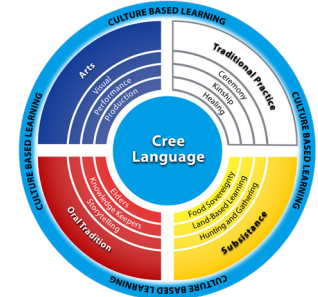



























# Science













 Knowledge	Understanding	Skills & Procedures	ᑭᑦᑲᑦᑲᑦ Nehiyaw Ways of Knowing	Other Suggestions
<b>ORGANIZING IDEA</b>				
<b>Matter(M) : Understandings of the physical world are deepened through investigating matter and energy.</b>				
<b>GUIDING QUESTION</b>				
<b>How can materials change?</b>				
<b>LEARNING OUTCOME</b>				
<b>3M 1.1 Students investigate and analyze how materials have the potential to be changed.</b>				
<p>Processed materials are modified from natural materials and do not occur in nature.</p> <p>Processed materials are designed and manufactured for a specific purpose.</p> <p><b>First Nations, Métis, and Inuit communities respectfully interact with natural materials, such as</b></p> <ul style="list-style-type: none"> <li>• trees</li> <li>• rocks</li> <li>• ice</li> <li>• shells</li> <li>• plants</li> <li>• animals</li> </ul> <p><b>First Nations, Métis, and Inuit communities interact with natural materials for specific purposes, such as</b></p> <ul style="list-style-type: none"> <li>• teepees</li> <li>• igloos</li> <li>• medicines</li> <li>• clothing</li> <li>• transportation</li> <li>• ceremonies</li> </ul>	<p><b>Materials can be used in their natural form or processed to create new materials.</b></p> <p><b>Interaction with natural materials by First Nations, Métis, and Inuit is guided through living in harmony and balance with the land.</b></p>	<p><b>Relate a processed material to the natural material from which it originated.</b></p> <p>Discuss how interaction with natural materials is guided by relationships with the land for First Nations, Métis, and Inuit communities.</p>	<p> <b>Stewardship and Community – Sharing</b></p> <p>or</p> <p>   <b>Harvesting Medicines Series: Protocol on Herb Gathering</b></p> <p>or</p> <p>   <b>Common Tree Names: Northern Boreal Series (9 videos)</b></p> <p>  <b>How Medicines Came to Man</b></p>	<p> <b>Rupertsland Institute Lesson Plan: Language Lesson #1 - Grade 3 Animals</b></p> <p> <b>Rupertsland Institute Lesson Plan: I Have, Who Has - Grade 3 Animals</b></p> <p> <b>Rupertsland Institute Lesson Plan: Detective Work Extension Activity</b></p> <p> <b>"Mikiwâhp: The Traditional Tipi" by Darlene Auger, 2020.</b></p>








Knowledge	Understanding	Skills & Procedures	ᑭᑭᑭᑭ Nehiyaw Ways of Knowing	Other Suggestions
<b>LEARNING OUTCOME</b> <b>3M 1.2 Students investigate and analyze how materials have the potential to be changed.</b>				
<p>Matter is anything that takes up space and has weight.</p> <p><b>States of matter include solid, liquid, and gas.</b></p> <p><b>Melting is a change of state from solid to liquid.</b></p> <p><b>Freezing is a change of state from liquid to solid.</b></p> <p><b>Evaporation is a change of state from liquid to gas.</b></p> <p><b>Condensation is a change of state from gas to liquid.</b></p>	<p><b>Matter can change state if heated or cooled.</b></p>	<p><b>Conduct an investigation to demonstrate changes of state.</b></p> <p>Discuss examples of daily activities that include heating and cooling.</p>	<p>   <b>Birch Tree Tapping Series: Making Birch Syrup</b></p> <p> <b>Legend of Raven and Water</b></p>	
<b>LEARNING OUTCOME</b> <b>3M 1.3 Students investigate and analyze how materials have the potential to be changed.</b>				
<p>A solid is a state of matter that has a definite shape and volume.</p> <p>A liquid is a state of matter that has a definite volume but no definite shape.</p> <p>A liquid flows and takes the shape of the container it is in.</p> <p>A gas is a state of matter that has neither definite shape nor definite volume.</p> <p>A gas flows easily and expands to the size of the container it is in.</p> <p>Volume is the amount of space a solid, liquid, or gas takes up.</p>	<p>Solids, liquids, and gases have distinct properties.</p>	<p>Describe solid, liquid, and gas states of matter in terms of the properties of shape and volume.</p> <p>Conduct an investigation to demonstrate the properties of the state of matter.</p>		

