

KEE TAS KEE NOW TRIBAL COUNCIL EDUCATION AUTHORITY COMMON, CONSISTENT CURRICULUM

<p>GRADE EIGHT - SPRING</p> <p>The Learning Outcomes listed in this spreadsheet must be taught during the SPRING season. Learning outcomes must be grounded in Nehiyaw Ways of Knowing and Land Based Learning.</p>	<p>Yellow means "Essential Learning Outcomes".</p>	<p>White means "Need to Know" or Worth Being Familiar With"</p>	<p>Pink means the ELOs must be taught/reinforced all year, especially in ELA.</p>					
<p>English Language Arts</p>	<p>The content from Land Based Learning, Nehiyaw Ways of Knowing, Social Studies, Science, should be applied to the ELA outcomes. Throughout the year, teachers will collaborate and generate more/other ideas that will value add to the suggested connections. In some cases, specific reference has been made to a particular season, although most ELOs in ELA should be taught/reinforced all year long. FALL WINTER SPRING</p>	<p>Science</p> <p>All Attitudes and Skills listed at the end of each science unit are important and should be included as part of the unit of study, but are not highlighted as essential because it was inferred that they have been taught in elementary grades or are cross curricular.</p>	<p>Suggested connections (not exhaustive) to Nehiyaw Ways of Knowing and Land Based Learning. Throughout the year, teachers will collaborate and generate more/other ideas that will value add to the suggested connections.</p>	<p>Mathematics</p>	<p>The content from Land Based Learning, Nehiyaw Ways of Knowing, Social Studies, Science, should be applied to the Mathematics outcomes. Throughout the year, teachers will collaborate and generate more/other ideas that will value add to the suggested connections.</p>	<p>Social Studies</p>	<p>Suggested connections (not exhaustive) to Nehiyaw Ways of Knowing and Land Based Learning. Throughout the year, teachers will collaborate and generate more/other ideas that will value add to the suggested connections.</p>	

General Outcome 1: Students will listen, speak, read, write, view and represent to explore thoughts, ideas, feelings and experiences.		Unit D: Mechanical Systems	WINTER/ Early SPRING	SHAPE AND SPACE	Worldviews in Conflict: The Spanish and the Aztecs	
1.1 Discover and Explore		Specific Outcomes for Science, Technology and Society		General Outcome (Measurement): Use direct and indirect measurement to solve problems.	General Outcome: Through an examination of Spanish and Aztec societies, students will demonstrate an understanding and appreciation of how intercultural contact affects the worldviews of societies.	
Express ideas and develop understanding		1. Illustrate the development of science and technology by describing, comparing and interpreting mechanical devices that have been improved over time		Specific Outcomes	Values and Attitudes	
revise understanding and expression of ideas by connecting new and prior knowledge and experiences		<ul style="list-style-type: none"> investigate and provide examples of mechanical devices used in the past to meet particular needs (e.g., describe and interpret devices developed to move water or be moved by water, such as the Persian wheel, Archimedes' screw, mill wheel) 	Explore traditional devices for hunting, building fires, trapping, hide tanning stations, spear throwing, bow and arrow, etc.	1. Develop and apply the Pythagorean theorem to solve problems. [CN, PS, R, T, V] [ICT: P2–3.4]	8.3.1 Appreciate how a society's worldview influences the society's choices, decisions and interactions with other societies (C, I)	
review, reread, discuss and reflect on oral, print and other media texts to explore, confirm or revise understanding		<ul style="list-style-type: none"> illustrate how a common need has been met in different ways over time (e.g., development of different kinds of lifting devices) 		2. Draw and construct nets for 3-D objects. [C, CN, PS, V]	8.3.2 Appreciate how Aztec and Spanish identities and worldviews were affected by intercultural contact (TCC, GC, I)	
seek out and consider diverse ideas, opinions and experiences to develop and extend own ideas, opinions and experiences		<ul style="list-style-type: none"> illustrate how trial and error and scientific knowledge both play a role in technological development (e.g., development of aircraft) 		3. Determine the surface area of: [C, CN, PS, R, V] <ul style="list-style-type: none"> right rectangular prisms right triangular prisms right cylinders to solve problems. 	8.3.3 Appreciate and recognize how rapid adaptation can radically change a society's beliefs, values and knowledge (TCC, GC)	
Experiment with language and forms		2. Analyze machines by describing the structures and functions of the overall system, the subsystems and the component parts		4. Develop and apply formulas for determining the volume of right rectangular prisms, right triangular prisms and right cylinders. [C, CN, PS, R, V]	Knowledge and Understanding	

