SCIENCE CURRICULUM SASKATCHEWAN

GRADE K - 8





VISIT: 3P.STEMSCOPES.SCIENCE



CONTENTS

Grade K	pg 3
Grade 1	pg 7
Grade 2	pg 15
Grade 3	pg 24
Grade 4	pg 34
Grade 5	pg 45
Grade 6	pg 63
Grade 7	pg 76
Grade 8	pg 98
Contact Us	pg 121



Scope Name	Grade	Standard	Description
Electric and Magnetic Forces	К	FEK.1.	Examine the effects of physical forces, magnetic forces, light energy, sound energy, and heat energy, on objects in their environment. [SI]
		FEK.1.a.	DescriptionExamine the effects of physical forces, magnetic forces, light energy, sound energy, and heat energy, on objects in their environment. [SI]Investigate how applying or removing physical and magnetic forces of varying intensity can
		FEK.1.b.	Predict and test the results of applying physical and magnetic forces, including friction, to an object or removing forces from an object.
		FEK.1.c.	Describe the effects of applying forces of varying intensity on various objects using personal language such as "it moved", "it stopped", and "it changed direction".
		FEK.1.d.	Observe the effects of magnets on a variety of metallic and non-metallic objects and sort those objects based on their attraction to magnets.
Weather Conditions	К	NSK.1.	Explore features of their natural surroundings , including changes to those surroundings over time. [DM, SI]
		NSK.1.a.	 Pose questions related to features of their local surroundings such as "Where did the rain water go?", "Why is some snow harder than other snow? and "Is a grain of sand a rock?" Describe and illustrate features of their local surroundings such as soil type and texture, weather conditions .
		NSK.1.c.	
		NSK.1.d.	Identify, with guidance, changes in one or more aspects of their natural surroundings over a given time interval .
		NSK.1.b.	Gather and record information about characteristics of their natural surroundings using all of their senses and technologies such as digital cameras, audio recorders, video recorders, and sketchpads.
Compare Needs and Characteristics	К	LTK.1.	Examine observable characteristics of plants, animals, and people in their local environment. [CP, SI]
		LTK.1.a.	Pose questions about observable characteristics of plants and animals such as "Do all animals have four legs?", "How do fish breathe?", "Are all plants green?", and "Do plants breathe?"



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		LTK.1.b.	Record with assistance, observable characteristics of plants, animals, and people found at school, home, or in the community, using terminology and language that others understand.
		LTK.1.c.	Seek out information about the observable characteristics of plants, animals, and people from a variety of sources, such as family members, friends, Elders, knowledge keepers, and scientists.
		LTK.1.d.	Select and safely use appropriate tools such as a hand lens and digital camera to observe plants and animals in the local environment.
		LTK.1.e.	Show respect for the needs of other people, other living things, and the environment when observing and interacting with living things .
		LTK.1.f.	Explore portrayals of plants, animals, and people through stories and artwork from various cultures, including First Nations and Métis.
		LTK.1.g.	Share stories and observations of plants, animals, and people in the local environment with classmates or others.
		LTK.1.h.	Identify similarities and differences in observable characteristics among different plants, among different animals, and among different people.
		LTK.1.i.	Sort and classify pictures and drawings of plants, animals, and people using student-developed criteria.
		LTK.1.j.	Create visual, dramatic, and/or multimedia representations of the characteristics of a student- selected plant or animal to share with classmates and others.
Measurement of Weather	К	NSK.1.	Explore features of their natural surroundings , including changes to those surroundings over time. [DM, SI]
		NSK.1.a.	Pose questions related to features of their local surroundings such as "Where did the rain water go?", "Why is some snow harder than other snow?", and "Is a grain of sand a rock?"
	NSK.1. NSK.1.	NSK.1.b.	Gather and record information about characteristics of their natural surroundings using all of their senses and technologies such as digital cameras, audio recorders, video recorders, and sketchpads.
		NSK.1.c.	Describe and illustrate features of their local surroundings such as soil type and texture, weather conditions .



		NSK.1.d.	Identify, with guidance, changes in one or more aspects of their natural surroundings over a given time interval .
		NSK.1.f.	Respond to and acknowledge the ideas of classmates and others such as traditional knowledge keepers and conservation officers who provide information about our natural surroundings.
Reducing Human Impact	К	NSK.1.	Explore features of their natural surroundings , including changes to those surroundings over time. [DM, SI]
		NSK.1.e.	Suggest ways in which human activities intentionally or unintentionally cause changes to natural surroundings .
Behaviour of Light	К	FEK.1.	Examine the effects of physical forces, magnetic forces, light energy, sound energy, and heat energy, on objects in their environment. [SI]
		FEK.1.e.	Identify natural and artificial sources of light, sound, and heat in their environment.
		FEK.1.f.	Conduct simple investigations into the effects of light, sound, and heat on different objects, including self, through free exploration, focused exploration, and guided activity using inquiry skills.
		FEK.1.g.	Describe personal observations of the effects of light, sound, and heat energy on objects, including self, using stems such as I see, I hear, it feels, it smells, and it tastes.
		FEK.1.h.	Predict effects of the removal of light, sound, and/ or heat from their environment.
Properties and States of Matter	К	МОК.1.	Investigate observable characteristics of familiar objects and materials in their environment. [SI]
		MOK.1.a.	Pose questions about characteristics of objects and materials that lead to exploration and investigation.
		MOK.1.b.	Identify different materials that make up familiar objects found in their learning environment .
		MOK.1.c.	Differentiate between objects and the materials used to construct the object.
		MOK.1.d.	Identify observable characteristics of materials, such as colour, texture, and odour, and observable characteristics of objects, such as shape, size, and weight.
		MOK.1.e.	Explore how materials may change as a result of processes such as cutting, gluing together, heating, cooling, folding, and pouring them into different containers.



	MOK.1.f.	Sequence or group objects and materials according to one or more student-selected criteria .
	MOK.1.g.	Discuss how familiar objects are designed to meet human needs.
	MOK.1.h.	Identify and explore ways to use appropriate tools safely to help carry out a variety of useful tasks such as stapling, measuring, hammering, gluing, and cooking.
	МОК.1.і.	Explain how tools and other objects are designed to meet human needs.



Scope Name	Grade	Standard	Description
Building Blocks of Matter	Grade Standa 1 OM1.1 OM1.1 OM1.1 OM1.1	ОМ1.1.	Investigate observable characteristics and uses of natural and constructed objects and materials in their environment. [CP, SI]
		OM1.1.a.	Pose questions about characteristics and uses of common materials.
		OM1.1.b.	Distinguish between objects and materials found in nature and those constructed by humans.
		ОМ1.1.с.	Observe natural and constructed objects and materials in their environment in a safe and respectful manner using all their senses as well as technologies, such as hand lenses, cameras, and microphones, which enhance the senses.
		OM1.1.d.	Record relevant observations about common objects and materials using written language, pictures, and tables.
		OM1.1.e.	Compare the properties objects.
		OM1.1.f.	Distinguish between the materials used to construct an object and the object itself.
		OM1.1.g.	Predict the characteristics of common materials and carry out a procedure to test those predictions.
		OM1.1.h.	Explain why the characteristics of materials help to determine their usefulness within different objects.
		OM1.1.i.	Evaluate the suitability of materials for a specific function.
		ОМ1.1.ј.	Sequence or group materials and objects according to one or more properties such as texture, colour, smell, hardness, and lustre.
		OM1.1.k.	Analyze how common objects and materials are depicted in texts, pictures, and videos.
Exploring Materials		OM1.1.I.	Suggest alternative uses for common objects and materials.
		OM1.1.m.	Generate conclusions about the properties and uses of materials based on personal observations and investigations.
	1	ОМ1.2.	Examine methods of altering and combining materials to create objects that meet student- and/ or teacher-specified criteria. [SI, TPS]
		ОМ1.2.а.	Select and use materials to carry out explorations of altering materials to change their appearance, texture, sound, smell, or taste to change the way they are used.