 Knowledge	Understanding	Skills & Procedures	ᑭᑭᑭᑭ Nehiyaw Ways of Knowing	Other Suggestions
<b>LEARNING OUTCOME</b> <b>3M 1.4 Students investigate and analyze how materials have the potential to be changed.</b>				
<p>Substances are made of matter that has not been mixed with other matter, including water.</p> <p><b>The temperature at which a substance changes from solid to liquid is called the melting point.</b></p> <p><b>The temperature at which a substance changes from a liquid to a solid is called the freezing point.</b></p> <p><b>The melting and freezing points of a substance are the same temperature.</b></p> <p><b>The temperature at which a substance changes from liquid to gas is called the boiling point.</b></p> <p><b>The melting/freezing point of water is 0°C.</b></p> <p><b>The boiling point of water is 100°.</b></p>	<p><b>Substances change state based on melting/freezing and boiling points.</b></p>	<p><b>Safely explore the melting/freezing points of various substances.</b></p> <p>Compare the melting/freezing and boiling points of various substances, including water.</p>	<p> <b>Mixing and Measuring Common Medicines (2 videos)</b></p>	<p>  <b>Coyote Science website and TV show</b></p>
<b>LEARNING OUTCOME</b> <b>3M 1.5 Students investigate and analyze how materials have the potential to be changed.</b>				
<p><b>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).</b></p> <p><b>Water can change state from solid to liquid and back again.</b></p> <p><b>Water can change state from liquid to gas and back again.</b></p> <p>In Alberta, the surfaces of many bodies of water change from liquid in the summer to solid in the winter.</p>	<p><b>The water on Earth moves continuously in a cycle.</b></p>	<p><b>Describe and diagram the changes of state of water using the water cycle.</b></p> <p><b>Discuss ways to respect water in local environments.</b></p> <p>Identify examples of changes in the state of water in local environments.</p> <p>Discuss the importance of safety around bodies of water that have a surface of ice.</p> <p>Discuss the importance of safety around bodies of water in different seasons.</p>	<p> <b>Legend of Raven and Water</b></p>	<p>  <b>Water: the sacred relationship website and videos</b></p>










