Big Idea, Major Concepts, GLOs	Specific Learning Outcomes ELOs are bold [NICE TO KNOW are italics]	Season	Nehiyaw Ways of Knowing
	SCIENCE INQUIRY		
	GENERAL LEARNER EXPECTATION 3–1 **Investigate the nature of things, demonstrating purposeful action that leads to observations and inferences.**		
	GENERAL LEARNER EXPECTATION 3–2 **Identify patterns and order in objects and events studied; and, with guidance, record observations, using pictures, words and charts; and make predictions and generalizations, based on observations.**		
Focus	• ask questions that lead to exploration and investigation		
	• **identify one or more possible answers to questions asked by themselves and others. Ideas may take the form of predictions and hypotheses**		• **Research skills, Sharing Circles**
Explore and Investigate	• *identify, with guidance, procedures to be followed in finding answers to given questions*		
	• **carry out simple procedures identified by others**		• **Experimentation and Exploration, L.B.L Outdoor Activities**
	• *identify materials used and how they were used*		
	• work independently or with others to carry out the identified procedures		
	• **identify, with guidance, sources of information and ideas and, with guidance, access information and ideas from those sources. Sources may include library, classroom, community and computer-based resources**		• **Cross Curricular, Research Skills, Elders as Knowledge Keepers**
Reflect and Interpret	• *record observations and measurements, using captioned pictures and charts, with guidance in the construction of charts. Computer resources may be used for record keeping and for display and interpretation of data*		
	• *state an inference, based on observations*		
	• **identify applications of what was learned**		• **Cross Curricular, Drawing Conclusions, Analysis, Oral Communication**
	• **identify new questions that arise from the investigation.**		• **Inquiry, Cross Curricular**

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Big Idea, Major Concepts, GLOs	Specific Learning Outcomes ELOs are bold [NICE TO KNOW are italics]	Season	Nehiyaw Ways of Knowing
	PROBLEM SOLVING THROUGH TECHNOLOGY		
	GENERAL LEARNER EXPECTATION 3–3 **Investigate a practical problem, and develop a possible solution.**		
Focus	• identify the purpose of the object to be constructed: What is to be developed? What is it for?		
Explore and Investigate	• attempt a variety of strategies to complete tasks		
	• **identify steps followed in completing the task and explain the purpose of each step**		• **Research Procedures, Sequencing, Communication**
	• **identify materials and how they are used**		• **Research Procedures, Sequencing, Land Based Learning (L.B.L) Habitats in natural Environment**
	• engage in all parts of the task and support the efforts of others		
	• **identify, with guidance, sources of information and ideas and, with guidance, access information and ideas from those sources. Sources may include library, classroom, community and computer-based resources**		• **Cross Curricular, Research Skills, Problem Solving, Elders as Knowledge Keepers**
Reflect and Interpret	• **communicate results of construction activities, using written and oral language and pictures**		• **Cross Curricular, Research Skills, Draw Conclusions**
	• **evaluate the product and identify possible improvements**		• **Draw Conclusions**
	• **identify new applications for the design or method of construction.**		• **Cross Curricular, Research Skills, Draw Conclusions**

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Big Idea, Major Concepts, GLOs	Specific Learning Outcomes ELOs are bold [NICE TO KNOW are italics]	Season	Nehiyaw Ways of Knowing
	ATTITUDES		
GENERAL LEARNER EXPECTATION 3–4 **Demonstrate positive attitudes for the study of science and for the application of science in responsible ways.**			• **Respect, Resiliency, Responsibility, Elders as Knowledge Keepers, Sharing Circles**
Students will show growth in acquiring and applying the following traits:	• **curiosity**		• **L.B.L., Cross Curricular, Experimentation**
	• **confidence in personal ability to explore materials and learn by direct study**		• **L.B.L., Cross Curricular**
	• **inventiveness**		
	• **perseverance: staying with an investigation over a sustained period of time**		
	• appreciation of the value of experience and careful observation		
	• a willingness to work with others and to consider their ideas		
	• a sense of responsibility for actions taken		
	• **respect for living things and environments, and commitment for their care**		• **Stewardship, Elders as Knowledge Keepers, L.B.L., (Life Cycles, Habitat)**