		OM1.2.b.	Assess how altering the smell, taste, appearance, texture, and/or sound of materials may change the way they may be used.
		OM1.2.c.	Examine methods of joining materials of the same and different types.
		OM1.2.d.	Use appropriate tools correctly and safely for manipulating and observing materials and when constructing useful objects.
		OM1.2.e.	Follow a simple procedure to make a useful object from recyclable materials .
		OM1.2.f.	Design and construct a useful object that meets a student specified function by selecting, combining, joining, and/or altering materials.
		OM1.2.g.	Evaluate, using student-identified criteria, personally-constructed objects with respect to their suitability for a particular function.
		OM1.2.h.	Communicate procedures and results of their design and construction process using drawings, demonstrations, and written and oral descriptions.
		ОМ1.2.і.	Describe and demonstrate ways to use materials appropriately and efficiently to the benefit of themselves, others, and the environment .
Plant and Animal Characteristics in Literature	1	LT1.1.	Differentiate between living things according to observable characteristics, including appearance and behaviour. [CP, SI]
		LT1.1.a.	Use a variety of sources of information and ideas to learn about observable characteristics of living things.
		LT1.1.g.	Record information, using written language, pictures, and tables, about the appearance and behaviour of familiar animals, such as classroom or personal pets, at regular intervals over a specific time interval.
		LT1.1.I.	Respond positively to others' questions and ideas about the observable characteristics of living things.
		LT1.1.m.	Recognize that some information about living things may not be realistic .
Five Senses	1	SE1.1.	Investigate characteristics of the five traditional external senses in humans and animals. [CP, SI]
		SE1.1.a.	Identify each of the senses and associate those senses with parts of humans or other animals, including sight and eyes, smell and nose, hearing and ears, taste and tongue/nose, and touch and skin.



	SE1.1.b.	Identify characteristics used to describe the range of observations related to each sense .
	SE1.1.c.	Provide examples of their favourite and least favourite sounds, smells, tastes, colours, and textures.
	SE1.1.d.	Discriminate among various natural and artificial sounds that humans can hear.
	SE1.1.e.	Explain the purposes of hearing in animals and humans.
	SE1.1.f.	Investigate the sensitivity of different parts of the body to the touch of various materials .
	SE1.1.g.	Assess the ability of humans and other animals to distinguish among various smells.
	SE1.1.h.	Categorize foods as sweet, sour, salty, or bitter, and compare results with others.
	SE1.1.i.	Sort objects and materials according to characteristics related to one or more senses.
	SE1.1.j.	Communicate questions, ideas, and intentions while conducting explorations of the human senses.
	SE1.2.	Explore how humans and animals use their senses to interact with their environment. [CP, DM, SI]
	SE1.2.a.	Pose questions that lead to exploration and investigation of human and animal senses.
	SE1.2.b.	Record observations about specific objects in their environment using all of their senses as appropriate.
	SE1.2.c.	Record observations of various environments using all of their senses as appropriate.
	SE1.2.d.	Imagine, and compare with others, possible sensations that students would likely experience in other environments based on representations of those environments.
	SE1.2.e.	Explain and follow given safety procedures and rules when using the senses to observe .
	SE1.2.f.	Assess the function of aids that support peoples' differing abilities to sense their environment.
	SE1.2.g.	Experience changes in ability to explore the environment after the simulated loss of one or more senses .
	SE1.2.h.	Suggest how a human or animal might function if they were totally or partially missing one or more of the five senses.



		SE1.2.i.	Explain how each of the senses helps us to recognize, describe, and safely use materials, and recognize potential dangers in the environment .
		SE1.2.j.	Discuss dangers associated with using the senses to examine the environment .
		SE1.2.k.	Describe different sense organs and/or adaptations that enable various animals to accomplish their daily tasks .
		SE1.2.I.	Provide examples of how the senses are important to people in their hobbies and jobs.
Weather	1	1 DS1.1.	Compare and represent daily and seasonal changes of natural phenomena through observing, measuring, sequencing, and recording. [CP, SI]
		DS1.1.e.	Use a variety of tools that occur in daily and seasonal cycles.
		NSK.1.g.	Communicate ideas, actions, experiences, and understandings of patterns and cycles in the natural world with others using charts, displays, videos, stories, or other artistic representations.
Animal Needs	1	LT1.2.	Analyze different ways in which plants, animals, and humans interact with various natural and constructed environments to meet their basic needs. [CP, DM, SI]
		LT1.2.a.	Identify the physical needs, that plants, animals, and humans require for survival.
		LT1.2.b.	Pose questions about ways in which plants interact with their environments to meet their basic needs .
		LT1.2.e.	Compare ways in which plants and animals that live within the local environment, and plants and animals that live in other environments, meet their needs for food, water, and shelter.
		LT1.2.f.	Compare the kinds of food that different animals eat, their methods of eating , and the structures that they have for eating.
		LT1.2.g.	Explore the challenges that plants, animals, and humans encounter when attempting to meet their basic needs in constructed environments .
		LT1.2.h.	Discuss the need for caution when dealing with plants and animals .
		LT1.2.i.	Compare basic human needs to the needs of plants, other animals, and non-living things.
		LT1.2.j.	Predict and model how certain animals will move to meet their needs for food, shelter, and protection in their environment, based on personal observations, pictures, or videos.



		LT1.2.k.	Explore how people demonstrate respect for living
Habitats	1	LT1.2.	Analyze different ways in which plants, animals, and humans interact with various natural and constructed environments to meet their basic needs. [CP, DM, SI]
		LT1.2.c.	Pose questions about ways in which animals interact with their environments to meet their basic needs .
		LT1.2.d.	Investigate, through field trips to natural habitats, nature videos, and community walks, homes and habitats of local plants and animals to determine how they meet their basic needs.
Communication	1	SE1.1.	Investigate characteristics of the five traditional external senses in humans and animals. [CP, SI]
		SE1.1.a.	Identify each of the senses and associate those senses with parts of humans or other animals, including sight and eyes, smell and nose, hearing and ears, taste and tongue/nose, and touch and skin.
		SE1.1.b.	Identify characteristics used to describe the range of observations related to each sense .
		SE1.1.c.	Provide examples of their favourite and least favourite sounds, smells, tastes, colours, and textures.
		SE1.1.d.	Discriminate among various natural and artificial sounds that humans can hear.
		SE1.1.e.	Explain the purposes of hearing in animals and humans.
		SE1.1.f.	Investigate the sensitivity of different parts of the body to the touch of various materials .
		SE1.1.j.	Communicate questions, ideas, and intentions while conducting explorations of the human senses.
		SE1.2.f.	Assess the function of aids that support peoples' differing abilities to sense their environment.
		SE1.2.I.	Provide examples of how the senses are important to people in their hobbies and jobs.
Parts of Animals	1	LT1.1.	Differentiate between living things according to observable characteristics, including appearance and behaviour. [CP, SI]
		LT1.1.b.	Make and record observations and measurements about the observable characteristics of plants and animals using written language, pictures, and charts.



	LT1.1.c.	Group representations of plants and animals according to various student-developed criteria.	
		LT1.1.d.	Engage in personal, scientific, and Indigenous ways of organizing understanding of living things.
		LT1.1.e.	Describe characteristics common to humans that make each human unique.
		LT1.1.h.	Describe the appearance and behaviour .
		LT1.1.i.	Differentiate among animals according to their observable characteristics.
		LT1.1.k.	Communicate knowledge about the observable characteristics of a favourite plant or animal.
Animal Survival	1	LT1.2.	Analyze different ways in which plants, animals, and humans interact with various natural and constructed environments to meet their basic needs. [CP, DM, SI]
		LT1.2.a.	Identify the physical needs, that plants, animals, and humans require for survival.
		LT1.2.b.	Pose questions about ways in which plants interact with their environments to meet their basic needs .
Plant Survival	1	LT1.2.	Analyze different ways in which plants, animals, and humans interact with various natural and constructed environments to meet their basic needs. [CP, DM, SI]
		LT1.2.a.	Identify the physical needs, that plants, animals, and humans require for survival.
		LT1.2.b.	Pose questions about ways in which plants interact with their environments to meet their basic needs .
		LT1.2.e.	Compare ways in which plants and animals that live within the local environment, and plants and animals that live in other environments, meet their needs for food, water, and shelter.
		LT1.2.f.	Compare the kinds of food that different animals eat, their methods of eating , and the structures that they have for eating.
		LT1.2.g.	Explore the challenges that plants, animals, and humans encounter when attempting to meet their basic needs in constructed environments .
		LT1.2.h.	Discuss the need for caution when dealing with plants and animals .
		LT1.2.i.	Compare basic human needs to the needs of plants, other animals, and non-living things.
		LT1.2.j.	Predict and model how certain animals will move to meet their needs for food, shelter, and protection in their environment, based on personal observations, pictures, or videos.