Knowledge	Understanding	Skills & Procedures	ᑭᑦᑲᑦᑲᑦ Nehiyaw Ways of Knowing	Other Suggestions
<b>LEARNING OUTCOME</b>				
<b>3M 1.6 Students investigate and analyze how materials have the potential to be changed.</b>				
<p>A reversible change is a change that can be undone, such as melting or freezing.</p> <p>A permanent change is a change that cannot be undone, such as cooking an egg or baking a cake.</p>	<p><b>Changes to materials or substances can be permanent or reversible, depending on the properties of the given materials or substances.</b></p>	<p>Discuss examples of changes to materials or substances that are permanent and examples of changes to materials or substances that are reversible.</p> <p>Safely perform experiments on various materials and substances and classify changes as permanent or reversible.</p>	<p>   <b>Birch Tree Tapping Series: Making Birch Syrup</b></p>	
<b>ORGANIZING IDEA</b>				
<b>Energy (E): Understandings of the physical world are deepened through investigating matter and energy.</b>				
<b>GUIDING QUESTION</b>				
<b>How can forces relate to changes in movement?</b>				
<b>LEARNING OUTCOME</b>				
<b>3E 1.1 Students investigate and explain how forces affect movement of objects.</b>				
<p><b>A force is a push or pull upon an object resulting from an interaction with another object.</b></p> <p><b>An object that is not moving will stay still until a force makes it move, and an object that is moving will keep moving until a force stops it. (Newton’s First Law)</b></p> <p><b>Contact forces occur between objects that touch each other.</b></p> <p><b>Contact forces include forces that</b></p> <ul style="list-style-type: none"> <li>• <b>applied by a person or an object on another object (applied)</b></li> <li>• <b>caused by objects, surfaces, or substances sliding against each other (friction)</b></li> </ul> <p>[continued...]</p>	<p><b>Forces can affect properties and movement of objects in different ways.</b></p>	<p>Describe where forces may exist in everyday situations.</p> <p>Describe the strength and direction of forces applied to objects.</p> <p>Compare the strength of forces applied to objects.</p> <p><b>Predict how an object will be affected by different strengths and directions of force.</b></p> <p>[continued...]</p>	<p> <b>Spring Beaver/ Muskrat Series:</b></p> <ul style="list-style-type: none"> <li>• <b>Beaver Trapping Conibear Sets</b></li> <li>• <b>Muskrat Trapping Conibear Sets</b></li> </ul>	<p>  <b>Coyote Science website and TV show</b></p>

 <b>Knowledge</b>	<b>Understanding</b>	<b>Skills &amp; Procedures</b>	ᑭᑦᑲᑦᑲᑦ Nehiyaw Ways of Knowing	<b>Other Suggestions</b>
<p>[continued...]</p> <p><b>Contact forces include forces that</b></p> <ul style="list-style-type: none"> <li>• <b>sliding against each other (friction)</b></li> <li>• <b>applied by pulling on a string or rope connected to an object (tension)</b></li> <li>• <b>caused by a compressed or stretched object or spring (elastic or spring)</b></li> </ul> <p><b>Ways to apply a contact force to an object include</b></p> <ul style="list-style-type: none"> <li>• <b>stretching</b></li> <li>• <b>pulling</b></li> <li>• <b>squeezing</b></li> <li>• <b>pushing</b></li> </ul> <p><b>The strength of forces applied to objects can be described as</b></p> <ul style="list-style-type: none"> <li>• <b>strong</b></li> <li>• <b>weak</b></li> <li>• <b>large</b></li> <li>• <b>small</b></li> </ul> <p><b>The direction of forces applied to objects can be described as</b></p> <ul style="list-style-type: none"> <li>• <b>upward</b></li> <li>• <b>downward</b></li> <li>• <b>from the left</b></li> <li>• <b>from the right</b></li> <li>• <b>from both sides</b></li> <li>• <b>from all directions</b></li> </ul> <p><b>Changes to an object's movement when a force is applied include</b></p> <ul style="list-style-type: none"> <li>• <b>speeding up</b></li> <li>• <b>slowing down</b></li> <li>• <b>starting</b></li> <li>• <b>stopping</b></li> <li>• <b>changing direction</b></li> </ul>		<p>[continued...]</p> <p><b>Conduct investigations to demonstrate the effects of forces on the movement of objects.</b></p> <p><b>Conduct investigations to demonstrate how forces can change the shape or size of objects.</b></p>	<p> <b>Spring Beaver/ Muskrat Series:</b></p> <ul style="list-style-type: none"> <li>• <b>Beaver Trapping Conibear Sets</b></li> <li>• <b>Muskrat Trapping Conibear Sets</b></li> </ul>	<p>  <b>Coyote Science website and TV show</b></p>



