

K-12 Learning Resources Curricula Matrix

TITLE	RESOURCE TYPE	DESCRIPTION	TARGET GRADES	SUGGESTED ALBERTA CURRICULUM LINKS	COST
Canada – Fueled by Resources	Teacher guide with supporting online activity and parent guide	<p>5 student activities, online EnerActivity (www.centreforenergy.com)</p> <p>In <i>Canada – Fueled by Resources</i> students are introduced to Canada’s petroleum resources. The activities refer to conventional or onshore petroleum resources, such as those found in Alberta as well as oilsands, East Coast offshore and frontier sources of petroleum, and build on a single map of Canada. Students require a general knowledge of Canada’s political divisions, provinces, territories and major cities, and physical features, mountain ranges, water bodies, eco-zones to complete the activities.</p> <p><i>Canada – Fueled by Resources</i> interactive on-line activity is an extension of the learning resource. The on-line activities use graphics, sound, animation and real-world examples to encourage students to look closely at the location of Canada’s petroleum resources and how they impact Canadians.</p>	4-5	<p>Social Studies: 4-5</p> <p>English Language Arts: 4-5</p> <p>Information & Communication Technology: 4-5 (Under review by Alberta Education)</p>	None

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TITLE	RESOURCE TYPE	DESCRIPTION	TARGET GRADES	APPROVED ALBERTA CURRICULUM LINKS	PANCANADIAN SCIENCE LINKS	COST
Counting on Gasoline	Teacher guide with supporting online activity	<p>7 student activities, online EnerActivity (www.centreforenergy.com)</p> <p>In <i>Counting on Gasoline</i>, students work through a real formula to understand how gasoline is priced in their own community. Follow-up activities allow students to apply and extend their understanding of gasoline prices.</p> <p>The <i>Counting on Gasoline</i> interactive, online activity is an extension of the learning resource. The online activity features a calculator and a spreadsheet. Designed like a “wizard,” the calculator facilitates a basic gasoline pricing calculation and links students directly to the necessary webbased data. The spreadsheet allows students to manipulate the standard variables to calculate and compare five different gasoline-pricing scenarios. A parent guide is also included with this on-line resource.</p>	7-12	<p>Information & Communication Technology: 8-11</p> <p>Math: 8-11</p>	Grade 7-12	none

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Drive – The Way Life Moves	Teacher guide with supporting booklet	<p>10 student activities, includes resource booklet</p> <p><i>Drive – The Way Life Moves</i> resource booklet and teacher guide uses the popular theme of transportation and motor vehicles in particular to provide real-life examples of the issue and impact of petroleum resources in our daily lives. The activities explore petroleum's role in a motor vehicle's full life cycle and provide students with opportunities to investigate how science and technology are applied in vehicle design, production and operation. The resource also encourages students to identify and weigh the personal, social, economic and environmental costs and benefits of motor vehicle use and to explore alternatives to personal vehicles.</p> <p><i>Drive – the Way Life Moves</i> is targeted at students who are at, or near driving age.</p>	10-12	<p>Science: 10-12</p> <p>Physics: 11</p> <p>Math: 10-11</p> <p>Information & Communication Technology: 10-11</p>	Grade 10-12	none

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Earth Really Rocks	Teacher guide with supporting online activity and parent guide	<p>6 student activities, online EnerActivity (www.centreforenergy.com)</p> <p><i>In Earth Really Rocks</i>, students learn about the link between rocks and petroleum. The activities emphasize sedimentary rocks and their properties. Concepts such as porosity and processes such as underground oil and gas formation are introduced in activities featuring hands-on investigations, student participation and concrete examples.</p> <p><i>Earth Really Rocks</i> interactive online activity is an extension of the learning resource. This activity uses graphics, sound, animation and real-world examples to encourage students to investigate where petroleum comes from, how rocks and petroleum are related, and how many useful products we get from rocks. This online resource also includes a parent guide.</p>	K-3	<p>Information & Communication Technology K-3</p> <p>Science: 3</p>	Grade 1-3	none