discuss and respond to ways that forms of oral, print and other media texts enhance or constrain the development and communication of ideas, information and experiences		<ul style="list-style-type: none"> analyze a mechanical device, by: <ul style="list-style-type: none"> describing the overall function of the device describing the contribution of individual components or subsystems to the overall function of the device identifying components that operate as simple machines 	Use traditional Indigenous mechanical devices such as bow and arrow and compare to a compound bow.		General Outcome (3-D Objects and 2-D Shapes): Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them.	8.3.4 Assess, critically, how the Aztecs were affected by the Spanish worldview by exploring and reflecting upon the following questions and issues:	
Express preferences		<ul style="list-style-type: none"> identify the source of energy for some familiar mechanical devices 		Specific Outcomes		<ul style="list-style-type: none"> What were the key elements of the worldview of the Aztec civilization prior to contact with the Spanish? (TCC, I, CC) 	
pursue personal interest in specific genres by particular writers, artists, storytellers and filmmakers		<ul style="list-style-type: none"> identify linkages and power transmissions in a mechanical device, and describe their general function (e.g., identify the purpose and general function of belt drives and gear systems within a mechanical device) 		5. Draw and interpret top, front and side views of 3-D objects composed of right rectangular prisms. [C, CN, R, T, V] [ICT: C6–3.4]		<ul style="list-style-type: none"> How did the Aztec civilization's worldview influence the Aztecs' choices, decisions and customs? (TCC, CC, PADM) 	Aztec's worldviews were similar to Indigenous worldviews in some ways (eg. turtle island)
Set goals		3. Investigate and describe the transmission of force and energy between parts of a mechanical system		General Outcome (Transformations): Describe and analyze position and motion of objects and shapes.		<ul style="list-style-type: none"> What key elements of Spain's worldview led to the desire to expand the Spanish empire? (TCC, I, PADM) 	
examine and reflect on own growth in effective use of language to revise and extend personal goals		<ul style="list-style-type: none"> analyze mechanical devices to determine speed ratios and force ratios 		Specific Outcomes		<ul style="list-style-type: none"> In what ways did factors such as technology and disease contribute to the dominance of the Spanish over the Aztec civilization? (ER, LPP) 	
1.2 Clarify and Extend		<ul style="list-style-type: none"> build or modify a model mechanical system to provide for different turning ratios between a driving and driven shaft, or to achieve a given force ratio 		6. Demonstrate an understanding of the congruence of polygons. [CN, R, V]		<ul style="list-style-type: none"> To what extent were the divergent worldviews of the Spanish and Aztecs factors in the dominance of one nation over the other? (TCC, CC, GC, PADM) 	History experienced by our Indigenous peoples is repeated with the Aztecs
Consider others' ideas		<ul style="list-style-type: none"> compare theoretical and actual values of force ratios, and propose explanations for discrepancies (e.g., identify frictional forces, and estimate their effect on efficiency) 		STATISTICS AND PROBABILITY		Skills and Processes For Social Studies	
acknowledge the value of the ideas and opinions of others in exploring and extending personal interpretations and perspectives		<ul style="list-style-type: none"> identify work input and work output in joules for a simple machine or mechanical system (e.g., use a device to lift a measured mass an identified distance, then calculate the work output) 		General Outcome (Data Analysis): Collect, display and analyze data to solve problems.		Dimensions of Thinking	

Combine ideas		<ul style="list-style-type: none"> describe fluid pressure qualitatively and quantitatively, by: <ul style="list-style-type: none"> explaining how forces are transferred in all directions – describing pressure in units of force per unit area 		Specific Outcomes		8.S.1 Develop skills of critical thinking and creative thinking:	
exchange ideas and opinions to clarify understanding and to broaden personal perspectives		<ul style="list-style-type: none"> describe how hydraulic pressure can be used to create a mechanical advantage in a simple hydraulic jack (e.g., describe the relationship among force, piston size and distance moved, using different sized syringes linked by tubing) 		1. Critique ways in which data is presented in circle graphs, line graphs, bar graphs and pictographs. [C, R, T, V] [ICT: C7–3.1, C7–3.2, F4–3.3]		<ul style="list-style-type: none"> analyze the validity of information based on context, bias, source, objectivity, evidence and reliability to broaden understanding of a topic or an issue 	
Extend understanding		<ul style="list-style-type: none"> describe and interpret technologies based on hydraulics and pneumatics (e.g., applications in hydraulic lifts and air-driven tools) 		General Outcome (Chance and Uncertainty): Use experimental or theoretical probabilities to represent and solve problems involving uncertainty.		<ul style="list-style-type: none"> evaluate ideas, information and positions from multiple perspectives 	
reconsider and revise initial understandings and responses in light of new ideas, information and feedback from others		4. Analyze the social and environmental contexts of science and technology, as they apply to the development of mechanical devices		Specific Outcomes		<ul style="list-style-type: none"> demonstrate the ability to analyze local and current affairs 	
		<ul style="list-style-type: none"> evaluate the design and function of a mechanical device in relation to its efficiency and effectiveness, and identify its impacts on humans and the environment 		2. Solve problems involving the probability of independent events. [C, CN, PS, T] [ICT: P2–3.4]		<ul style="list-style-type: none"> re-evaluate personal opinions to broaden understanding of a topic or an issue 	
General Outcome 2: Students will listen, speak, read, write, view and represent to comprehend and respond personally and critically to oral, print and other media texts.		<ul style="list-style-type: none"> develop and apply a set of criteria for evaluating a given mechanical device, and defend those criteria in terms of relevance to social and environmental needs 				<ul style="list-style-type: none"> generate creative ideas and strategies in individual and group activities access diverse viewpoints on particular topics by using appropriate technologies 	
2.1 Use Strategies and Cues		<ul style="list-style-type: none"> illustrate how technological development is influenced by advances in science, and by changes in society and the environment 				8.S.2 Develop skills of historical thinking:	
Use prior knowledge		Specific Outcomes for Skills				<ul style="list-style-type: none"> distinguish cause, effect, sequence and correlation in historical events, including the long- and short-term causal relations 	