Knowledge	Understanding	Skills & Procedures	ᑭᑦᑎᑦᑎᑦᑎᑦ Nehiyaw Ways of Knowing	Other Suggestions
<b>LEARNING OUTCOME</b> <b>3E 1.2 Students investigate and explain how forces affect movement of objects.</b>				
<p>The effort needed to move objects is reduced by simple machines, such as</p> <ul style="list-style-type: none"> <li>levers</li> <li>wheels</li> <li>inclined planes</li> </ul> <p>Many First Nations, Métis, and Inuit have designed and tested and continue to use simple machines that decrease effort, such as</p> <ul style="list-style-type: none"> <li>an antler wedge</li> <li>a paddle</li> <li>Inuit scraping tools, such as an ulu</li> </ul>	<p>Simple machines can change the strength and direction of forces.</p>	<p>Explore how simple machines reduce the effort needed to move objects.</p> <p>Design a device that uses simple machines.</p> <p>Safely work with tools, materials, and equipment.</p> <p>Describe the purpose of simple machines used by local First Nations, Métis, and Inuit.</p>	<p> Introduction to Traps and Snares Series (8 videos)</p> <p>   Trapping and Snares - Beaver Series (5 videos)</p> <p> Trickster and the Ducks</p>	<p>  Coyote Science website and TV show</p>






Knowledge	Understanding	Skills & Procedures	ᑭᑦᑲᑦᑲᑦ Nehiyaw Ways of Knowing	Other Suggestions
<b>ORGANIZING IDEA</b>				
<b>Earth System (ES): Understandings of the living world, Earth, and space are deepened by investigating natural systems and their interactions.</b>				
<b>GUIDING QUESTION</b>				
<b>What visible changes can be identified by examining Earth’s surface?</b>				
<b>LEARNING OUTCOME</b>				
<b>3ES 1.1 Students analyze changes in Earth’s surface and explain how its layers hold stories of the past.</b>				
<p><b>Changes that can occur to Earth’s surface over a long period of time include</b></p> <ul style="list-style-type: none"> <li>• mountains wearing down</li> <li>• rivers changing course</li> <li>• lakes and seas drying out and refilling</li> <li>• glaciers moving, advancing, and receding</li> </ul> <p><b>Natural events that can change Earth’s surface in a short period of time include</b></p> <ul style="list-style-type: none"> <li>• volcanic eruptions</li> <li>• earthquakes</li> <li>• landslides</li> <li>• tsunamis</li> <li>• floods</li> <li>• melting and freezing</li> </ul> <p><b>Changes to Earth’s surface can be shared through</b></p> <ul style="list-style-type: none"> <li>• scientific knowledge</li> <li>• stories</li> <li>• traditional knowledge</li> </ul>	<p><b>Earth’s surface changes over time.</b></p> <p><b>Relationships with land provide intergenerational knowledge of Earth’s surface for many First Nations, Métis, and Inuit.</b></p>	<p>Describe how natural events change Earth’s surface.</p> <p><b>Discuss changes to Earth’s surface over time that are shared through stories and intergenerational knowledge of First Nations, Métis, or Inuit.</b></p> <p>Investigate natural events that have changed Earth’s surface in Alberta.</p>	<p> <b>The Rolling Head (formation of landforms)</b></p>	
<b>LEARNING OUTCOME</b>				
<b>3ES 1.2 Students analyze changes in Earth’s surface and explain how its layers hold stories of the past.</b>				
<p>Wind, water, or ice can move or remove material as it flows.</p> <p>Glaciers are the remnants of very thick ice sheets that once covered all of Canada.</p> <p>[...continued]</p>	<p><b>Water and wind can shape Earth’s surface.</b></p>	<p>Represent how the movement of water and wind changes Earth’s surface over time.</p> <p>Represent the flow of water from glaciers to an ocean.</p> <p>Investigate glacier-fed rivers that are found locally or in Alberta.</p>	<p> <b>Trickster and the Flood</b></p>	