Seasonal Patterns	1	DS1.2.	Inquire into the ways in which plants, animals, and humans adapt to daily and seasonal changes by changing their appearance, behaviour, and/or location. [CP, DM, SI]	
		DS1.1.	Compare and represent daily and seasonal changes of natural phenomena through observing, measuring, sequencing, and recording. [CP, SI]	
		DS1.1.a.	Pose questions about changes in natural phenomena in the environment over the course of a day and a year.	
		DS1.1.d.	Examine ways in which various cultures, including First Nations and Métis, represent daily and seasonal changes through oral traditions and artistic works.	
		DS1.2.a.	Pose questions about plant, animal, and human adaptation to daily and seasonal changes .	
		DS1.2.b.	Make predictions about plant, animal, and human adaptations to daily and seasonal changes based on observed patterns .	
	1	DS1.2.c.	Examine daily changes in the characteristics, behaviours, and location of plants, animals, and humans .	
		DS1.2.d.	Examine seasonal changes in the characteristics, behaviours, and location of plants, animals, and humans .	
		DS1.2.e.	Explore ways in which plant, animal, and human adaptations to daily and seasonal changes are represented through fiction and non-fiction writing and the arts .	
		DS1.2.f.	Construct representations of plant, animal, and human adaptations to daily and seasonal changes .	
		DS1.2.g.	Describe ways in which humans prepare to adapt to daily and seasonal changes .	
Parts of Plants		DS1.2.h.	Pose new questions based on what was learned about plant, animal, and human adaptations to daily and seasonal changes.	
		DS1.2.i.	Communicate questions, ideas, and intentions with classmates while conducting their explorations into daily and seasonal adaptations .	
		LT1.1.	Differentiate between living things according to observable characteristics, including appearance and behaviour. [CP, SI]	
			LT1.1.f.	Compare observable characteristics of plants of various types and sizes that live in different habitats.
		LT1.1.j.	Compare characteristics of plants and animals at different stages of their lives .	



Patterns in Space	1	DS1.1.	Compare and represent daily and seasonal changes of natural phenomena through observing, measuring, sequencing, and recording. [CP, SI]
		DS1.1.b.	Identify the days of the week, months of the year, and seasons.
		DS1.1.c.	Observe daily and seasonal changes in the amount of heat and light from the sun, including the formation of shadows .
		DS1.1.f.	Document the visibility and position of objects in the sky at different times of the day and year.
		DS1.1.g.	Record observations of the shape and position of the moon throughout a month.
		DS1.1.h.	Sequence or group objects, materials, and events according to one or more attributes related to daily and/or seasonal changes .
		DS1.1.i.	Create visual or physical representations of differences in natural phenomena at different times of the day and/or year.
		DS1.1.j.	Communicate observations about daily and seasonal changes using vocabulary such as days of the week, seasons of the year, today, tomorrow, tonight, morning, afternoon, evening, and night.



Scope Name	Grade	Standard	Description						
Forms of Water on Earth	2	AW2.1.	Investigate properties of air and water within their environment. [SI, TPS]						
		AW2.1.e.	Categorize examples of water in indoor and outdoor environments, and in living things, including themselves, according to state of matter .						
		AW2.2.	Assess the importance of air and water for the health and survival of living things, including self, and the environment. [CP, DM]						
		AW2.2.d.	Explain how living things, including humans, require clean air and water for breathing, cooling, drinking, cooking, bathing, and prevention of illness to maintain a healthy body.						
Pushes and Pulls	2	MP2.1.	Analyze methods of determining the position of objects relative to other objects. [SI]						
		MP2.1.a.	Describe the position of an object relative to other positions or stationary objects, including themselves, using appropriate vocabulary such as above, below, between, beside, on top, close to, far from, behind, in front of, to the right of, and to the left of.						
		MP2.1.b.	Place an object in an identified position relative to another object or position.						
		MP2.1.c.	Assess the use of common objects to describe the position of an object using non-standard units.						
		MP2.1.d.	Use appropriate tools safely for observing and recording objects' positions.						
		MP2.1.e.	Record observations and measurements of an object's position, using oral and written language, diagrams, and tables.						
								MP2.1.f.	Represent the position of objects as seen from different perspectives using words, diagrams, and actions.
							MP2.1.g.	Collaborate with other students to describe the position of an object from different positions using drawings, and written and oral descriptions.	
			MP2.1.h.	Explore how changing one's own position affects one's perspective of position relative to self and other objects.					
			MP2.1.i.	Create a set of directions that other students can follow to locate a specified position.					
			MP2.1.j.	Follow directions to move in a specified way to different positions.					



Humans and Familiar Animals	2	AN2.3.	Assess the interdependence of humans and animals in natural and constructed environments. [CP, DM]
		AN2.3.d.	Assess features of natural environments that support or hinder the health and growth of familiar animals.
		AN2.3.e.	Analyze ways in which human activities intentionally or unintentionally can help or harm wild and domesticated animals.
		AN2.3.f.	Examine ways in which humans and animals interact with each other , including ways in which animals can cause harm to humans.
		AN2.3.g.	Discuss the care and handling of wild and domesticated animals , including keeping animals as pets, housing animals in zoos and aquariums, and identifying careers related to animal care.
Water Safety	2	AW2.2.	Assess the importance of air and water for the health and survival of living things, including self, and the environment. [CP, DM]
		AW2.2.h.	Suggest explanations for how air and water in the environment can become polluted.
		AW2.2.i.	Suggest ways that individuals can contribute to protecting and improving the quality of air and water in their environment .
		AW2.2.j.	Propose an answer to a question or problem related to the importance of air and water for living things.
Patterns in Nature	ture 2	AW2.2.	Assess the importance of air and water for the health and survival of living things, including self, and the environment. [CP, DM]
		AW2.2.a.	Pose questions that lead to exploration and investigation about air and water conditions .
		AW2.2.b.	Describe changes in the location, amount, and form of moisture in different locations in the environment, and factors such as exposure to heat and moving air that can affect these conditions.
Air	2	AW2.1.	Investigate properties of air and water within their environment. [SI, TPS]
		AW2.1.a.	Observe, using all of their senses, physical properties of air .
		AW2.1.b.	Select appropriate tools and materials to carry out safely their own explorations of air and water in their environment through processes such as collecting dew, rainfall, and snow; measuring wind speed; and measuring temperature.