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Big Idea, Major Concepts, GLOs	Specific Learning Outcomes ELOs are bold [NICE TO KNOW are italics]	Season	Nehiyaw Ways of Knowing
	TOPIC A: ROCKS AND MINERALS		
GENERAL LEARNER EXPECTATION 3–5 **Demonstrate knowledge of materials that comprise Earth's crust, and demonstrate skill in classifying these materials.**			• **Research Skills, Sequencing, Elders as Knowledge Keepers, Stories**
	1. Compare samples of various kinds of rock, and identify similarities and differences.		• **Elders as Knowledge Keepers, Analysis**
	2. Given a description of the properties of a particular rock or mineral, identify a sample rock or mineral that matches those properties. Properties that students should be able to describe and interpret include: • **colour** • **lustre or "shininess"; e.g., shiny, dull, glassy, metallic, earthy** • **texture; e.g., rough, smooth, uneven** • **hardness, based on scratch tests with available materials** • **presence of carbonates. Note that the presence of carbonates can be tested with vinegar or another mild acid** • **crystal shape for minerals, or overall pattern of rocks.**		
	3. Describe and classify a group of rocks and minerals, based upon the above properties.		• **Rocks Unit. Can tell stories about places with special types of rocks.**
	4. Recognize that rocks are composed of a variety of materials; and given a course grained rock and magnifier, describe some of the component materials.		
	5. Recognize and describe the various components within a sample of soil; e.g., clay, sand, pebbles, decaying plants; and describe differences between two different soil samples.		
	6. Describe ways in which rocks break down to become soil, and demonstrate one or more of these ways; e.g., by shaking a group of small, soft rocks in a jar of water; by striking rocks together. Note: Safety goggles should be used.		• **Problem Solving, Outdoor Activity**
	7. Describe some common uses of rocks and minerals; and identify examples of those uses within the school, home or local community.		• **Analyzing, Outdoor Activity**

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	TOPIC B: BUILDING WITH A VARIETY OF MATERIALS		
	GENERAL LEARNER EXPECTATION 3-6 **Use, safely, a variety of tools, techniques and materials in construction activities.**		• **Respect, Sequencing**
	GENERAL LEARNER EXPECTATION 3-7 **Construct structures, using a variety of materials and designs, and compare the effectiveness of the various materials and designs for their intended purposes.**		• **L.B.L Outdoor Activities, Compare and Contrast**
	1. Using a variety of materials and techniques, design, construct and test structures that are intended to: • **support objects** • **span gaps** • **serve as containers**		• **Problem Solving, Curiosity, L.B.L., Planning and Organizing, Tipee Building**
	• *serve as models of particular living things, objects or buildings.*		
	2. Select appropriate materials for use in construction tasks, and explain the choice of materials. Students should demonstrate familiarity with a variety of materials, such as papers, woods, plastics, clay and metals.		• **Oral Communication, Public Speaking, Research skills**
	3. Select tools that are suitable to particular tasks and materials, and use them safely and effectively.		• **Research Skills, Decision Making**
	4. Understand and use a variety of methods to join or fasten materials.		• **Experimentation**
	5. Identify the intended purpose and use of structures to be built, and explain how knowing the intended purpose and use helps guide decisions regarding materials and design.		• **Experimentation, Oral Communication**
	6. Understand that simple designs are often as effective as more complex ones, as well as being easier and cheaper to build, and illustrate this understanding with a practical example.		• **Drawing Conclusions, Experimentation**
	7. Recognize the importance of good workmanship, and demonstrate growth toward good workmanship.		• **Drawing Conclusions, Experimentation**
	8. Maintain and store materials and tools safely and properly.		• **Stewardship, Sequencing, L.B.L**
	9. Apply skills of listening, speaking and cooperative decision making in working with other students on a construction project.		

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	TOPIC C: TESTING MATERIALS AND DESIGNS		
	GENERAL LEARNER EXPECTATION 3–8 **Evaluate the suitability of different materials and designs for their use in a building task.**		
	1. Recognize that functional structures must be sufficiently strong and stable and that unstable or weak structures are often unsafe to use.		
	2. Compare and evaluate the strength and stability of different models or objects constructed.		• **Inquiry, Experimentation, L.B.L**
	3. Describe the distinctive properties of some common solids, such as wood, paper or plastic, that make them suitable for use as building materials.		• **Cross Curricular, L.B.L**
	4. Apply procedures to test the strength of construction materials, in particular, different stocks of papers, plastics or wood.		
	5. Apply procedures to test different designs.		• **Cross Curricular, Experimentation, planning and organizing, Practice various snow shoes, Snaring**
	6. Apply procedures to test the strength of different methods of joining.		
	7. Identify and apply methods for making a structure stronger and more stable; e.g., by adding or joining parts to form triangles.		
	TOPIC D: HEARING AND SOUND		
	GENERAL LEARNER EXPECTATION 3–9 **Describe the nature of sound, and demonstrate methods for producing and controlling sound.**		• **Animal calling, hunting**
	1. Identify examples of vibration.		• **Research, Cree natural law**
	2. Recognize that sound is the result of vibration; and demonstrate that the larger the vibration, the louder the sound.		• **Research, Cree natural law, Compare and Contrast**