 <b>Knowledge</b>	<b>Understanding</b>	<b>Skills &amp; Procedures</b>	ᑭᑭᑭᑭ Nehiyaw Ways of Knowing	<b>Other Suggestions</b>
<p>[...continued]</p> <p>Melting glacier ice creates runoff that forms and maintains many of the major rivers in Alberta.</p> <p>Earth is warming up from natural and human causes, which is accelerating the melting of glaciers.</p> <p>Interactions with wind and water have shaped Earth's surface, including Alberta's badlands and the Grand Canyon in the United States.</p>				
<b>LEARNING OUTCOME</b> <b>3ES 1.3 Students analyze changes in Earth's surface and explain how its layers hold stories of the past.</b>				
<p><b>Human activities that can change Earth's surface include</b></p> <ul style="list-style-type: none"> <li>• <b>living on the land</b></li> <li>• <b>building towns and cities</b></li> <li>• <b>getting and using resources</b></li> <li>• <b>growing crops and farming (agriculture)</b></li> <li>• <b>polluting</b></li> <li>• <b>stewardship</b></li> </ul> <p><b>Plant and animal activities can change Earth's surface, such as</b></p> <ul style="list-style-type: none"> <li>• <b>overpopulation</b></li> <li>• <b>using resources</b></li> <li>• <b>parasites, such as the mountain pine beetle</b></li> <li>• <b>plants or animals burrowing</b></li> </ul>	<p><b>Plant, human, and other animal activities can cause changes to Earth's surface.</b></p>	<p><b>Relate human activities to changes in Earth's surface.</b></p> <p>Relate activities of plants and animals to changes in Earth's surface.</p> <p><b>Discuss the interconnectedness between human activities and responsibilities for maintaining Earth.</b></p> <p>Investigate how changing Earth's surface by farming and growing crops contributes to daily life in Alberta.</p>	<p> <b>Moose, Elk, and Deer Calling Series: Hunting Protocols and Stewardship</b></p> <p>  <b>Legend of Death - Northern Lights (overpopulation)</b></p>	<p> <b>How Wolves Change Rivers</b></p>





 Knowledge	Understanding	Skills & Procedures	ᑭᑦᑲᑦᑲᑦ Nehiyaw Ways of Knowing	Other Suggestions
<b>LEARNING OUTCOME</b>				
<b>3ES 1.4 Students analyze changes in Earth's surface and explain how its layers hold stories of the past.</b>				
<p><b>Earth's surface contains layers that have been deposited over long periods of time.</b></p> <p><b>Fossilized dinosaur bones found in many locations around the world show that dinosaurs lived on Earth millions of years ago.</b></p> <p>Millions of years ago, Earth's surface in Alberta included lush tropical forests and an inland sea that supported dinosaur life and the preservation of dinosaur bones.</p> <p>Fossilized dinosaur bones can be collected from the surfaces of Earth or by digging up (excavating) its layers.</p> <p>Fossilized dinosaur bones have been found in several locations in Alberta, such as</p> <ul style="list-style-type: none"> <li>• Alberta's badlands</li> <li>• the Grande Cache area</li> <li>• the Fort McMurray area</li> </ul> <p>Dinosaur Provincial Park, located in Alberta's badlands, has been classified as a UNESCO World Heritage Site.</p> <p>Many dinosaurs lived in Alberta, such as</p> <ul style="list-style-type: none"> <li>• Albertosaurus</li> <li>• Edmontosaurus</li> <li>• Nodosaur</li> <li>• Tyrannosaurus</li> </ul> <p>Displays of fossilized dinosaur bones can be viewed in museums in Alberta, such as the</p> <ul style="list-style-type: none"> <li>• Royal Tyrrell Museum in Drumheller</li> <li>• Philip J. Currie Dinosaur Museum in Grande Prairie</li> </ul> <p>A scientist who studies fossilized dinosaur bones is called a paleontologist.</p>	<p><b>The history of Earth's surface can be explained by examining its layers.</b></p> <p>Layers of the landscape can hold fossilized dinosaur bones.</p> <p>Landscape conditions of the past influence how well dinosaur bones are preserved as fossils.</p>	<p><b>Examine how layers of Earth's surface hold information about the past.</b></p> <p>Explain how paleontologists know that dinosaurs lived on Earth millions of years ago.</p> <p>Investigate fossilized dinosaur bones that have been found in Alberta and the dinosaurs they belong to.</p> <p>Identify and discuss where fossilized dinosaur bones have been found or are on display in Alberta.</p>	<p> <b>Legend of Bear and Grass</b></p>	