		AW/2 1 c	Moasuro amounts of air and water using non	
		Avv2.1.C.	standard measurements .	
		AW2.1.d.	Provide evidence indicating air takes up space, has mass, and can be felt when it moves.	
		AW2.1.h.	Collaboratively design and construct a device that is powered by wind or water and that meets a student-identified purpose.	
		AW2.1.j.	Communicate procedures and results of observations of the physical properties of air and water, using drawings, demonstrations, and written and oral descriptions.	
		AW2.2.	Assess the importance of air and water for the health and survival of living things, including self, and the environment. [CP, DM]	
		AW2.2.h.	Suggest explanations for how air and water in the environment can become polluted.	
		AW2.2.i.	Suggest ways that individuals can contribute to protecting and improving the quality of air and water in their environment .	
		AW2.2.j.	Propose an answer to a question or problem related to the importance of air and water for living things.	
		AW2.2.c.	Recognize the importance of air and water as two of the four elements in Mother Earth in First Nations, Métis, and other cultures.	
States of Water 2	2	AW2.1.f.	Investigate physical .	
		AW2.1.g.	Carry out procedures to investigate methods of increasing or decreasing the rate water changes state .	
		AW2.1.h.	Collaboratively design and construct a device that is powered by wind or water and that meets a student-identified purpose.	
		AW2.1.i.	Classify or sequence materials according to attributes such as how quickly they absorb water, how much water they absorb, and whether they are waterproof or water repellent.	
		AW2.1.c.	Measure amounts of air and water using non- standard measurements .	
			AW2.1.j.	Communicate procedures and results of observations of the physical properties of air and water, using drawings, demonstrations, and written and oral descriptions.
		AW2.2.	Assess the importance of air and water for the health and survival of living things, including self, and the environment. [CP, DM]	



		AW2.2.c.	Recognize the importance of air and water as two of the four elements in Mother Earth in First Nations, Métis, and other cultures.
		AW2.2.e.	Explain how water is obtained, distributed, and used in personal, local, and regional environments .
		AW2.2.f.	Communicate questions, ideas, and intentions while conducting personal and group explorations of air and water in the environment.
		AW2.2.g.	Record, using tables, diagrams, pictographs, or bar graphs, individual, classroom, and/or household use of water for a given period.
Speed and Direction	2	MP2.1.	Analyze methods of determining the position of objects relative to other objects. [SI]
		MP2.1.a.	Describe the position of an object relative to other positions or stationary objects, including themselves, using appropriate vocabulary such as above, below, between, beside, on top, close to, far from, behind, in front of, to the right of, and to the left of.
		MP2.1.b.	Place an object in an identified position relative to another object or position.
		MP2.1.c.	Assess the use of common objects to describe the position of an object using non-standard units.
		MP2.1.d.	Use appropriate tools safely for observing and recording objects' positions.
		MP2.1.e.	Record observations and measurements of an object's position, using oral and written language, diagrams, and tables.
		MP2.1.f.	Represent the position of objects as seen from different perspectives using words, diagrams, and actions.
		MP2.1.g.	Collaborate with other students to describe the position of an object from different positions using drawings, and written and oral descriptions.
		MP2.1.h.	Explore how changing one's own position affects one's perspective of position relative to self and other objects.
		MP2.1.i.	Create a set of directions that other students can follow to locate a specified position.
		MP2.1.j.	Follow directions to move in a specified way to different positions.



Diversity of Living 2 Things	2	AN2.3.	Assess the interdependence of humans and animals in natural and constructed environments. [CP, DM]		
		AN2.3.a.	Predict which animals live in various locations within a variety of natural and constructed environments.		
		AN2.3.b.	Observe familiar animals in natural environments safely and respectfully.		
		AN2.3.c.	Examine the importance and sacredness of animals in First Nations, Métis, and other cultures.		
Objects and Motion 2	2	MP2.1.	Analyze methods of determining the position of objects relative to other objects. [SI]		
		MP2.1.a.	Describe the position of an object relative to other positions or stationary objects, including themselves, using appropriate vocabulary such as above, below, between, beside, on top, close to, far from, behind, in front of, to the right of, and to the left of.		
		MP2.1.b.	Place an object in an identified position relative to another object or position.		
		MP2.1.c.	Assess the use of common objects to describe the position of an object using non-standard units.		
		MP2.1.d.	Use appropriate tools safely for observing and recording objects' positions.		
		MP2.1.e.	Record observations and measurements of an object's position, using oral and written language, diagrams, and tables.		
		MP2.1.f.	Represent the position of objects as seen from different perspectives using words, diagrams, and actions.		
		MP2.1.g.	Collaborate with other students to describe the position of an object from different positions using drawings, and written and oral descriptions.		
				MP2.1.h.	Explore how changing one's own position affects one's perspective of position relative to self and other objects.
		MP2.1.i.	Create a set of directions that other students can follow to locate a specified position.		
		MP2.1.j.	Follow directions to move in a specified way to different positions.		
		MP2.2.	Investigate factors, including friction, which affect the motion of natural and constructed objects, including self. [SI]		
		MP2.2.a.	Pose questions about the motion of natural and constructed objects in their environment .		



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		MP2.2.b.	Describe examples of the motion of natural objects in their environment.
		MP2.2.c.	Describe the motion of an object in terms of a change in position relative to other objects .
		MP2.2.d.	Examine a variety of toys, playground equipment, and other objects that move or which have components that move and ask questions that lead to exploration and investigation of the motion of objects.
		MP2.2.e.	Investigate, describe, and represent different patterns of movement of familiar objects, including themselves.
		MP2.2.f.	Relate the types of motion to the physical characteristics of humans and familiar animals.
		MP2.2.g.	Demonstrate how pushes and pulls can cause an object to speed up, slow down, stop, or change direction.
		MP2.2.h.	Describe the movement of a specified object using appropriate vocabulary so that other students can duplicate the movement.
		MP2.2.i.	Carry out a procedure to investigate the effects of pushes and pulls on the motion of objects using various objects and surfaces .
		MP2.2.j.	Observe and record the effects of different textured surfaces on the friction between two objects or surfaces.
		MP2.2.k.	Provide examples of technologies that are designed to make it easier for people and constructed objects to move on different surfaces.
		MP2.2.I.	Generate new questions about the motion of objects that arise from what was learned .
Life Cycles	Life Cycles 2	AN2.1.	Analyze the growth and development of familiar animals, including birds, fish, insects, reptiles, amphibians, and mammals, during their life cycles. [CP, SI]
		AN2.1.a.	Pose questions about the growth and development of familiar animals.
		AN2.1.b.	Use a variety of resources to find information about the life cycles of living things.
		AN2.1.c.	Identify the names of the offspring of familiar animals.
		AN2.1.d.	Recognize the cyclic nature of Mother Earth expressed by the Medicine Wheel, including life cycles and seasonal behaviours of animals.



		AN2.1.e.	Compare the length and stages of life cycles of familiar animals.
		AN2.1.f.	Describe the characteristics common to each stage .
		AN2.1.g.	Analyze which traits remain relatively constant and which change in specific animals as they grow and develop.
		AN2.1.h.	Create a physical, visual, or dramatic representation of the growth and development of familiar animals during their life cycles.
		AN2.1.i.	Predict how big a specific animal will grow based on observed patterns of animal growth and changes.
		AN2.1.j.	Design an animal suited for life in a particular environment and represent its growth and changes throughout its life cycle.
		AN2.2.	Compare the growth and development of humans with that of familiar animals. [CP, SI]
		AN2.2.a.	Pose questions about similarities and differences between animal and human growth.
		AN2.2.b.	Predict ways in which humans change as they grow.
		AN2.2.c.	Create representations of changes in the growth and development of humans throughout their life cycle .
		AN2.2.d.	Sequence pictures or illustrations of humans and familiar animals according to stage of life cycle.
		AN2.2.e.	Compare patterns in human growth and development to that of familiar animals.
		AN2.2.f.	Examine the implications of traditional and contemporary food choices and eating habits on human growth and development.
		AN2.2.g.	Compare the food choices and eating habits of various familiar animals as they relate to growth and development.
		AN2.2.h.	Communicate personal thoughts and feelings related to personal growth and change, including transitions that are celebrated in various cultures.
Classify Matter	2	LS2.1.	Investigate properties of familiar liquids and solids. [SI]
		LS2.1.a.	Pose questions that lead to investigation and exploration of the properties of familiar liquids and solids.
		LS2.1.b.	Classify objects in various natural and constructed environments as liquids or solids.