use strategies to supplement and extend prior knowledge and experiences when interpreting new ideas and information		Initiating and Planning Students will: Ask questions about the relationships between and among observable variables, and plan investigations to address those questions					<ul style="list-style-type: none"> • use historical and community resources to organize the sequence of historical events 	
use knowledge of authors, forms and genres, developed during previous reading, to direct and extend reading experiences		<ul style="list-style-type: none"> • identify practical problems (e.g., identify problems related to the effectiveness or efficiency of a mechanical device) 					<ul style="list-style-type: none"> • analyze the historical contexts of key events of a given time period - create a simulation or a model by using technology that permits the making of inferences - identify patterns in organized information 	
Use comprehension strategies		<ul style="list-style-type: none"> • identify questions to investigate arising from practical problems (e.g., "What is the efficiency of this device?") 					8.S.3 Develop skills of geographic thinking:	
enhance understanding by paraphrasing main ideas and supporting details, and by rereading and discussing relevant passages		<ul style="list-style-type: none"> • propose alternative solutions to a practical problem, select one, and develop a plan 					<ul style="list-style-type: none"> • interpret historical maps to broaden understanding of historical events 	
monitor understanding; skim, scan or read slowly and carefully, as appropriate, to enhance comprehension		<ul style="list-style-type: none"> • select appropriate methods and tools for collecting data to solve problems (e.g., develop or apply appropriate methods for measuring speed ratios and force ratios; plan and conduct a search, using a wide variety of electronic sources) 					<ul style="list-style-type: none"> • use thematic maps to describe cultural and political regions 	
take notes, make outlines and use such strategies as read, recite, review to comprehend and remember ideas and information		<ul style="list-style-type: none"> • formulate operational definitions of major variables and other aspects of their investigations (e.g., define "frictional force" by identifying a method to be used for measuring it) 					<ul style="list-style-type: none"> • construct and interpret various maps to broaden understanding of given topics 	
Use textual cues		Performing and Recording Students will: Conduct investigations into the relationships between and among observations, and gather and record qualitative and quantitative data					<ul style="list-style-type: none"> • define geographic problems and issues and pose geographic questions 	

identify and use visual and textual cues in reference materials, such as catalogues, databases, web sites, thesauri and writers' handbooks, to access information effectively and efficiently		<ul style="list-style-type: none"> research information relevant to a given problem 					<ul style="list-style-type: none"> use geographic tools, such as Geographic Information Systems (GIS) software, to assist in preparing graphs and maps access and operate multimedia applications and technologies from stand-alone and online sources; e.g., GIS 	
identify and use structural features of a variety of oral, print and other media texts, such as newspapers, magazines, instruction booklets, advertisements and schedules, encountered in everyday life to access ideas and information and to read with purpose		<ul style="list-style-type: none"> select and integrate information from various print and electronic sources or from several parts of the same source 					8.S.4 Demonstrate skills of decision making and problem solving:	
Use phonics and structural analysis		<ul style="list-style-type: none"> construct and test prototype designs and systems 					<ul style="list-style-type: none"> demonstrate skills of compromise and devise strategies to reach group consensus 	
choose and use strategies for word identification, vocabulary development and spelling that either build on specific strengths or address areas for improvement		<ul style="list-style-type: none"> carry out procedures, controlling the major variables (e.g., ensure that materials to be tested are of the same size and are tested under identical conditions) 					<ul style="list-style-type: none"> propose and apply new ideas and strategies, supported with facts and reasons, to contribute to problem solving and decision making 	
Use references		<ul style="list-style-type: none"> organize data, using a format that is appropriate to the task or experiment 					<ul style="list-style-type: none"> propose and apply strategies or options to solve problems and deal with issues 	
use a thesaurus to extend vocabulary and locate appropriate words that express particular aspects of meaning		<ul style="list-style-type: none"> use tools and apparatus safely 					<ul style="list-style-type: none"> participate in and predict outcomes of problem-solving and decision-making scenarios articulate clearly a plan of action to use technology to solve a problem identify the appropriate materials and tools to use in order to accomplish a plan of action evaluate choices and the progress in problem solving, then redefine the plan of action as appropriate use networks to brainstorm, plan and share ideas with group members 	
2.2 Respond to Texts		Analyzing and Interpreting Students will: Analyze qualitative and quantitative data, and develop and assess possible explanations					Social Participation as a Democratic Practice	