Knowledge	Understanding	Skills & Procedures	ᑭᓴᓴᑦ Nehiyaw Ways of Knowing	Other Suggestions
<b>LEARNING OUTCOME</b>				
<b>3ES 1.5 Students analyze changes in Earth's surface and explain how its layers hold stories of the past.</b>				
<p>Soil includes</p> <ul style="list-style-type: none"> <li>• living plants and animals</li> <li>• decaying plants and animals</li> <li>• rock particles</li> <li>• air</li> <li>• water</li> </ul> <p>Soil provides a habitat for many animals.</p> <p>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</p> <ul style="list-style-type: none"> <li>• plants and crops growing</li> <li>• worms tunneling and eating matter</li> </ul>	<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>Identify local habitats provided by soil.</p> <p>Describe how soil is changed by plants and animals.</p>		
<b>ORGANIZING IDEA</b>				
<b>Living Systems (LS): Understandings of the living world, Earth, and space are deepened by investigating natural systems and their interactions.</b>				
<b>GUIDING QUESTION</b>				
<b>How do plants and animals interact?</b>				
<b>LEARNING OUTCOME</b>				
<b>3LS 1.1 Students analyze and describe how plants and animals interact with each other and within environments.</b>				
<p><b>A food chain shows the order in which plants and animals depend on each other for food.</b></p> <p><b>A food chain can be represented in many ways, such as</b></p> <ul style="list-style-type: none"> <li>• illustrations</li> <li>• diagrams</li> <li>• stories</li> <li>• words</li> </ul> <p><b>A food chain represents one possible way that plants and animals interact.</b></p> <p>Plants and animals are part of many different food chains.</p>	<p><b>Plants and animals interact with each other in various environments in ways that can be represented with food chains.</b></p>	<p><b>Represent various food chains in local and other Canadian environments.</b></p>	<p>  <b>7 Year Cycle</b></p>	<p> <b>"Lessons from Mother Earth" by Elaine McLeod, 2010.</b></p>




Knowledge	Understanding	Skills & Procedures	ᑭᑦᑲᑦᑲᑦ Nehiyaw Ways of Knowing	Other Suggestions
<b>LEARNING OUTCOME</b>				
<b>3LS 1.2 Students analyze and describe how plants and animals interact with each other and within environments.</b>				
Carnivores eat only animals. Herbivores eat only plants. Omnivores eat animals and plants.	Animals can be classified as carnivores, herbivores, or omnivores based on what they eat.	<b>Classify animals in a food chain as carnivores, herbivores, or omnivores.</b>		
<b>LEARNING OUTCOME</b>				
<b>3LS 1.3 Students analyze and describe how plants and animals interact with each other and within environments.</b>				
<b>Plants and animals use their senses to respond to sensory stimuli, including</b> <ul style="list-style-type: none"> <li>• water</li> <li>• food</li> <li>• temperature</li> <li>• light</li> </ul> Animals can use senses to detect the presence of food, predators, or other plants and animals.	<b>Plants and animals sense and respond to stimuli in order to survive.</b>	Investigate and discuss how plants and animals respond to stimuli in their environments in order to survive.	 <b>Moose, Elk, and Deer Calling Series:</b> <ul style="list-style-type: none"> <li>• <b>Moose Introduction – Habitat/ Mating/ Identification</b></li> </ul>  <b>Common Seasonal Activities – Seasonal Round</b>	<b>Cree names of the months correspond to animal movements and senses. For example, May is “opiniyawi-pisim” which means egg laying month. See KTCEA Elders Speak APP.</b>  <b>Stimuli affecting animal behaviours, such as a beaver moves after eating poplar trees; beaver young being sent out of the den after they learn what they need; how babies cause animals to move differently.</b>




