

From the Earth to Us: Discovering the Origins of Everyday Things

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 #
	Processed materials are modified from natural materials and do not occur in nature. Processed materials are designed and manufactured for a specific purpose.	Materials can be used in their natural form or processed to create new materials.	Relate a processed material to the natural material from which it originated.	Whole book
Grade 4 Science				
Organizing Idea	Matter: Understandings of the physical world are deepened by investigating matter and energy.			
Guiding Question	How can materials be managed safely?			
Learning Outcome	Students investigate the management of waste and dangerous materials and describe environmental impacts.			
	Knowledge	Understanding	Skills & Procedures	Page #
	Methods of waste management that can reduce negative environmental impacts include: reducing, reusing, recycling, repurposing, repairing, composting. Increased production and consumption of materials leads to increased production of waste materials.	Responsible methods of waste management can reduce negative environmental impacts.	Compare the different methods of waste management and discuss their environmental impacts.	Page 13 Page 24 Page 27 Page 32
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 #
	Natural resources are materials from nature that are used to meet human needs, and include: air, water, soil, minerals, metals, forests, organisms.	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.	Whole book

	<p>Conservation can be practiced through personal actions, including: use of electricity (e.g. turning off lights when leaving a room), use of water (e.g. taking shorter showers), reducing waste (e.g. using reusable packaging).</p> <p>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.</p>	<p>Conservation of Earth's systems involves personal, community, and global action.</p>	<p>Describe examples of personal actions that contribute to conservation in daily life.</p>	<p>Page 34-35 Page 42-43</p>
--	---	--	---	----------------------------------

Grade 5 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 #
	<p>Energy resources are renewable or non-renewable.</p> <p>Renewable energy resources are not depleted over time as they can be naturally replenished if handled responsibly.</p> <p>Renewal energy resources include: solar, wind, biomass, geothermal, tidal, water and hydro.</p> <p>Non-renewable energy resources are depleted over time because they will not be naturally replenished for thousands or millions of years.</p> <p>Non-renewable energy resources include nuclear and fossil fuels.</p>	<p><u>Humans rely on energy resources to fulfill energy needs.</u></p>	<p>Compare renewable energy resources with non-renewable energy resources.</p> <p>Discuss advantages and disadvantages of using renewable and non-renewable energy resources.</p>	<p>Whole book</p>

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 #
	<p>Factors that influence selection of energy resources include: availability and accessibility, societal impacts, economic impacts, environmental impacts.</p> <p>Responsible management of energy resources includes: minimal disruption to nature, restoration of extraction areas, waste management practices, respect for land and resource rights.</p> <p>Some energy resources can be used before processing, such as: wood, wind, water.</p> <p>Some energy resources can be used after processing, such as: wind, solar, fossil fuels, nuclear, hydro, biofuel.</p> <p>Many energy resources are processed into electricity.</p> <p>Energy resources can be used in daily life in various ways, such as: heating and cooling, lighting, cooking, transportation.</p>	<p>The advantages and disadvantages of several factors influence selection of energy resources.</p> <p>Energy resources can be managed for use in daily living.</p>	<p>Investigate factors that influence selection of energy resources.</p> <p>Examine management of energy resources in various contexts.</p> <p>Classify energy resources as being used before or after processing.</p> <p>Compare the use of an energy resource before and after processing.</p> <p>Discuss ways energy resources are used by individuals or communities in daily life.</p>	<p>Whole book</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 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 #
	<p>Changes in climate can be caused by human activities, including industrialization and pollution.</p> <p>Personal actions that can help address human causes of global climate change include: reducing personal consumption and waste, planting a garden or buying local produce, using clean, affordable, and reliable energy sources responsibly.</p>	<p>Complex interactions between humans, Earth's systems, and the Sun can impact climate and climate change.</p>	<p>Relate impacts of natural processes and human activities on climate change.</p> <p>Identify personal actions that may affect global climate change.</p>	Page 42-43
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 #
	<p>Technologies that are used to explore the solar system include: telescopes, satellites, probes, rovers, manned spacecraft and space stations, computer modelling.</p> <p>Artificial satellites are constructed and put into orbit by humans.</p>	<p>Knowledge of the solar system continues to develop with further space exploration, discovery, and use of technologies.</p>	<p>Identify and compare technologies used to gather knowledge about planets and objects in space.</p> <p>Discuss potential personal, societal, technological, and environmental barriers to living and working in space.</p>	Page 22-23