

Adventures in Land Reclamation: Exploring Jobs for a Greener Future

Grade 3 Science				
Organizing Idea	Matter: Understandings of the physical world are deepened by investigating matter and energy.			
Guiding Question	How can materials change?			
Learning Outcome	Students investigate and analyze how materials have the potential to be changed.			
	Knowledge	Understanding	Skills & Procedures	Page #
	<p>The water cycle is a process in which water on Earth moves continuously between bodies of water, land, and the atmosphere.</p> <p>In the water cycle, water changes state from a liquid to a gas through evaporation, forms clouds through condensation, then falls back to Earth in a liquid or solid state (precipitation).</p>	<p>The water on Earth moves continuously in a cycle.</p>	<p>Describe and diagram the changes of state of water using the water cycle.</p> <p>Discuss ways to respect water in local environments.</p> <p>Identify examples of changes in the state of water in local environments.</p>	<p>Page 24-27 Page 30-31</p>
Organizing Idea	Earth Systems: Understandings of the living world, Earth, and space are deepened by investigating natural systems and their interactions.			
Guiding Question	What visible changes can be identified by examining Earth's surface?			
Learning Outcome	Students analyze changes in Earth's surface and explain how its layers hold stories of the past.			
	Knowledge	Understanding	Skills & Procedures	Page #
	<p>Human activities that can change Earth's surface include: living on the land, building towns and cities, getting and using resources, growing crops and farming (agriculture), polluting, stewardship.</p>	<p>Plant, human, and other animal activities can cause changes to Earth's surface.</p>	<p>Relate human activities to changes in Earth's surface.</p> <p>Discuss the interconnectedness between human activities and responsibilities for maintaining Earth.</p>	<p>Whole book</p>
	<p>Soil includes: living plants and animals, decaying plants and animals, rock particles, air, water.</p> <p>Soil provides a habitat for many animals. Habitats are environments where plants or animals establish a home.</p> <p>Soil can change due to the influence of plants and animals, such as: plants and crops growing, worms tunneling and eating matter.</p>	<p>Soil is a continually changing upper layer of Earth's surface.</p>	<p>Examine soil and its components in the local community.</p>	<p>Page 14-15 Page 29 Page 32-37</p>
Organizing Idea	Scientific Methods: Investigation of the physical world is enhanced through the use of scientific methods that attempt to remove human biases and increase objectivity.			
Guiding Question	How can investigation help to deepen understanding in science?			
Learning Outcome	Students relate investigation to building knowledge.			
	Knowledge	Understanding	Skills & Procedures	Page #

	<p>Data can come from many sources, such as: investigations, texts, websites, Elders or Knowledge Keepers, community members, personal observations.</p> <p>Data can be considered accurate when it comes from a trustworthy source, such as textbooks, scientific articles (peer-reviewed journals), official government websites, Elders or Knowledge Keepers.</p> <p>Data can be analyzed by: making connections to previous knowledge, comparing for accuracy asking questions, noticing changes, discussing, collaborating.</p> <p>Analysis of data can spark new questions for investigation.</p>	Investigations build on previous knowledge by supporting or contradicting existing knowledge.	Reflect on how conducting an investigation contributes to building knowledge.	Page 22 Page 42-43
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Grade 4 Science