Knowledge	Understanding	Skills & Procedures	ᑭᑦᑲᑦᑲᑦ Nehiyaw Ways of Knowing	Other Suggestions
<b>LEARNING OUTCOME</b> <b>3LS 1.4 Students analyze and describe how plants and animals interact with each other and within environments.</b>				
<p>Plants and animals in local environments can be protected by actions such as</p> <ul style="list-style-type: none"> <li>respectfully interacting with nature</li> <li>minimizing disturbance to plants and animals</li> <li>being aware of animal crossings</li> <li>following fishing and hunting regulations</li> <li>counting and tracking populations</li> </ul> <p><b>Plants and animals may depend on each other and their environments for survival, such as for food and habitat.</b></p> <p><b>First Nations, Métis, and Inuit knowledge of plants and animals within environments includes</b></p> <ul style="list-style-type: none"> <li>animal behaviour</li> <li>sources of food</li> <li>migration patterns</li> <li>seasonal patterns</li> </ul>	<p><b>Awareness and consideration of the interactions of plants and animals in local environments helps humans protect them.</b></p>	<p><b>Reflect on and share actions that can be taken to protect plants and animals in local environments.</b></p> <p><b>Demonstrate respectful and safe practices during observations of plants and animals in local environments.</b></p> <p><b>Explain interconnections in environments, including how plants depend on animals and how animals depend on plants to survive.</b></p> <p><b>Discuss First Nations, Métis, and Inuit connection with environments and their knowledge of and relationships with plants and animals.</b></p>	<p> <b>Plants and Trees – Animate/Inanimate (animate)</b></p> <p> <b>Common Seasonal Activities – Seasonal Round</b></p> <p> <b>Legend of Bear and Grass</b></p>	<p><b>Learn how seasons, weather, and animal migration patterns affect tracking and trapping.</b></p> <p> <b>Project WILD K-12 Curriculum and Activity Guide: Thicket Game.</b> (adaptations for survival)</p> <p><b>Explore how animals such as birds and bears disperse berry seeds across the land creating new growth.</b></p>




Knowledge	Understanding	Skills & Procedures	ᑭᑦᓴᑦᓴᑦ Nehiyaw Ways of Knowing	Other Suggestions
<b>ORGANIZING IDEA</b> <b>Computer Science (CS): Problem solving and scientific inquiry are developed through the knowledgeable application of creativity, design, and computational thinking.</b>				
<b>GUIDING QUESTION</b> <b>How does creativity contribute to computational thinking?</b>				
<b>LEARNING OUTCOME</b> <b>3CS 1.1 Students investigate creativity and its relationship to computational thinking.</b>				
<p><b>Computational thinking includes</b></p> <ul style="list-style-type: none"> <li>• <b>breaking a task into smaller chunks</b></li> <li>• <b>finding patterns and similarities in tasks</b></li> <li>• <b>identifying the important details when reading or solving a problem</b></li> <li>• <b>designing instructions</b></li> <li>• <b>working backward if a mistake was made</b></li> </ul> <p>Computational thinking can be used by humans to communicate with computers more efficiently; e.g., apps, virtual reality, and robotics.</p>	<p>Computational thinking is a problem-solving process that uses creativity.</p>	<p>Create a set of instructions that could be followed by a human or a machine to complete a task.</p> <p>Identify computational thinking used to solve problems or achieve desired outcomes.</p>	 <p><b>Birch Tree Tapping Series: Making Birch Syrup</b></p>	
<b>LEARNING OUTCOME</b> <b>3CS 1.2 Students investigate creativity and its relationship to computational thinking.</b>				
<p><b>The same outcome, such as arriving at school, can be achieved in different ways.</b></p> <p><b>Divergent thinking is the process of generating multiple unique ideas or solutions.</b></p> <p><b>Creativity is an important part of computer science, technology, and engineering; e.g., computer programming, robotics.</b></p> <p><b>Creativity involves combining, changing, or reapplying existing ideas to produce something new.</b></p> <p>Canadians are responsible for many creative inventions, such as the Canadarm.</p>	<p><b>Creativity involves divergent thinking and can be used to develop different ways to achieve the same outcome.</b></p> <p>Creativity involves imagination, observation, and making connections.</p>	<p>Collaborate to write two different sets of instructions that achieve the same outcome.</p> <p>Relate creativity to engineering, computing, and the development of new technologies.</p> <p>Create something new by combining, changing, or reapplying existing ideas.</p> <p>Examine a Canadian invention.</p> <p>Identify examples of creativity in computer science, technology, or engineering.</p>		