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Energy Machines	Teacher guide with supporting online activity and parent guide	<p>2 student activities, online EnerActivity (www.centreforenergy.com)</p> <p><i>Energy Machines</i> introduces students to the basic mechanics of two important petroleum industry machines – the drill rig and pumpjack. The two activities lead student teams through the steps in constructing a model pumpjack and drill rig from various materials such as cardboard, paper clips and straws, and challenge team members to improve or enhance their models.</p> <p>The interactive, online activity is an extension of the learning resource and helps students apply their knowledge of machines to construct an animated model of a pumpjack. Students practice problem-solving skills and apply principles of basic physics to identify what is wrong with a completed pumpjack and figure out how they can fix it. This online resource also includes a parent guide.</p>	4-6	<p>Information & Communication Technology 4-6</p> <p>Science: 4</p>	Grades 4-6	none

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TITLE	RESOURCE TYPE	DESCRIPTION	TARGET GRADES	PANCANADIAN SCIENCE LINKS	COST
Petroleum Magic	Teacher guide with supporting booklet	6 student activities, includes activity booklet <i>Petroleum Magic</i> is a fun learning resource filled with a variety of activities that connect grade one and two students to petroleum by talking about products they recognize and use every day. In addition, the resource ties in the environmental messages of the three Rs – reduce, reuse, and recycle – whenever possible to encourage students and their families to conserve our valuable petroleum resources.	1-3	Grades 1-3	none

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Petroleum – The Source of So Much	Teacher guide with supporting booklet	9 student activities, includes discovery booklet In <i>Petroleum – The Source of So Much</i> , students, teachers and parents are introduced to the world of products that are made with petroleum and petrochemicals. Bold photos and graphics accompany information on how petroleum provides more than gasoline. Hands-on activities included in the booklet can be completed in school or at home.	7-9	Information & Communication Technology 7-9	Grades 7-9	none

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TITLE	RESOURCE TYPE	DESCRIPTION	TARGET GRADES	APPROVED ALBERTA CURRICULUM LINKS	COST
Pipelines – Our Invisible Highway	Teacher guide with supporting booklet	5 student activities, includes Canada's Pipelines <i>Pipelines – Our Invisible Highway</i> is a dynamic learning activity that takes students along a pipeline journey in which they discover the economic, environmental, social, technological, and regulatory aspects of laying an energy pipeline. A copy of the Centre for Energy's booklet <i>Canada's Pipelines</i> is included for reference.	9	Social Studies: 9 English Language Arts: 9	none

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TITLE	RESOURCE TYPE	DESCRIPTION	TARGET GRADES	APPROVED ALBERTA CURRICULUM LINKS	COST
Canada's Crude Oil Resources	32-page booklet	<p>The <i>Canada's Crude Oil Resources</i> booklet discusses the importance of crude oil to our everyday lives and describes how it is found, produced, transported and refined. <i>Canada's Crude Oil Resources</i> also details the increasing importance and challenges of recovering oil from conventional oil fields, explains the environmental impacts of oil production and use, and discusses the current and future supplies of crude oil in Canada.</p> <p>Highlights of the publication include:</p> <ul style="list-style-type: none"> • 32 pages, full-colour, maps, photos, graphs, illustrations and index • available in English • published October 2001 	7-12	Support Resource for Career and Technology Studies – Energy and Mines, Levels 1, 2 and 3	<p>\$5.50</p> <p>(request educator's discount from the Centre for Energy)</p>