Organizing Idea	Earth Systems: Understandings of the living world, Earth, and space are deepened by investigating natural systems and their interactions.			
Guiding Question	How does Earth sustain life?			
Learning Outcome	Students investigate the systems of Earth and reflect on how their interconnections sustain life.			
	Knowledge	Understanding	Skills & Procedures	Page #
	<p>The lithosphere is the outer layers of Earth’s surface, is made of rocks, and contains soils and minerals that support life.</p> <p>First Nations, Métis, and Inuit hold understandings of Earth systems that sustain life, including that all things are interconnected.</p>	Earth’s systems interact with one another, resulting in environments that sustain life.	Make connections between human activity and Earth’s systems.	Page 10 Page 14-15 Page 22 Page 24-33 Page 38-41
	<p>Water is a basic need for plants and animals.</p> <p>Water provides habitat for many organisms.</p>	Caring for water and water sources is a shared responsibility.	<p>Discuss ways that plants and animals use water to meet their basic needs.</p> <p>Identify plants and animals that exist in various bodies of water.</p>	Page 12-13 Page 24-31
	<p>Governments, conservation groups, and First Nations, Métis, and Inuit communities collaborate with Parks Canada to conserve, restore, and protect Canada’s natural and cultural heritages through initiatives such as: culture camps, science camps, land management and preservation of important sites, cultural centres.</p>	Earth’s systems are interconnected and can be impacted by small changes.	<p>Explain how changes in one system can have impacts on other systems.</p> <p>Discuss the importance of governments, conservation groups, and First Nations, Métis, and Inuit communities working alongside Parks Canada.</p>	Page 12-15 Page 20-25 Page 28-29
	<p>Natural resources are materials from nature that are used to meet human needs, and include: air, water, soil, minerals, metals, forests, organisms.</p>	Earth’s systems include natural resources that are central to human well-being.	Investigate natural resources found in Alberta and how they are used to meet human needs.	Page 10-15 Page 18 Page 24-35 Page 38-41
	<p>Conservation is the preservation and protection of Earth’s systems from pollution, depletion, or extinction.</p> <p>Conservation practices can be implemented in natural and human-made areas.</p>	Conservation can impact land, natural resources, and organisms.	Investigate conservation practices in natural and human-made areas.	Page 12-14

Grade 5 Science

Organizing Idea	Conservation can be practiced through community or global actions, such as: use of energy-efficient alternatives (e.g. solar panels), supplying water to support crops (irrigation), community recycling or composting programs.			
Guiding Question	How are energy resources understood?			

Learning Outcome	Students investigate and analyze various energy resources.			
	Knowledge	Understanding	Skills & Procedures	Page #
	Non-renewable energy resources include nuclear and fossil fuels.	Humans rely on energy resources to fulfill energy needs.	Discuss advantages and disadvantages of using renewable and non-renewable energy resources. Examine how various provinces and territories throughout Canada fulfill energy needs.	Page 10-11
Grade 6 Science				
Organizing Idea	Energy: Understandings of the physical world are deepened by investigating matter and energy.			
Guiding Question	How are energy resources understood?			
Learning Outcome	Students investigate and analyze various energy resources.			
	Knowledge	Understanding	Skills & Procedures	Page #
	Factors that influence selection of energy resources include: availability and accessibility, societal impacts, economic impacts, environmental impacts . Responsible management of energy resources includes: minimal disruption to nature, restoration of extraction areas , waste management practices, respect for land and resource rights .	The advantages and disadvantages of several factors influence selection of energy resources.	Examine management of energy resources in various contexts.	Whole book
Organizing Idea	Earth Systems: Understandings of the living world, Earth, and space are deepened by investigating natural systems and their interactions.			
Guiding Question	What relationships exist between climate and changes on Earth?			
Learning Outcome	Students investigate climate, changes in climate, and the impact of climate change on Earth.			
	Knowledge	Understanding	Skills & Procedures	Page #
	Clean energy production has the potential to reduce net greenhouse gas production.	Complex interactions between humans, Earth's systems, and the Sun can impact climate and climate change.	Relate impacts of natural processes and human activities on climate change.	Page 12-15 Page 28-33
Organizing Idea	Space: Understandings of the living world, Earth, and space are deepened by investigating natural systems and their interactions.			
Guiding Question	In what ways can the solar system be explored?			
Learning Outcome	Students analyze and represent celestial bodies of the solar system.			
	Knowledge	Understanding	Skills & Procedures	Page #
	Scientific experiments performed with objectivity and a high level of accuracy produce trustworthy evidence to support explanations.	Scientific explanations are constructed using reliable, objective data and evidence.	Evaluate the trustworthiness of evidence and explanations from a variety of sources.	Page 42-43