

## Treasure of the Tar

### Lesson Overview

Students will use the Canadian Atlas to discover a vital Central Plains natural resource. They will use a variety of sources to communicate key facts about the resource in a poster format.

### Grade Level

Grade 9 - 12

### Time Required

- Day One: Pre-teaching, introduction of lesson, and web-based research (approximately 70 minutes)
- Day Two: *Treasure of the Tar* poster design (approximately 80 minutes)

### Curriculum Connection

- Social Studies Grade 10, Saskatchewan, *Unit Two: Economic Decision Making*.
- Students will examine how individuals and societies make decisions about using resources in ways that will create a high standard of living for members of society.

### Link to Canadian National Geography Standards

*Essential Element #2 (Grade 9-12) - Places and Regions*

- The importance of places and regions to individual and social identity
- Regional analysis of geographic issues and questions

*Essential Element #5 (Grade 9-12) - Environment and Society*

- Use and sustainability of resources

*Geographic Skill #1 (Grade 9-12) - Asking Geographic Questions*

- Plan and organize a geographic research project (e.g. specify a problem, pose a research question or hypothesis and identify data sources)

*Geographic Skill #2 (Grade 9-12) - Acquiring Geographic Information*

- Systematically locate and gather geographic information from a variety of primary and secondary sources.

### The Canadian Atlas

Pages 22-23 in the Canadian Atlas

### Additional Resources, Materials and Equipment Required

- Students will need to obtain a large piece of Bristol board for this activity
- Computer lab to access websites

### Main Objective

To locate in the Atlas the region known as the "Tar Sands" in the Central Plains and to hypothesize about the future economic potential of this natural resource.

### Learning Outcomes

- Students will gain the understanding that globes and maps contain information about fundamental geographical systems including natural resources.
- Students will develop the skills to:
  - Locate a specific region on a map in the Atlas
  - Organize information obtained from a variety of resources
- Students will demonstrate behaviour that reflects the following values:
  - Consider maps as valuable sources of information
  - Appreciate that natural resources (with a particular focus upon the "Tar Sands") are critical to the economy of the Central Plains region in Canada

### The Lesson: Day One

	Teacher Activity	Student Activity
<b>Introduction</b> "Think - Pair – Share"*	<p><i>Activating prior knowledge</i> (15 minutes)</p> <p>Ask students:</p> <ul style="list-style-type: none"> <li>• What do they already know about the resources underneath the ground in Alberta, Saskatchewan and Manitoba?</li> <li>• What do they know about a natural resource specific to Alberta?</li> </ul>	Through <i>Think - Pair – Share</i> , students have an opportunity to communicate prior knowledge to one another and then to the whole class.
<b>Lesson Development</b>	<p><i>Part 1- Opening the Atlas</i> (5 minutes)</p> <ul style="list-style-type: none"> <li>• Locating the correct general geographic regions: Distribute the Atlas and ask the students to turn to pages 22 and 23.</li> <li>• Identifying the correct natural resources for further study: Tell students that they will be researching a vital natural resource in Alberta, namely The Treasure of the Tar Sands</li> </ul>	Students turn to selected pages and identify the map selection. Students look at the map section of Alberta, Saskatchewan and Manitoba.
<b>Lesson Development</b>	<p><i>Part 2 - Exploring in the Atlas</i> (10 minutes)</p> <ul style="list-style-type: none"> <li>• Focusing on specific geographic regions for further research: Ask students to look at the map at the bottom of page 23 where oil and natural gas production is illustrated in Saskatchewan and, in particular, in Alberta.</li> </ul>	Guided by the teacher, students view the Atlas.

	<ul style="list-style-type: none"> <li>Identifying the correct natural resources for further study: Tell students that they will be researching a vital natural resource in Alberta, namely The Treasure of the Tar Sands.</li> <li>Posing hypothetical questions Ask students how long the petroleum industry can continue to take from this natural resource before draining the resource entirely. Instruct students to use the remainder of the class time to search for key facts about the Tar Sands from websites.</li> </ul> <p><i>Part 3 - Exploring the Web (40 minutes)</i></p> <ul style="list-style-type: none"> <li>Conducting internet research</li> <li>Pre-arrange for a class computer lab.</li> </ul> <p>Instruct students to make notes in point form reflecting the key facts from the websites.</p>	<p>Guided by the teacher, students experience looking at the Oil Production and the Natural Gas Production illustration near the bottom of page 23. A short class discussion is generated which hypothesizes how long people can keep taking the resource before it is no longer there.</p> <p>Students conduct research using the following websites:</p> <p><a href="http://www.oilsandsdiscovery.com">http://www.oilsandsdiscovery.com</a></p> <p><a href="http://www.energy.gov.ab.ca/com/Sands/Introduction/Oil_Sands.htm">http://www.energy.gov.ab.ca/com/Sands/Introduction/Oil_Sands.htm</a></p> <p><a href="http://en.wikipedia.org/wiki/Tar_sands">http://en.wikipedia.org/wiki/Tar_sands</a></p> <p><a href="http://www.thecanadianencyclopedia.com/index.cfm?PgNm=TCE&amp;Params=J1ARTJ0020255">http://www.thecanadianencyclopedia.com/index.cfm?PgNm=TCE&amp;Params=J1ARTJ0020255</a></p>
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\* This strategy can be found in the CRISS® Project Manual. *Think-Pair-Share* is an active pre-reading discussion strategy. The teacher suggests a topic or asks a question. Students "think" on their own and write down what they know already about the topic. After students have written down their thoughts, they "pair" with another student to share their ideas. Teacher concludes with a whole-class "share" discussion.