Experience various text		<ul style="list-style-type: none"> identify and correct practical problems in the way a prototype or constructed device functions 					8.S.5 Demonstrate skills of cooperation, conflict resolution and consensus building:	
experience oral, print and other media texts from a variety of cultural traditions and genres, such as magazine articles, diaries, drama, poetry, Internet passages, fantasy, nonfiction, advertisements and photographs		<ul style="list-style-type: none"> evaluate designs and prototypes in terms of function, reliability, safety, efficiency, use of materials and impact on the environment (e.g., test and evaluate the efficiency and reliability of a prototype device to lift a given mass from the floor to a tabletop) 					<ul style="list-style-type: none"> identify and use a variety of strategies to resolve conflicts peacefully and fairly 	
write and represent narratives from other points of view		<ul style="list-style-type: none"> identify and evaluate potential applications of findings (e.g., identify possible applications of a simple machine or mechanical system they have studied) 					<ul style="list-style-type: none"> consider the needs and perspectives of others 	
expect that there is more than one interpretation for oral, print and other media texts, and discuss other points of view		Communication and Teamwork Students will: Work collaboratively on problems; and use appropriate language and formats to communicate ideas, procedures and results					<ul style="list-style-type: none"> demonstrate leadership within groups where appropriate - access, retrieve and share information from electronic sources, such as common files 	
explain connections between own interpretation and information in texts, and infer how texts will influence others		<ul style="list-style-type: none"> use specific language that is scientifically and technologically appropriate (e.g., use such terms as “system,” “subsystem,” “component” and “function” in describing a mechanical system) 					8.S.6 Develop age-appropriate behaviour for social involvement as responsible citizens contributing to their community:	
make connections between biographical information about authors, illustrators, storytellers and filmmakers and their texts		<ul style="list-style-type: none"> communicate practical problems, plans and results in a variety of ways, using written and oral language, data tables, graphs, drawings and other means (e.g., describe, using pictures and words, the transmission of a force through a mechanical system) 					<ul style="list-style-type: none"> volunteer with organizations, projects and activities that ensure the growth and vitality of their community 	
		<ul style="list-style-type: none"> work cooperatively with team members to develop and carry out a plan, and troubleshoot problems as they arise 					Research for Deliberative Inquiry	
Construct meaning from texts		Specific Outcomes for Attitudes					8.S.7 Apply the research process:	

interpret the choices and motives of characters portrayed in oral, print and other media texts, and examine how they relate to self and others		<p>Interest in Science Students will be encouraged to: Show interest in science-related questions and issues, and pursue personal interests and career possibilities within science-related fields (e.g., investigate examples of mechanical devices in their home and community; ask questions about techniques and materials used; show an interest in related careers and hobbies)</p>					<ul style="list-style-type: none"> integrate and synthesize concepts to provide an informed point of view on a research question or an issue 	
identify and describe characters' attributes and motivations, using evidence from the text and personal experiences		<p>Mutual Respect Students will be encouraged to: Appreciate that scientific understanding evolves from the interaction of ideas involving people with different views and backgrounds (e.g., recognize that varied solutions to similar problems have been developed by different cultures throughout history; appreciate that different approaches to problems lead to different solutions, and that each may have merits for particular applications)</p>					<ul style="list-style-type: none"> develop a position that is supported by information gathered through research 	
discuss various ways characters are developed and the reasons for and plausibility of character change		<p>Scientific Inquiry Students will be encouraged to: Seek and apply evidence when evaluating alternative approaches to investigations, problems and issues (e.g., report the limitations of their designs; continue working on a problem or research project until the best possible solutions or answers are uncovered)</p>					<ul style="list-style-type: none"> draw conclusions based upon research and evidence 	
compare two similar oral, print or other media texts by considering the characters, plot, conflicts and main ideas		<p>Collaboration Students will be encouraged to: Work collaboratively in carrying out investigations and in generating and evaluating ideas (e.g., accept various roles within a group, including that of leadership; understand that they can disagree with others but still work in a collaborative manner; share the responsibility for difficulties encountered during an activity)</p>					<ul style="list-style-type: none"> determine how information serves a variety of purposes and that the accuracy or relevance of information may need verification 	