Knowledge	Understanding	Skills & Procedures	ᑭᐱᐱᑦ Nehiyaw Ways of Knowing	Other Suggestions
<p align="center"><b>ORGANIZING IDEA</b></p> <p align="center"><b>Scientific Method (SM): Investigation of the physical world is enhanced through the use of scientific methods that attempt to remove human biases and increase objectivity.</b></p>				
<p align="center"><b>GUIDING QUESTION</b></p> <p align="center"><b>How can investigation help to deepen understanding in science?</b></p>				
<p align="center"><b>LEARNING OUTCOME</b></p> <p align="center"><b>3SM 1.1 Students relate investigation to building knowledge.</b></p>				
<p>Techniques that can be used to improve the accuracy of data include choosing appropriate tools, carefully measuring, and demonstrating objectivity.</p> <p><b>Accuracy of data refers to the correctness of a recorded observation.</b></p> <p>Objectivity is an attempt to remove the influence of personal thoughts, feelings, and expectations.</p> <p>Data can come from many sources, such as</p> <ul style="list-style-type: none"> <li>• investigations</li> <li>• texts</li> <li>• websites</li> <li>• Elders or Knowledge Keepers</li> <li>• community members</li> <li>• personal observations</li> </ul> <p><b>Data can be considered accurate when it comes from a trustworthy source, such as</b></p> <ul style="list-style-type: none"> <li>• <b>textbooks</b></li> <li>• <b>scientific articles (peer-reviewed journals)</b></li> <li>• <b>official government websites</b></li> <li>• <b>Elders or Knowledge Keepers</b></li> </ul> <p>[continued...]</p>	<p>Investigations build on previous knowledge by supporting or contradicting existing knowledge.</p>	<p>Reflect on how conducting an investigation contributes to building knowledge.</p> <p>Collect data using techniques to improve the accuracy of data.</p> <p>Analyze data collected during investigations.</p> <p>Compare the trustworthiness of sources of data.</p> <p>Develop new questions for further investigations.</p>		<p align="center">  <b>“The Whiskey Jack’s Coat” as told by Ken Ealey, <a href="#">Walking Together</a> digital resource.</b> </p>



 Knowledge	Understanding	Skills & Procedures	ᑭᓴᓴᓴᓴ Nehiyaw Ways of Knowing	Other Suggestions
<p>[continued...]</p> <p>Data can be analyzed by</p> <ul style="list-style-type: none"><li>• making connections to previous knowledge</li><li>• comparing for accuracy</li><li>• asking questions</li><li>• noticing changes</li><li>• discussing</li><li>• collaborating</li></ul> <p>Analysis of data can spark new questions for investigation.</p>				