**The Lesson: Day Two**

	<b>Teacher Activity</b>	<b>Student Activity</b>
<b>Introduction</b>	<p><i>Treasure of the Tar Poster (5 minutes)</i></p> <ul style="list-style-type: none"> <li>• Tell students that they will be producing a poster about the Tar Sands industry in Alberta.</li> </ul>	Students locate their notes from the website research.
<b>Lesson Development</b>	<p><i>Poster rubric (5 minutes)</i></p> <ul style="list-style-type: none"> <li>• Share the rubric with the students.</li> </ul> <p><i>Treasure of the Tar Poster (60 minutes)</i></p> <ul style="list-style-type: none"> <li>• Tell students to begin producing their posters</li> </ul>	Students produce the poster after evaluation rubric has been shared.
<b>Conclusion</b>	<p><i>Self-Scoring Rubric (10 minutes)</i></p> <ul style="list-style-type: none"> <li>• Share the Self-Scoring rubric with the students. Tell the students to grade themselves on their own independent work ethic as reflected in this activity.</li> <li>• Collect finished posters for classroom display.</li> </ul>	Students score their own work practice as reflected in this poster activity.

**Lesson Extension**

Students can explore the website

[http://www.energy.gov.ab.ca/com/Sands/Introduction/Oil\\_Sands.htm](http://www.energy.gov.ab.ca/com/Sands/Introduction/Oil_Sands.htm) to compare and contrast the production statistics for the years which are listed on the website. Based on this comparison exercise, students should be prompted to predict production levels for the current year.

**Assessment of Student Learning:**

- Use the Poster Rubric on below to assess the learning outcomes.
- To assist students in recording their own on-task practices, the *Treasure of the Tar* Activity Self-Scoring Rubric on the next page is effective.

**Poster Rubric**

Category	Score			
	4	3	2	1
<b>Use of class time</b>	Used time well during class period. Focused on getting the project done. Never distracted others.	Used time well during class period. Usually focused on getting the project done. Never distracted others.	Used some of the time well during class period. There was some focus on getting the project done but occasionally distracted others.	Did not use class time to focus on the project OR often distracted others.
<b>Graphics - Clarity</b>	Graphics are all in focus and the content easily viewed and identified from 4 ft. away.	Most graphics are all in focus and the content easily viewed and identified from 4 ft. away.	Most graphics are all in focus and the content easily viewed and identified from 2 ft. away.	Many graphics are not clear or are too small.
<b>Content - Accuracy</b>	At least 7 accurate facts are displayed on the poster.	5 - 6 accurate facts are displayed on the poster.	3 - 4 accurate facts are displayed on the poster.	Less than 3 accurate facts are displayed on the poster.
<b>Mechanics</b>	Capitalization and punctuation are correct throughout the poster.	There is 1 error in capitalization or punctuation.	There are 2 errors in capitalization or punctuation.	There are 3 or more errors in capitalization or punctuation.
<b>Gained Knowledge</b>	Student can accurately answer all questions related to facts in the poster and processes used to create the poster.	Student can accurately answer most questions related to facts in the poster and processes used to create the poster.	Student can accurately answer some questions related to facts in the poster and processes used to create the poster.	Student appears to have insufficient knowledge about the facts or processes used in the poster.

Note: Poster rubric made with the aid of <http://rubistar.4teachers.org/index.php>

## Treasure of the Tar

How well did you do in this activity?

Choose the sentence in the table below that best describes your effort, then look up your score.

I started work immediately and continued working until I completed both the research and the poster.	Give yourself a: <b>4</b>
I started work after a while and continued working until I completed both the research and the poster.	Give yourself a: <b>3</b>
I started work on this project eventually but did not stay on task very well.	Give yourself a: <b>2</b>
I started work on this project eventually but often I stopped to talk to others.	Give yourself a: <b>1</b>