	LS2.1.c.	Identify examples of how liquids, in all three states of matter, are used at home, in the school, and throughout their communites.
	LS2.1.d.	Interpret safety symbols and labels that are used on hazardous product containers for liquids and solids.
	LS2.1.e.	Select and safely use materials and tools to carry out explorations of the observable physical properties of familiar liquids and solids.
	LS2.1.f.	Record and compare observable physical properties of familiar liquids and solids.
	LS2.1.g.	Distinguish between properties of familiar liquids and solids.
	LS2.1.h.	Demonstrate that liquids and solids are matter because they have mass and take up space.
	LS2.1.i.	Investigate to determine whether properties of familiar liquids and solids depend on factors such as the amount of substance present.
	LS2.1.j.	Group or sequence liquids and solids according to one or more observable physical properties .
	LS2.1.k.	Predict and test changes in characteristics of liquids when they are changed into solids or gases.
	LS2.2.	Investigate interactions between liquids and solids, and technologies based on those interactions. [CP, SI, TPS]
	LS2.2.a.	Pose questions that lead to exploration and investigation of combining liquids and solids.
	LS2.2.b.	Investigate how liquids change when they are poured into different containers.
	LS2.2.c.	Describe examples of useful objects and materials in their environment that are made by combining different liquids or solids and liquids.
	LS2.2.d.	Investigate and describe the changes in characteristics of familiar solids and liquids resulting from processes such as mixing and dissolving liquids with liquids, solids with solids, and liquids with solids.
	LS2.2.e.	Distinguish between familiar solids that dissolve in water and those that do not.
	LS2.2.f.	Carry out an investigation to determine the relative viscosity of different liquids .
	LS2.2.g.	Design and carry out an investigation to determine the rate and ability of various materials to absorb liquids and explain how these capabilities determine their uses.



	LS2.2.h.	Use a variety of sources .
	LS2.2.i.	Demonstrate an understanding of sinking and floating by solving a related practical problem such as building an object that will float, carry a load, and be stable.
	LS2.2.j.	Assess ways people use knowledge of solids and liquids to maintain a clean and healthy environment .



Scope Name	Grade	Standard	Description																
Properties of Soil	3	ES3.1.	Investigate the characteristics, including soil composition and ability to absorb water, of different types of soils in their environment. [SI]																
		ES3.1.a.	Pose questions and make predictions about the characteristics and composition of soils that lead to exploration and investigation .																
		ES3.1.b.	Examine physical characteristics in their environment.																
		ES3.1.c.	Classify soils in their environment according to location and type .																
		ES3.1.d.	Analyze soil samples using tools such as spoons, hand lenses, jars, and filters appropriately and safely.																
		ES3.1.e.	Make and record observations and measurements in investigations related to soil composition using techniques such as notes in point form, diagrams, tables, bar graphs, photographs, and video.																
		ES3.1.f.	Make predictions about the capability of different types of soil to absorb water and test these predictions through exploration and investigation.																
		ES3.1.g.	Collect and display data, using tables and bar graphs, to show the amount of water absorbed by different types of soil.																
		ES3.1.h.	Sort soil samples according to one or more physical characteristics such as texture, ability to absorb water, particle size, and colour.																
		ES3.1.i.	Communicate procedures and results of investigations related to the testing of water absorption of soils using drawings, demonstrations, and oral and written descriptions.																
		ES3.1.j.	Propose answers to initial questions related to soil composition based on the results of personal investigations.																
																			ES3.2.
		ES3.2.a.	Suggest ways in which individuals and communities value and use soil, including the importance of Mother Earth for First Nations and Métis peoples.																
		ES3.2.b.	Examine the interdependence between animals and soils .																
		ES3.2.c.	Examine the interdependence between plants and soils .																



	ES3.2.d.	Relate the characteristics .	
		ES3.2.e.	Observe the effects of moving water on soils in different environments .
		ES3.2.i.	Research careers that involve an understanding of soil.
Structural Integrity	3	SM3.1.	Investigate properties of materials and methods of joinery used in structures. [CP, TPS]
		SM3.1.a.	Identify problems to be solved relating to the properties of materials in structures .
		SM3.1.b.	Examine the properties of materials used in natural and human- built structures .
		SM3.1.c.	Compare the properties of materials used historically and currently throughout the world to construct structures such as houses, bridges, towers, and roads.
		SM3.1.d.	Sort materials for use in constructing structures according to one or more physical properties such as strength, texture, colour, flexibility, and durability.
		SM3.1.e.	Analyze how various similar and dissimilar materials can be joined and identify the most appropriate methods for joining specific materials for an identified use.
		SM3.1.f.	Use appropriate tools to cut, shape, make holes, sew, and assemble materials safely.
		SM3.1.g.	Develop and carry out a plan, including making predictions, identifying variables, and recording relevant observations, to test the strength of various materials.
		SM3.1.h.	Assess the suitability of various materials for constructing structures, including methods of strengthening those materials .
		SM3.1.i.	Examine the suitability of using recycled materials to construct structures .
		SM3.2.	Assess the function and characteristics of strong, stable, and balanced natural and human-built structures. [CP, TPS]
		SM3.2.a.	Analyze the purpose or function of various natural and human- built structures.
		SM3.2.b.	Examine how some human-built structures are modeled on shapes and structures found in nature.
		SM3.2.c.	Assess how 2-D shapes provide strength, stability, and balance to natural and human-built structures.
		SM3.2.d.	Compare the characteristics of solid structures.



		SM3.2.e.	Classify natural and human-built structures as solid, frame, or shell structures.
		SM3.2.f.	Compare the characteristics of different types of shelter constructed by people throughout the world, past and present.
		SM3.2.g.	Examine the characteristics and significance of historical structures such as Stonehenge, the Parthenon, Petra, the Great Wall of China, Angkor Wat, Machu Picchu, the Taj Mahal, the Pyramids, and Easter Island moai.
		SM3.2.h.	Analyze how various shapes contribute to balance and stability in humans and various animals.
		SM3.2.i.	Develop and carry out a plan to construct a simple structure such as a tower, bridge, tipi, or bird feeder that meets teacher- or student-specified criteria related to strength, stability, and function.
		SM3.2.j.	Estimate measurements to select appropriate quantities of required materials for constructing a structure.
		SM3.2.k.	Follow safety procedures and rules while constructing structures and explain the need for such procedures and rules.
		SM3.2.I.	Illustrate the construction process for a simple structure, including descriptions of the components of the structure, using labelled drawings, written and oral explanations, and demonstrations.
		SM3.2.m.	Assess the strength, stability, and balance of personally- constructed structures and make changes to improve the structure as deemed necessary.
		SM3.2.n.	Identify materials or parts of a structure that failed and hypothesize why they failed.
Plant Structures and Functions		SM3.2.o.	Assess natural and human-built structures to determine if they are effective, safe, make efficient use of materials, meet user's needs, and minimize the impact on the environment.
		SM3.2.p.	Research jobs and hobbies that contribute to the design, building, and maintenance of natural and human-built structures.
	3	PL3.1.	Investigate the growth and development of plants, including the conditions necessary for germination. [CP, SI]
		PL3.1.b.	Observe and explain the function of the major structures of a variety of plants.