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	3. Recognize that there are ways of measuring the loudness of sounds and that loud sounds pose a danger to the ear.		
	4. Recognize that pitch is the result of differences in the rate of vibration, and predict how a change in the rate of vibration will affect a sound.		
	5. Demonstrate a variety of ways of producing sounds; e.g., by striking an empty glass, by blowing air into a bottle, by constructing and using a device that involves vibrating strings.		
	6. Use sound-producing devices that the student has constructed to demonstrate methods for controlling the loudness, pitch and quality of sound produced.		
	7. Identify examples that show that sound can travel through a variety of materials, including solids, liquids and air, and that sound travels in all directions.		
	8. Describe how the human ear senses vibrations.		• **Cross Curricular, Compare and Contrast, Experimentation**
	9. Compare the range of hearing in humans to that in other animals; e.g., dogs and bats.		
	10. Recognize that certain sounds have characteristics that cause them to be interpreted as pleasant or unpleasant, and identify these characteristics.		• **L.B.L Outdoor Activities (animal calls), Compare and Contrast (Cross Curricular)**
	11. Describe changes in hearing that result from continued exposure to loud noise and from the natural process of aging.		
	12. Construct and evaluate different kinds of soundproofing and sound-amplifying devices.		• **Experimentation, Problem Solving, Analyzing**
	13. Explain the role that sound plays in communication.		• **Cross Curricular, Research Skills, L.B.L Outdoor Activities (Animal Calls)**

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	TOPIC E: ANIMAL LIFE CYCLES		
	GENERAL LEARNER EXPECTATION 3-10 **Describe the appearances and life cycles of some common animals, and identify their adaptations to different environments.**		• **L.B.L Outdoor Activities,Cross Curricular (Compare and Contrast), Stewardship**
	GENERAL LEARNER EXPECTATION 3-11 **Identify requirements for animal care.**		
	1. Classify a variety of animals, based on observable characteristics; e.g., limbs, teeth, body covering, overall shape, backbone.		• **Cross Curricular (Sequencing, Compare and Contrast) Research Skills, L.B.L (Outdoor Activities)**
	2. Observe and describe the growth and development of at least one living animal, as the animal develops from early to more advanced stages. The animal(s) should be from one or more of the following groups: mammals, birds, fish, reptiles, amphibians, insects. Suggested examples include: gerbils, guppies, mealworms, tadpoles, worms, butterflies/moths. Additional examples from other animal groups might also be included: brine shrimp, isopods, spiders.		
	3. Predict the next stages in the growth and development of at least one animal from each of the following groups: mammals, birds, fish, reptiles, amphibians, insects; and identify similarities and differences in their developmental sequences.		
	4. Identify the food needs of at least one animal from each of the following groups: mammals, birds, fish, reptiles, amphibians, insects; and describe changes in how each animal obtains food through different stages of its life.		• **Cross Curricular (Sequencing, Compare and Contrast) Research Skills, L.B.L (Outdoor Activities)**
	5. Demonstrate awareness that parental care is characteristic of some animals and not of others, and identify examples of different forms of parental care.		• **Experimentation**
	6. Demonstrate awareness that animals require different habitats in order to meet their basic needs of food, water, shelter and space.		

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	7. Recognize adaptations of a young animal to its environment, and identify changes in its relationship to its environment as it goes through life; e.g., tadpoles are adapted for life in an aquatic environment; adult frogs show adaptations to both terrestrial and aquatic environments		• **Story-telling, Adding Details, L.B.L (outdoor activities)**
	8. Identify examples of environmental conditions that may threaten animal survival, and identify examples of extinct animals.		• **Story-telling, stewardship, senses**
	9. Recognize that habitat preservation can help maintain animal populations, and identify ways that student actions can assist habitat preservation.		
	10. Demonstrate knowledge of the needs of animals studied, and demonstrate skills for their care.		• **Research Skills, story-telling, stewardship, senses**