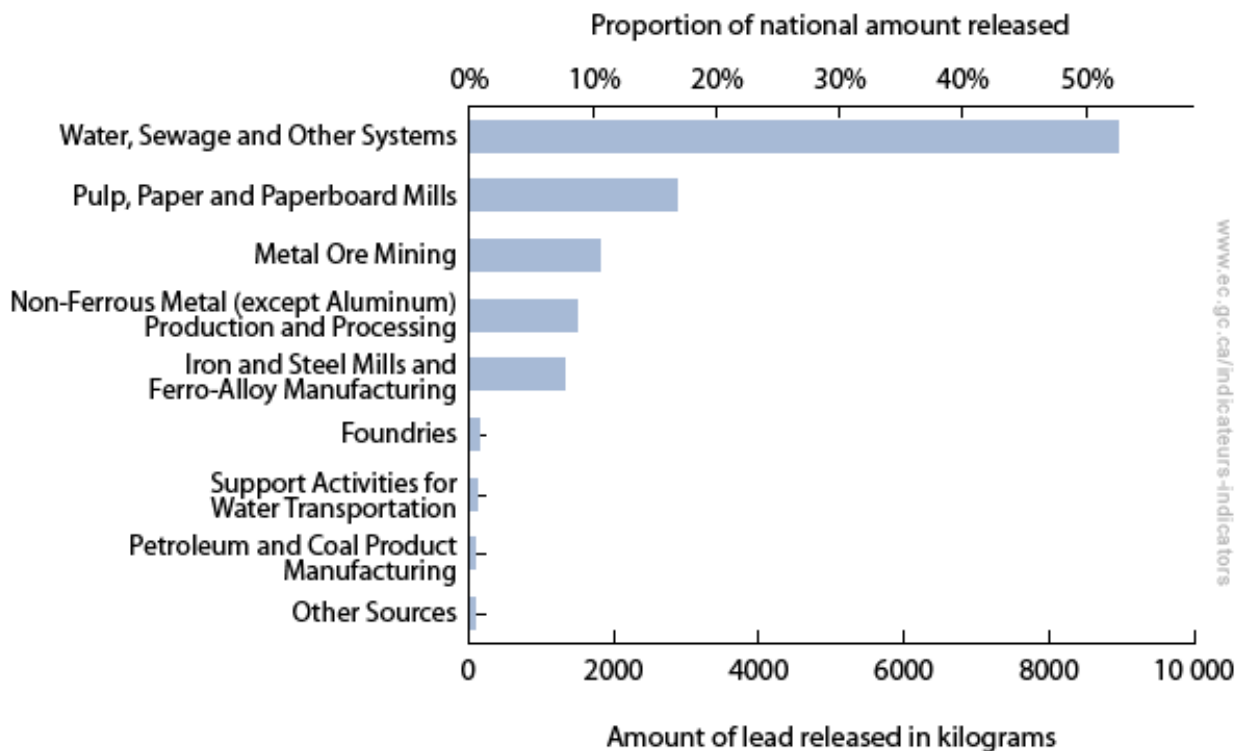


Research Folders:

Graph: “Releases of Lead to Water by Source, Canada, 2011”

When chemicals like lead are released into water, it can have a negative impact on the quality of the water and the life that lives in it. Water, sewage, and other systems account for 53% (8975 kg) of the total lead (Pb) released in water Canada in 2011. The second-largest amount of lead came from waste from pulp, paper, and paperboard mills, representing 17% (2883 kg) of the national total. The metal ore mining industry released the third-largest amount to water, with 11% (1818 kg) of the national total.

Releases of lead to water by source, Canada, 2011





Research Note-catcher, Part 2
(Suggested Answers, for Teacher Reference)

<i>How are Canada's available resources used to meet people's needs and wants today?</i>		
Source (title and author)	Information/Quotes (copy quotes word for word in quotation marks)	Paraphrase Explain what this quote means in your own words (linked to answering the question)
<i>"Deforestation in Canada"</i>	<i>"In Canada, clear cutting and other harvesting practices are used as part of sustainable forest management to provide timber for producing paper and wood products."</i>	<i>Trees are used to provide timber to produce paper and wood products.</i>
<i>National Geographic: "Oil: A Promise of Wealth"</i>	<i>"Beneath a green sweep of fen and forest in northern Alberta lies a promise of wealth—vast layers of hydrocarbons that can be refined into petroleum products like gasoline."</i>	<i>There are resources underground in Canada that can be used to make products people need, like gasoline.</i>



Research Note-catcher, Part 2
(Suggested Answers, for Teacher Reference)

<i>How do natural resource industries modify the physical environment?</i>		
Source (title and author)	Information/Quotes (copy quotes word for word in quotation marks)	Paraphrase Explain what this quote means in your own words (linked to answering the question)
<i>“Deforestation in Canada”</i>	<i>“Deforestation is the permanent removal of forest cover from an area, and the conversion of the previously forested land to other uses.”</i>	<i>Deforestation removes trees permanently from an area.</i>
<i>“Deforestation in Canada”</i>	<i>“... deforestation is a major issue because it reduces biodiversity, affects water and soil quality, and is an important contributor to climate change.”</i>	<i>Deforestation lessens the variety of life, affects water and soil quality, and contributes to climate change.</i>
<i>National Geographic: “Oil: A Promise of Wealth”</i>	<i>“Undisturbed until now, these trees may soon fall: This land has already been staked out by prospectors.”</i>	<i>Trees are cut down to extract natural resources like oil.</i>
<i>“Releases of Lead to Water by Source, Canada, 2011”</i>	<i>“The metal ore mining industry released the third-largest amount to water, with 11% (1818 kg) of the national total.”</i>	<i>The mining of metal ore was responsible for releasing a lot of lead into water.</i>



Homework:

Modifying the Physical Environment: Lesson 7 Resource Web

.....
Name:

.....
Date:

- Reread the resources and your Research note-catcher to locate information that helps you complete the web.
- Write a short sentence to explain how natural resource industries can modify the physical environment, in the box “How it modifies the physical environment ...”