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		PL3.1.c.	Relate characteristics such as the number and shape of leaves, flower colour, height, and presence and type of fruit in different types of plants to the plant's environment.	
		PL3.2.	Analyze the interdependence among plants, individuals, society, and the environment. [CP, DM, SI]	
		PL3.2.d.	Examine the importance of agriculture in Saskatchewan, including the variety of plants and plant-related products.	
Force and Motion	3	ME3.1.	Investigate the characteristics of contact forces. [SI]	
		ME3.1.a.	Pose questions related to the characteristics of magnetic and static electric forces .	
		ME3.1.b.	Demonstrate how contact and non-contact forces are able to cause objects to start moving, speed up, slow down, and stop; cause moving objects to change direction; and cause changes to the shape of objects.	
		ME3.1.c.	Compare the characteristics of contact, magnetic, and static electric forces, including the range over which they act, and propose methods of increasing or decreasing the effects of these forces.	
		ME3.1.d.	Group materials according to criteria such as their attraction to magnets and ability to be magnetized based on personal observation.	
		ME3.1.e.	Compare the characteristics and effects of different types and shapes of magnets , and the shape of the magnetic field produced by the magnet.	
		ME3.1.f.	Predict and test the number of objects a magnet can pick up under different conditions and develop simple conclusions about conditions that affect strength of magnetic forces.	
		ME3.1.g.	Investigate how charged materials interact with each other and with uncharged objects.	
		ME3.1.h.	Demonstrate ways to use materials found in their environment to investigate conditions which affect the strength of static electric forces.	
			ME3.1.i.	Make and record relevant observations during investigations to identify conditions that affect the strength of static electric forces, and develop simple conclusions about these conditions.
		ME3.2.	Assess effects of practical applications of magnetic and static electric forces on individuals and society. [CP, TPS]	



		ME3.2.d.	Design, construct, and test an object such as a toy or game whose function depends on attractive or repulsive magnetic forces.
		ME3.2.e.	Describe the operation of a toy or game whose function depends on magnetic forces using terms such as attract, repel, push, and pull.
Magnets	3	ME3.2.	Assess effects of practical applications of magnetic and static electric forces on individuals and society. [CP, TPS]
		ME3.2.a.	Investigate how magnets are used at home and school, and in business and industrial applications .
		ME3.2.b.	Classify magnets that are used at home and school, and in business and industrial applications as natural, temporary, and permanent.
		ME3.2.c.	Explore how magnetic compasses can provide evidence for and information about magnetic fields, including those created by current traveling through a conductor, and the Earth's magnetic field.
		ME3.2.d.	Design, construct, and test an object such as a toy or game whose function depends on attractive or repulsive magnetic forces.
		ME3.2.e.	Describe the operation of a toy or game whose function depends on magnetic forces using terms such as attract, repel, push, and pull.
		ME3.2.f.	Explain safety procedures to be followed when interacting with magnetic and static electric forces.
		ME3.2.g.	Describe the effects of static electric forces in daily life .
		ME3.2.h.	Explain the purpose of technologies which are designed to minimize static electric forces .
		ME3.2.i.	Investigate methods of using magnetic and static electric forces to create artistic expressions .
		ME3.2.j.	Generate new questions from what has been learned about applications of magnetic and static electric forces.
Classifying Plants	3	PL3.1.	Investigate the growth and development of plants, including the conditions necessary for germination. [CP, SI]
		PL3.1.d.	Sort and classify plants and/or seeds according to one or more student-selected attributes.
		PL3.2.	Analyze the interdependence among plants, individuals, society, and the environment. [CP, DM, SI]



		PL3.2.a.	Observe, safely and respectfully, plants in local environments .
		PL3.2.b.	Research traditional and contemporary uses of plants or parts of plants, such as food, beverages, medicine, arts, seed banks, shade, wind breaks, erosion protection, cultural celebrations, and products like dyes, shelter, and clothing.
		PL3.2.c.	Examine the significance to some First Nations and Métis people of offering tobacco during harvesting and how that purpose differs from using the tobacco plant for smoking.
Reproduction in Plants	3	PL3.1.	Investigate the growth and development of plants, including the conditions necessary for germination. [CP, SI]
		PL3.1.e.	Observe and represent, using written language, pictures, and charts, changes that occur through the life cycle of a flowering plant.
		PL3.1.i.	Care for a flowering plant throughout its life cycle, tracking its growth and changes.
		PL3.1.j.	Estimate, record, and display relevant measurements of plant growth, using rulers, tables, and bar graphs.
		PL3.1.k.	Suggest explanations for patterns and discrepancies in the growth rate of similar plants grown in varying conditions.
		PL3.1.m.	Identify characteristics that remain constant and those that change throughout the life cycle of a flowering plant.
		PL3.1.n.	Pose new questions about conditions necessary for plant growth, based on what was learned.
Plant Trait Inheritance and Variation	3	PL3.2.	Analyze the interdependence among plants, individuals, society, and the environment. [CP, DM, SI]
		PL3.2.e.	Describe examples of plant biodiversity in various ecosystems throughout the world.
What Plants Need	3	PL3.1.	Investigate the growth and development of plants, including the conditions necessary for germination. [CP, SI]
		PL3.1.a.	Pose questions related to plant growth .
		PL3.1.f.	Compare the basic needs of plants to the basic needs of animals and humans.
		PL3.1.g.	Research ways in which plants rely on animals and abiotic factors to support plant reproduction by dispersing seeds.



		PL3.1.h.	Predict and investigate conditions such as the temperature, available sunlight, available nutrients in soil, and available water, which are necessary for plant germination and growth.
		PL3.1.I.	Explain the importance of water and light for plant growth and the mechanisms by which plants obtain water and light from the environment.
Effects of Wind and Water	3	ES3.2.	Analyze the interdependence between soil and living things, including the importance of soil for individuals, society, and all components of the environment. [CP, DM]
		ES3.2.f.	Collaboratively design and safely carry out procedures to determine the effects of moving water on different types of soils.
		ES3.2.g.	Propose practices that individuals and communities can take to reduce the effects of erosion on a small scale .
		ES3.2.h.	Suggest sustainable practices that can affect soils positively and reduce or prevent harmful effects such as compaction and contamination of soils.
Energy and Electric Currents	3	ME3.1.	Investigate the characteristics of contact forces. [SI]
		ME3.1.a.	Pose questions related to the characteristics of magnetic and static electric forces .
		ME3.1.b.	Demonstrate how contact and non-contact forces are able to cause objects to start moving, speed up, slow down, and stop; cause moving objects to change direction; and cause changes to the shape of objects.
		ME3.1.c.	Compare the characteristics of contact, magnetic, and static electric forces, including the range over which they act, and propose methods of increasing or decreasing the effects of these forces.
		ME3.1.d.	Group materials according to criteria such as their attraction to magnets and ability to be magnetized based on personal observation.
		ME3.1.e.	Compare the characteristics and effects of different types and shapes of magnets , and the shape of the magnetic field produced by the magnet.
		ME3.1.f.	Predict and test the number of objects a magnet can pick up under different conditions and develop simple conclusions about conditions that affect strength of magnetic forces.
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		ME3.1.h.	Demonstrate ways to use materials found in their environment to investigate conditions which affect the strength of static electric forces.	
		ME3.1.i.	Make and record relevant observations during investigations to identify conditions that affect the strength of static electric forces, and develop simple conclusions about these conditions.	
Energy and Collision	3	ME3.1.	Investigate the characteristics of contact forces. [SI]	
		ME3.1.a.	Pose questions related to the characteristics of magnetic and static electric forces .	
		ME3.1.b.	Demonstrate how contact and non-contact forces are able to cause objects to start moving, speed up, slow down, and stop; cause moving objects to change direction; and cause changes to the shape of objects.	
		ME3.1.c.	Compare the characteristics of contact, magnetic, and static electric forces, including the range over which they act, and propose methods of increasing or decreasing the effects of these forces.	
		ME3.1.d.	Group materials according to criteria such as their attraction to magnets and ability to be magnetized based on personal observation.	
		ME3.1.e.	Compare the characteristics and effects of different types and shapes of magnets , and the shape of the magnetic field produced by the magnet.	
		ME3.1.f.	Predict and test the number of objects a magnet can pick up under different conditions and develop simple conclusions about conditions that affect strength of magnetic forces.	
		ME3.1.g.	Investigate how charged materials interact with each other and with uncharged objects.	
		ME3.1.h.	Demonstrate ways to use materials found in their environment to investigate conditions which affect the strength of static electric forces.	
		ME3.1.i.	Make and record relevant observations during investigations to identify conditions that affect the strength of static electric forces, and develop simple conclusions about these conditions.	
Plants' Effect on Regions	3	PL3.2.	Analyze the interdependence among plants, individuals, society, and the environment. [CP, DM, SI]	
			PL3.2.f.	Explain how to determine whether plants are healthy and discuss the impacts of diseased plants on society and the environment.
		PL3.2.h.	Assess the impact of natural on the biodiversity of plant species.	