<p>Appreciate the artistry of texts</p>		<p>Stewardship Students will be encouraged to: Demonstrate sensitivity and responsibility in pursuing a balance between the needs of humans and a sustainable environment (e.g., consider the impacts of their designs on society and the environment; participate in discussions on the appropriateness of a given technology)</p>					<ul style="list-style-type: none"> • organize and synthesize researched information 	
<p>discuss how techniques, such as word choice, balance, camera angles, line and framing, communicate meaning and enhance effects in oral, print and other media texts</p>		<p>Safety Students will be encouraged to: Show concern for safety in planning, carrying out and reviewing activities (e.g., readily alter a procedure to ensure the safety of members of the group; carefully manipulate materials, using skills learned in class or elsewhere; listen attentively to safety procedures given by the teacher)</p>					<ul style="list-style-type: none"> • formulate new questions as research progresses 	
<p>identify ways that characters can be developed, and discuss how character, plot and setting are interconnected and mutually supportive</p>		<p>Unit E: Freshwater and Saltwater Systems</p>	<p>Late Spring</p>				<ul style="list-style-type: none"> • practise the responsible and ethical use of information and technology 	

<p>identify and discuss how word choice and order, figurative language, plot, setting and character work together to create mood and tone</p>		<p>Specific Outcomes for Science, Technology and Society</p>					<ul style="list-style-type: none"> • include and organize references as part of research - plan and conduct a search, using a wide variety of electronic sources - demonstrate the advanced search skills necessary to limit the number of hits desired for online and offline databases; for example, the use of “and” or “or” between search topics and the choice of appropriate search engines for the topic - develop a process to manage volumes of information that can be made available through electronic sources - evaluate the relevance of electronically accessed information to a particular topic - make connections among related, organized data, and assemble various pieces into a unified message - refine searches to limit sources to a manageable number - analyze and synthesize information to create a product - access and retrieve information through the electronic network 	
		<p>1. Describe the distribution and characteristics of water in local and global environments, and identify the significance of water supply and quality to the needs of humans and other living things</p>					<p>Communication</p>	

<p>2.3 Understand Forms, Elements and Techniques</p>		<ul style="list-style-type: none"> describe, in general terms, the distribution of water in Alberta, Canada and the world; and interpret information about water characteristics (e.g., identify glaciers, snow, polar icecaps, ground water and oceans as components of Earth's water; interpret graphical information on the availability of potable water) 	<p>Explore how water is part of renewal in spring. Explore how each community within KTC gets its potable water and challenges related to good water supply. Explore how water changes from winter to spring and the flow of water throughout the KTC communities.</p>				<p>8.S.8 Demonstrate skills of oral, written and visual literacy:</p>	
<p>Understand forms and genres</p>		<ul style="list-style-type: none"> recognize that fresh water and salt water contain varying amounts of dissolved materials, particulates and biological components; and interpret information on these component materials 					<ul style="list-style-type: none"> communicate in a persuasive and engaging manner through speeches, multimedia presentations and written and oral reports, taking particular audiences and purposes into consideration 	
<p>discuss how the choice of form or genre of oral, print and other media texts is appropriate to purpose and audience</p>		<ul style="list-style-type: none"> identify major factors used in determining if water is potable, and describe and demonstrate tests of water quality (e.g., investigate and describe the physical characteristics of a sample of water, such as clarity, salinity and hardness; investigate biological tests) 	<p>Invite speakers from the local water treatment plant or health departments to demonstrate tests to see if water is potable. Explore traditional Indigenous stories that talk about how horses only drink water that is safe.</p>				<ul style="list-style-type: none"> use skills of informal debate to persuasively express differing viewpoints regarding an issue 	

compare the usefulness of different types of media texts		<ul style="list-style-type: none"> describe, in general terms, methods for generating fresh water from salt water, based on evaporation, distillation and reverse osmosis 	Explore methods to convert stream, river or lake water into safe, potable water.				<ul style="list-style-type: none"> elicit, clarify and respond appropriately to questions, ideas and multiple points of view presented in discussions 	
Understand techniques and elements		2. Investigate and interpret linkages among landforms, water and climate					<ul style="list-style-type: none"> offer reasoned comments related to a topic of discussion 	
distinguish theme from topic or main idea in oral, print and other media texts		<ul style="list-style-type: none"> describe the processes of erosion and deposition resulting from wave action and water flow, by: <ul style="list-style-type: none"> identifying dissolved solids and sediment loads, and identifying sources and endpoints for these materials describing how waves and tides are generated and how they interact with shorelines 					<ul style="list-style-type: none"> listen to others to understand their points of view 	
identify and explain characters' qualities and motivations, by considering their words and actions, their interactions with other characters and the author's or narrator's perspective		<ul style="list-style-type: none"> investigate and describe stream characteristics (e.g., describe the slope, flow rate and stream profile characteristics of a model stream on a stream table) 					8.S.9 Develop skills of media literacy:	
compare and contrast the different perspectives provided by first and third person narration		<ul style="list-style-type: none"> describe processes leading to the development of ocean basins and continental drainage systems (e.g., describe the formation of geological features on the ocean floor, such as continental shelves and trenches) 					<ul style="list-style-type: none"> examine techniques used to enhance the authority and authenticity of media messages 	
summarize the content of media texts, and discuss the choices made in planning and producing them		<ul style="list-style-type: none"> identify evidence of glacial action, and analyze factors affecting the growth and attrition of glaciers and polar icecaps (e.g., identify factors that affect the size of polar ice sheets and the Columbia Icefield) 					<ul style="list-style-type: none"> examine the values, lifestyles and points of view represented in a media message 	
		<ul style="list-style-type: none"> describe the movement of ocean currents and its impact on regional climates (e.g., effects of the Gulf Stream, Labrador Current, El Niño, La Niña) 					<ul style="list-style-type: none"> analyze the impact of television, the Internet, radio and print media on a particular current affairs issue 	
Experiment with language		3. Analyze factors affecting productivity and species distribution in marine and freshwater environments						