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TITLE	RESOURCE TYPE	DESCRIPTION	TARGET GRADES	APPROVED ALBERTA CURRICULUM LINKS	COST
Canada's Evolving Offshore Oil and Gas Industry	44-page booklet	<p><i>Canada's Evolving Offshore Oil and Gas Industry</i>, focuses on East Coast offshore activity as well as recent developments in British Columbia and the Arctic. Divided into eight sections, this booklet includes new information about stakeholder and environmental review processes, Canadian offshore projects, exploration facilities and methods, historical data and future prospects for the offshore industry. The publication also includes updated statistical data and project overviews vividly illustrated by full colour photos, maps and diagrams.</p> <p>Highlights of the publication include:</p> <ul style="list-style-type: none"> • 48 pages, full-colour, maps, photos, graphs, illustrations and index • available in English • Updated and expanded in March 2007 	10-12	Support Resource for Career and Technology Studies – Energy and Mines Level 1, 2, 3	<p>\$10.25 (request educator's discount from the Centre for Energy)</p>

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TITLE	RESOURCE TYPE	DESCRIPTION	TARGET GRADES	APPROVED ALBERTA CURRICULUM LINKS	COST
Canada's Natural Gas Resources	28-page booklet	<p><i>Canada's Natural Gas Resources</i> is a publication that discusses the economic contributions of natural gas, how it's found and recovered, the continental gas marketplace, the safety of natural gas, natural gas and the environment, regulation and deregulation, the future outlook of natural gas and much more.</p> <p>Highlights of the publication include:</p> <ul style="list-style-type: none"> • 28 pages, full-colour, maps, photos, graphs, illustrations and index • available in both French and English • published November 2000 	10-12	Support Resource for Career and Technology Studies – Energy and Mines, Levels 1, 2 and 3	<p>\$10.25</p> <p>(request educator's discount from the Centre for Energy)</p>

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Canada's Oilsands	44-page booklet	<p>The <i>Canada's Oilsands booklet</i> explains the increasing importance of unconventional petroleum - oilsands - to Canadians. Divided into five main sections, the publication highlights the history of heavy oil and oilsands, and discusses production, recovery methods, transportation, processing, economics and sustainable development. It also includes a description of current and proposed projects, as well as information on research challenges and a future outlook.</p> <p>Highlights of the publication include:</p> <ul style="list-style-type: none"> • 44 pages, full-colour, maps, photos, graphs, illustrations and index • available in English • published Sept. 2007 	7-12	Support Resource for Career and Technology Studies – Energy and Mines, Levels 1, 2 and 3	<p>\$10.25</p> <p>(request educator's discount from the Centre for Energy)</p>

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Canada's Pipelines	36-page booklet	<p><i>Canada's Pipelines</i> is divided into eight sections and it includes information on the pipeline grid, how pipelines work, regulations, safety, and environmental and economic issues concerning pipelines. Illustrations detailing the pipeline construction process and the locations of pipelines in Canada are also included.</p> <p>Highlights of the publication include:</p> <ul style="list-style-type: none"> • 36 pages, full-colour, maps, photos, graphs, illustrations and index • available in both French and English • published in October 2000 	10-12	Support Resource for Career and Technology Studies – Energy and Mines, Levels 2 and 3	<p>\$5.50</p> <p>(request educator's discount from the Centre for Energy)</p>

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TITLE	RESOURCE TYPE	DESCRIPTION	TARGET GRADES	APPROVED ALBERTA/ SASKATCHEWAN CURRICULUM LINKS	COST
Our Petroleum Challenge 7th edition	136-page book	<p>136-page overview</p> <p>Developed for diverse audiences such as people employed in the petroleum industry, educators, students, investment analysts and the general public, <i>Our Petroleum Challenge - Sustainability into the 21st Century</i> serves as the premier introductory guide to the oil and gas industry. Reviewed by 26 industry stakeholders, the book is an excellent tool to help Canadians learn more about one of Canada's most important resources.</p> <p>Readers who turn to <i>Our Petroleum Challenge</i> will learn more about the science and technology involved in finding, producing, processing delivering and using crude oil and natural gas as well as the challenges Canadians face in developing and using these resources.</p>	7-12 10-12	Alberta: Career and Technology Studies (Energy and Mines) Saskatchewan: Practical and Applied Arts (Energy and Mines)	\$37.50 (request educator's discount from the Centre for Energy)