		PL3.2.n.	Research lifestyles that depend on understanding and working with plants and plant-related products.	
Matter and Energy in Plants	3	PL3.2.	Analyze the interdependence among plants, individuals, society, and the environment. [CP, DM, SI]	
		PL3.2.i.	Examine the type and quantity of plants and plant matter in the diets of people who live in various communities and/or represent various cultures.	
		PL3.2.j.	Explain how and why plants are replenished naturally .	
		PL3.2.k.	Defend a position related to plant use .	
		PL3.2.m.	Respond to and acknowledge the ideas of others regarding the importance of plants to self and society.	
Animal and Plant Dependence	3	PL3.2.	Analyze the interdependence among plants, individuals, society, and the environment. [CP, DM, SI]	
		PL3.2.g.	Describe ways that plants and animals depend on each other.	
		PL3.2.I.	Imagine a world without plants and describe the impact on animals, people, and the environment.	
Transfer of Energy in Collision	3	ME3.1.	Investigate the characteristics of contact forces. [SI]	
		ME3.1.a.	Pose questions related to the characteristics of magnetic and static electric forces .	
		ME3.1.b.	Demonstrate how contact and non-contact forces are able to cause objects to start moving, speed up, slow down, and stop; cause moving objects to change direction; and cause changes to the shape of objects.	
		ME3.1.c.	Compare the characteristics of contact, magnetic, and static electric forces, including the range over which they act, and propose methods of increasing or decreasing the effects of these forces.	
			ME3.1.d.	Group materials according to criteria such as their attraction to magnets and ability to be magnetized based on personal observation.
		ME3.1.e.	Compare the characteristics and effects of different types and shapes of magnets , and the shape of the magnetic field produced by the magnet.	
		ME3.1.f.	Predict and test the number of objects a magnet can pick up under different conditions and develop simple conclusions about conditions that affect strength of magnetic forces.	



	ME3.1.g.	Investigate how charged materials interact with each other and with uncharged objects.
	ME3.1.h.	Demonstrate ways to use materials found in their environment to investigate conditions which affect the strength of static electric forces.
	ME3.1.i.	Make and record relevant observations during investigations to identify conditions that affect the strength of static electric forces, and develop simple conclusions about these conditions.



Scope Name	Grade	Standard	Description
Environmental Changes and Effects	4	HC4.3.	Assess the effects of natural and human activities on habitats and communities, and propose actions to maintain or restore habitats. [CP, DM]
		HC4.3.d.	Assess intended and unintended consequences of natural and human-caused changes to specific habitats.
Sound	4	SO4.1.	Explore natural and artificial sources of sound in the environment and how those sounds are detected by humans and animals. [CP, SI]
		SO4.1.a.	Identify and classify, using student-developed criteria, examples of natural and artificial sounds in their environments .
		SO4.1.b.	Relate natural and artificial sources of sounds in their environment to the ways in which those sounds are produced.
		SO4.1.c.	Describe examples of sounds that people use to meet their everyday needs.
		SO4.1.d.	Explain how humans and other animals use sounds for various purposes such as enjoyment, warning, navigation, annoyance, ambience, and communication.
		SO4.1.e.	Examine connections between music of various cultures, including First Nations and Métis, and natural sounds .
		SO4.1.f.	Differentiate among the types of sounds produced by various stringed, woodwind, brass, and percussion instruments.
		SO4.1.g.	Illustrate and explain how humans create and detect sounds.
		SO4.1.h.	Compare the characteristics of human and animal perceptions of sound, including their sense organs to detect sound and their range of hearing.
		SO4.1.i.	Propose structural modifications that might improve the hearing of a specific animal.
		SO4.1.j.	Predict and explore how sound travels from different sources to the human ear.
			SO4.2.
		SO4.2.a.	Pose questions about the characteristics of sound .
		SO4.2.b.	Recognize and demonstrate that sound energy originates from vibrating objects .



SO4.2.c.	Compare how sound vibrations travel differently through solids, liquids, and gases such as air.
SO4.2.d.	Differentiate between the loudness of various sounds, as measured in decibels.
SO4.2.e.	Compare the ability of different materials to absorb and reflect sounds of varying pitch and loudness.
SO4.2.f.	Compare the ability of self and others to hear sounds of various pitch and loudness.
SO4.2.g.	Compare the characteristics of string, woodwind, brass, and percussion instruments to determine how they make sound.
SO4.2.h.	Rephrase questions about pitch and loudness into a testable form.
SO4.2.i.	State and test a prediction about how the pitch and loudness of a sound can be altered.
SO4.2.j.	Design and construct a device such as a musical instrument which has the ability to create sounds of variable pitch and/or loudness.
SO4.2.k.	Suggest improvements to enhance the effectiveness of a device such as a musical instrument which has the ability to create sounds of variable pitch and/or loudness.
SO4.2.I.	State generalizations about the physical characteristics of sound, including pitch and loudness, learned through observation.
SO4.3.	Assess personal, societal, and environmental impacts of sound-related technologies. [DM, TPS]
SO4.3.a.	Explain the purpose and effect of devices that enhance the human ability to produce, transmit, and detect sound.
SO4.3.b.	Explore the use of sound in movies, television, dance, and drama.
SO4.3.c.	Investigate the type and loudness of sounds heard in various locations in their environment .
SO4.3.d.	Explore the personal and social impacts on humans who are deaf or hard of hearing, including connections to speech and the role of sign language.
SO4.3.e.	Explain how and why different materials are used in schools and other buildings based on their ability to absorb and/or reflect sounds.
SO4.3.f.	Demonstrate methods and technologies used to prevent noise pollution in their surroundings, and work with group members to evaluate the effectiveness of those methods.



		SO4.3.g.	Explore the importance and uses of sound in different cultures, past and present.
		SO4.3.h.	Identify positive and negative consequences, for humans and other animals, of technologies that produce sounds.
		SO4.3.i.	Identify issues related to sound such as long-term exposure to environmental noise, portable music players, and workplace sounds, and discuss the implications of these issues on individuals, society, and the environment.
		SO4.3.j.	Explain practices that help meet the need for protection from loud and sustained sounds to prevent short- and long-term hearing loss in humans.
		SO4.3.k.	Research the contributions of Canadians who contributed to the development of sound-based technologies.
Materials and Sustainability	4	RM4.2.	Assess how human uses of rocks and minerals impact self, society, and the environment. [DM]
		RM4.2.b.	Identify objects in their local environment that are made from rocks and minerals .
		RM4.2.c.	Research historical uses for rocks and minerals in Saskatchewan.
		RM4.2.d.	Suggest alternative materials that could be used to create everyday objects or propose new uses for rocks and minerals.
		RM4.2.e.	Relate uses for rocks and minerals to characteristics such as functionality, mineral shape, cost, availability, and aesthetics.
		RM4.2.f.	Identify locations where minerals, including potash, sodium sulphate, salt, kaolin, uranium, copper, coal, diamond, and gold, are extracted in Saskatchewan.
		RM4.2.g.	Discuss the economic benefits associated with mineral extraction and refining, including related careers, in Saskatchewan.
		RM4.2.h.	Analyze issues related to the extraction and use of minerals from the perspectives of various stakeholders .
		RM4.2.i.	Research ways in which products made from rocks or minerals can be recycled and reused.
		RM4.2.j.	Suggest methods of reclaiming resource extraction sites to reduce short- and long-term impacts on communities and the environment.
		RM4.2.k.	Assess their own and their family's impact on natural resources based on their current lifestyle.