<p>identify creative uses of language and visuals in popular culture, such as commercials, rock videos and magazines; explain how imagery and figurative language, such as hyperbole, create tone and mood</p>		<ul style="list-style-type: none"> investigate life forms found in fresh water and salt water, and identify and interpret examples of adaptations to these environments (e.g., describe and interpret examples of fish and invertebrate species found in a local freshwater environment) 						
<p>2.4 Create Original Text</p>		<ul style="list-style-type: none"> analyze factors that contribute to the development of adaptations in species found in saltwater and freshwater environments 	<p>Explore how fish such as whitefish, pickeral and jackfish adapt to their environments. Look at how the salmon adapts from moving from salt water to fresh water.</p>					
<p>Generate ideas</p>		<ul style="list-style-type: none"> investigate and interpret examples of seasonal, short-term and long-term change in populations of living things found in aquatic environments (e.g., algal blooms, changes in local freshwater fish populations, cod and salmon stock depletion) 						
<p>create oral, print and other media texts related to issues encountered in texts and in own life</p>		<ul style="list-style-type: none"> analyze relationships between water quality and living things, and infer the quality of water based on the diversity of life supported by it 						
<p>Elaborate on the expression of ideas</p>		<p>4. Analyze human impacts on aquatic systems; and identify the roles of science and technology in addressing related questions, problems and issues</p>						

<p>retell oral, print and other media texts from different points of view</p>		<ul style="list-style-type: none"> analyze human water uses, and identify the nature and scope of impacts resulting from different uses (e.g., identify pollutants in ground water and surface water systems resulting from domestic and industrial use; analyze the effects of agriculture and forestry practices on stream flow and water quality) 	<p>Explore how fertilizers contribute to blue algae. Explore how pesticides and insecticides get into the water system and its impact on the quality of the water. Explore impact of human activity (and industry) on local water systems. Identify if landfill residue seeps into the water supply.</p>					
<p>Structure texts</p>		<ul style="list-style-type: none"> identify current practices and technologies that affect water quality, evaluate environmental costs and benefits, and identify and evaluate alternatives (e.g., research and analyze alternatives for ensuring safe supplies of potable water; research, analyze and debate alternatives for a specific water quality issue, such as the location and design of a landfill, the protection of a natural waterway, the use of secondary and tertiary wastewater treatment, the salinization of soils due to irrigation, the eutrophication of ponds and streams due to excess use of phosphates in fertilizers and detergents, or a proposal to export water resources) 	<p>Explore the impact of a broken pipeline and how it affects the water quality.</p>					

create oral, print and other media texts with both main and minor characters		<ul style="list-style-type: none"> • illustrate the role of scientific research in monitoring environments and supporting development of appropriate environmental technologies (e.g., describe a local example of aquatic monitoring, and describe how this research contributes to watershed management) 						
choose forms or genres of oral, print or other media texts for the particular affects they will have on audiences and purposes		<ul style="list-style-type: none"> • provide examples of problems that cannot be solved using scientific and technological knowledge alone (e.g., the need to prevent pollutants from entering aquatic environments, the need to avoid damage from ice sheets and icebergs) 	Discuss how each student has a responsibility for the quality of their water supply (eg. throwing garbage in the lake, etc.) Students can create a campaign promoting safe water supply and how the community can do their part to protect their water supply - all stewards of the environment.					
		Specific Outcomes for Skills						
General Outcome 3: Students will listen, speak, read, write, view and represent to manage ideas and information.		Initiating and Planning Students will: Ask questions about the relationships between and among observable variables, and plan investigations to address those questions						
3.1 Plan and Focus		<ul style="list-style-type: none"> • identify science-related issues and problems 						
Focus attention		<ul style="list-style-type: none"> • identify questions to investigate, arising from science-related issues 						

experiment with several ways to focus a topic, and select a form appropriate to audience and purpose		<ul style="list-style-type: none"> select appropriate methods and tools for collecting relevant data and information (e.g., plan and conduct a search, using a wide variety of electronic sources) 						
identify and trace the development of arguments, opinions or points of view in oral, print and other media texts		<ul style="list-style-type: none"> design an experiment, and identify the major variables (e.g., design an experiment to compare the characteristics of two water samples) 						
Determine information needs		Performing and Recording Students will: Conduct investigations into the relationships between and among observations, and gather and record qualitative and quantitative data						
select the most appropriate information sources for topic, audience, purpose and form		<ul style="list-style-type: none"> research information relevant to a given issue 						
Plan to gather information		<ul style="list-style-type: none"> select and integrate information from various print and electronic sources or from several parts of the same source (e.g., summarize information on a river basin) 						
choose a plan to access, gather and record information, according to self-selected parameters		<ul style="list-style-type: none"> identify strengths and weaknesses of different methods of collecting and displaying data (e.g., identify strengths and weaknesses of technologies used to monitor and map changes in stream flow) 						
3.2 Select and Process		Analyzing and Interpreting Students will: Analyze qualitative and quantitative data, and develop and assess possible explanations						
Use a variety of sources		<ul style="list-style-type: none"> apply given criteria for evaluating evidence and sources of information (e.g., assess the authenticity and reliability of electronic sources) 						
obtain information from a variety of sources, such as artifacts, debates, forums, biographies, autobiographies, surveys, documentaries, films, CDROMs, charts and tables, when conducting research		<ul style="list-style-type: none"> predict the value of a variable, by interpolating or extrapolating from graphical data (e.g., predict future stocks of fish based on long-term data) 						

<p>Access information</p>		<ul style="list-style-type: none"> • interpret patterns and trends in data, and infer and explain relationships among the variables (e.g., relate climates to proximity to oceans and to the characteristics of ocean currents) 						
<p>expand and use a variety of tools and text features, such as subtitles, margin notes, key words, electronic searches, previews, reviews, visual effects and sound effects, to access information</p>		<ul style="list-style-type: none"> • identify new questions and problems arising from what was learned (e.g., identify questions, such as: “Can ocean currents be modified?”, “Is kelp a viable source of food?”, “How would icecap melting change Canadian coastlines?”) 						
<p>record key ideas and information from oral, print and other media texts, avoiding overuse of direct quotations</p>		<p>Communication and Teamwork Students will: Work collaboratively on problems; and use appropriate language and formats to communicate ideas, procedures and results</p>						
<p>adjust rate of reading or viewing to suit purpose and density of information in print or other media texts</p>		<ul style="list-style-type: none"> • use appropriate vocabulary, including correct science and technology terminology, to communicate ideas, procedures and results (e.g., use such terms as salinity, currents and basins when describing oceans and their characteristics) 						
<p>Evaluate sources</p>		<ul style="list-style-type: none"> • communicate questions, ideas, intentions, plans and results, using lists, notes in point form, sentences, data tables, graphs, drawings, oral language and other means (e.g., create a concept map, linking the different stages of the water cycle; prepare a multimedia presentation on changing climatic conditions and the effects on glaciers, ice sheets and water levels, incorporating graphics, audio, visuals and text gathered from remote sources) 						

develop and use criteria for evaluating the usefulness, currency and reliability of information for a particular research project		<ul style="list-style-type: none"> • evaluate individual and group processes used in planning, problem solving, decision making and completing a task (e.g., discuss advantages and disadvantages of different research methods and sources used to gather information on an ocean basin) 						
3.3 Organize, Record and Evaluate		<ul style="list-style-type: none"> • defend a given position on an issue, based on their findings 						
Organize information								
organize ideas and information creatively, as well as logically, to develop a comparison or chronology, or to show a cause–effect relationship		Specific Outcomes for Attitudes						
organize ideas and information to establish an overall impression or point of view in oral, print and other media texts		<p>Interest in Science</p> <p>Students will be encouraged to: Show interest in science-related questions and issues, and pursue personal interests and career possibilities within science-related fields (e.g., express interest in conducting scientific investigations of their own design; take an interest in media reports on environmental issues, and seek out further information from a variety of sources; take an interest in observing and interpreting their environment during personal and group excursions)</p>						
Record information		<p>Mutual Respect</p> <p>Students will be encouraged to: Appreciate that scientific understanding evolves from the interaction of ideas involving people with different views and backgrounds (e.g., show awareness of and respect for the contributions of indigenous peoples to knowledge of the environment)</p>						

<p>make notes in point form, summarizing major ideas and supporting details; reference sources</p>		<p>Scientific Inquiry Students will be encouraged to: Seek and apply evidence when evaluating alternative approaches to investigations, problems and issues (e.g., seek data that is accurate and based on appropriate methods of investigation; consider observations and ideas from a number of sources before drawing conclusions)</p>						
<p>discard information that is irrelevant for audience, purpose, form or point of view</p>		<p>Collaboration Students will be encouraged to: Work collaboratively in carrying out investigations and in generating and evaluating ideas (e.g., share observations and ideas with other members of a group, and consider alternative ideas suggested by other group members; share the responsibility for carrying out decisions)</p>						
<p>use a consistent and approved format to give credit for quoted and paraphrased ideas and information</p>		<p>Stewardship Students will be encouraged to: Demonstrate sensitivity and responsibility in pursuing a balance between the needs of humans and a sustainable environment (e.g., consider immediate and long-term consequences of personal and group actions; objectively identify potential conflicts between responding to human wants and needs and protecting the environment)</p>						
<p>Evaluate information</p>		<p>Safety Students will be encouraged to: Show concern for safety in planning, carrying out and reviewing activities (e.g., select safe methods and tools for collecting evidence and solving problems; readily alter a procedure to ensure the safety of members of the group)</p>						
<p>evaluate the relevance and importance of gathered information; address information gaps</p>								

incorporate new information with prior knowledge and experiences to develop new understanding								
3.4 Share and Review								
Share ideas and information								
communicate ideas and information in a variety of oral, print and other media texts, such as interviews, minilessons and documentaries								
integrate appropriate visual, print and/or other media to inform and engage the audience								
Review research process								
assess the research process, and consider alternative ways of achieving research goals								
General Outcome 4: Students will listen, speak, read, write, view and represent to enhance the clarity and artistry of communication.								
4.1 Enhance and Improve								
Appraise own and others' work								
share draft oral, print and other media texts in a way that will elicit useful feedback								
evaluate how particular content features contribute to, or detract from, the overall effectiveness of own and others' oral, print and other media texts; make and suggest revisions								
Revise and edit								
revise by adding words and phrases that emphasize important ideas or create dominant impressions								
revise to enhance sentence variety, word choice and appropriate tone								
enhance the coherence and impact of documents, using electronic editing functions								
use paragraph structures to demonstrate unity and coherence								
Enhance legibility								
vary handwriting style and pace, depending on the context, audience and purpose								

choose an effective format for documents, depending on the content, audience and purpose								
Expand knowledge of language								
explore and explain ways that new words, phrases and manners of expression enter the language as a result of factors, such as popular culture, technology, other languages								
infer the literal and figurative meaning of words in context, using idioms, analogies, metaphors and similes								
Enhance artistry								
experiment with figurative language, voice, sentence patterns, camera angle and music to create an impression or mood								
4.2 Attend to Conventions								
Attend to grammar and usage								
use words and phrases to modify, clarify and enhance ideas and descriptions in own writing								
use a variety of simple, compound and complex sentence structures to communicate effectively, and to make writing interesting								
use correct pronoun– antecedent agreement in own writing								
use verb tenses consistently throughout a piece of writing								
Attend to spelling								
develop a systematic and effective approach to studying and remembering the correct spelling of key words encountered in a variety of print and other media texts								
use knowledge of spelling generalizations and how words are formed to spell technical terms and unfamiliar words in own writing								
identify the use of spelling variants in print and other media texts, and discuss the effectiveness depending on audience and purpose								
Attend to capitalization and punctuation								

use hyphens to break words at the end of lines, and to make a new word from two related words in own writing								
identify semicolons, dashes and hyphens when reading, and use them to assist comprehension								
use parentheses appropriately in own writing								
use appropriate capitalization and punctuation for referencing oral, print and other media texts								
4.3 Present and Share								
Present information								
plan and facilitate small group and short, whole class presentations to share information								
Enhance presentation								
present information to achieve a particular purpose and to appeal to interest and background knowledge of reader or audience								
Use effective oral and visual communication								
plan and shape presentations to achieve particular purposes or effects, and use feedback from rehearsals to make modifications								
Demonstrate attentive listening and viewing								
anticipate the organizational pattern of presentations, and identify important ideas and supporting details								
use appropriate verbal and nonverbal feedback to respond respectfully								
General Outcome 5: Students will listen, speak, read, write, view and represent to respect, support and collaborate with others.								
5.1 Respect Others and Strengthen Community								
Appreciate diversity								
compare own with others' understanding of people, cultural traditions and values portrayed in oral, print and other media texts								

clarify and broaden perspectives and opinions, by examining the ideas of others								
Relate texts to culture								
compare ways in which oral, print and other media texts reflect specific elements of cultures or periods in history								
Celebrate accomplishments and events								
participate in organizing and celebrating special events, recognizing the appropriateness and significance of language arts								
Use language to show respect								
use inclusive language and actions that demonstrate respect for people of different races, cultures, genders, ages and abilities								
5.2 Work Within a Group								
Cooperate with others								
propose ideas or advocate points of view that recognize the ideas of others and advance the thinking of the group								
use opportunities as a group member to contribute to group goals and extend own learning								
Work in groups								
contribute ideas, knowledge and strategies to identify group information needs and sources								
organize and complete tasks cooperatively by defining roles and responsibilities, negotiating to find the basis for agreement, setting objectives and time frames, and reviewing progress								
Evaluate group process								
evaluate the quality of own contributions to group process, and offer constructive feedback to others; propose suggestions for improvement								