Classifying Rocks	4	RM4.1.	Investigate physical properties of rocks and minerals, including those found in the local environment. [CP, SI]
		RM4.1.a.	Pose questions about the properties of rocks and minerals .
		RM4.1.b.	Document the locations and characteristics of rocks that exist in their local environment.
		RM4.1.d.	Use appropriate tools safely while making observations and collecting information on the physical properties of rocks and minerals.
		RM4.1.e.	Demonstrate respect for all components of their environment when observing and collecting rocks and minerals .
		RM4.1.g.	Record observations of rocks and minerals using jot notes, labelled diagrams, and charts.
		RM4.1.h.	Compare the physical properties of rocks and minerals from the local environment with those from other geological areas.
		RM4.1.i.	Develop a classification scheme to organize their understanding of rocks and minerals.
		RM4.1.j.	Account for any variation between their classification schemes of rocks and minerals and those of classmates, Elders, traditional knowledge keepers, geologists, or other resources.
		RM4.1.k.	Differentiate between rocks and minerals.
		RM4.1.I.	Develop simple generalizations about the physical characteristics of rocks and minerals based on observation and research.
		RM4.2.a.	Discuss ways in which people of different cultures value, respect, and use rocks and minerals, including First Nations and Métis connections to Mother Earth.
		RM4.3.c.	Explain how rocks can be classified as igneous, sedimentary, or metamorphic based on the processes by which they form.
Minerals	4	RM4.1.	Investigate physical properties of rocks and minerals, including those found in the local environment. [CP, SI]
		RM4.1.a.	Pose questions about the properties of rocks and minerals .
		RM4.1.c.	Observe and record physical properties of rocks and minerals using appropriate terminology such as colour, lustre, hardness, cleavage, transparency, and crystal structure.



		RM4.1.d.	Use appropriate tools safely while making observations and collecting information on the physical properties of rocks and minerals.
		RM4.1.e.	Demonstrate respect for all components of their environment when observing and collecting rocks and minerals .
		RM4.1.f.	Demonstrate processes for testing the hardness of minerals, including reference to guides such as Moh's scale of mineral hardness.
		RM4.1.h.	Compare the physical properties of rocks and minerals from the local environment with those from other geological areas.
		RM4.1.k.	Differentiate between rocks and minerals.
		RM4.1.I.	Develop simple generalizations about the physical characteristics of rocks and minerals based on observation and research.
Changes to Rocks and Soils	4	RM4.3.n.	Pose new questions about Saskatchewan landforms based on what was learned.
Soil Composition	4	RM4.3.i.	Suggest explanations of how soils form from rocks, including the roles of wind, water, and biological processes over time.
		RM4.3.j.	Create models of different types of plant and animal fossils.
		RM4.3.I.	Predict the types of plant or animal fossils that would be found in Saskatchewan landforms in the past, present, and future.
Quick Changes to Land	4	RM4.3.	Analyze how weathering, erosion, and fossils provide evidence to support human understanding of the formation of landforms on Earth. [CP, SI, TPS]
		RM4.3.b.	Examine the effects of natural phenomena that cause rapid and significant changes to the landscape.
Slow Changes to Land	4	RM4.3.	Analyze how weathering, erosion, and fossils provide evidence to support human understanding of the formation of landforms on Earth. [CP, SI, TPS]
		RM4.3.d.	Discuss practices and techniques for minimizing and controlling erosion locally and in communities around the world.
		RM4.3.e.	Design and construct a prototype of a system for minimizing and controlling gravitational, water, shoreline, ice, or wind erosion in a given situation.
		RM4.3.g.	Describe possible short- and long-term effects of wind, water, and ice on local, national, and global landscapes .



		RM4.3.f.	Evaluate both a prototype of a personally constructed system for minimizing and controlling erosion and the use of prototypes in science for modelling natural phenomena.
		RM4.3.h.	Predict the effects of weathering on various landforms in Saskatchewan.
Environmental Traits	4	HC4.2.	Analyze the structures and behaviours of plants and animals that enable them to exist in various habitats. [SI]
		HC4.2.c.	Identify factors that influence the ability of plants and animals to meet their needs within a specific habitat.
Plant and Animal Extinction	4	HC4.3.	Assess the effects of natural and human activities on habitats and communities, and propose actions to maintain or restore habitats. [CP, DM]
		HC4.3.c.	Categorize human activities by the effects they have or may have on habitats and communities.
		HC4.3.e.	Relate habitat loss to the endangerment and extinction of plants and animals within habitats and communities in Saskatchewan and elsewhere.
		HC4.3.f.	Explore how human impact on habitats and communities has been represented through traditional and contemporary music, dance, drama, and visual arts.
Survival of the A Fittest	4	HC4.2.	Analyze the structures and behaviours of plants and animals that enable them to exist in various habitats. [Sl]
		HC4.2.h.	Compare the structural features of plants that enable them to thrive in different kinds of habitats .
Adaptations	4	HC4.2.	Analyze the structures and behaviours of plants and animals that enable them to exist in various habitats. [SI]
		HC4.2.b.	Recognize that each plant and animal depends on a specific habitat to meet its needs.
		HC4.2.d.	Develop and carry out a plan to investigate safely and respectfully the structures and behaviours of plants and animals within natural habitats.
		HC4.2.e.	Record observations and information about plant and animal structures and behaviours within natural and constructed habitats using words, diagrams, graphs, photographs, audio and video recordings, and other appropriate technologies.
		HC4.2.f.	Compile and display data collected during a habitat study using tallies, tables, pictographs, and/or bar graphs; compare results obtained with those of other class members; and propose explanations for differences in results.



	HC4.2.g.	Use gathered information to explain how the structures and behaviours of animals and plants enable them to meet their basic needs in their habitat.							
		HC4.2.i.	Design and carry out a simulation to explore how the appearance of a plant or animal affects its visibility.						
		HC4.2.j.	Predict the structural and behavioural adaptations required for a real or imagined animal to live in a particular habitat, either real or imagined.						
		HC4.3.a.	Recognize and discuss the role of traditional knowledge in learning about, valuing, and caring for plants and animals within local habitats and communities.						
Light Reflection	4	LI4.1.	Investigate the characteristics and physical properties of natural and artificial sources of light in the environment. [CP, SI]						
		LI4.1.a.	Differentiate between natural sources of light in the environment.						
		LI4.1.b.	Examine relationships between the light energy and heat energy emitted from light sources.						
		LI4.1.c.	Examine the significance of light in First Nations and Métis stories, legends, and spirituality, including the role of fire, lightning, aurorae, and Thunderbird.						
		LI4.1.d.	Investigate the characteristics of light beams in air and water, including determining that light travels in straight lines, that light travels away from a source in all directions, and that light beams may change direction upon entering or leaving water.						
		LI4.1.e.	Distinguish, through observation, between objects that emit their own light .						
		LI4.1.f.	Identify positive consequences of exposure to natural and artificial sources of light.						
								LI4.1.g.	Predict changes in a shadow's location, shape, and relative size when an object is placed in different positions and orientations relative to a light source and surface.
		LI4.1.h.	Collaboratively plan and carry out a procedure to determine changes in a shadow's location, shape, and relative size when an object is placed in different positions and orientations relative to a light source and screen.						
		LI4.1.i.	Record and communicate results of investigations of the characteristics and physical properties of light using formats suitable to the task.						



	LI4.2.	Analyze how light interacts with different objects and materials to create phenomena such as shadows, reflection, refraction, and dispersion. [SI]
	LI4.2.a.	Pose questions about the interaction of light with different materials .
	LI4.2.b.	Investigate how light interacts with various objects to determine whether the objects cast shadows, allow light to pass, and/or reflect light.
	LI4.2.c.	Classify materials and objects as opaque, transparent, or translucent based on personal observations.
	LI4.2.d.	Design and carry out a fair test of the reflective properties of surfaces of different shapes and textures .
	LI4.2.e.	Develop simple conclusions about the reflective properties of surfaces of different shapes and textures based on observation and experimentation.
	LI4.2.f.	Demonstrate and describe how transparent media of different composition and shape are used to change the direction of light.
	LI4.2.g.	Investigate how light interacts with optical devices such as kaleidoscopes, reading glasses, microscopes, periscopes, telescopes, and magnifying glasses.
	LI4.2.h.	Demonstrate the dispersion of white light into various colours using a prism, and draw simple conclusions about the composition of white light.
	L14.2.i.	Identify characteristics and effects of radiation that are slightly below the frequencies of visible light.
	L14.2.j.	Experiment with mixing colours of light to create colours that meet a student-specified function .
	LI4.3.	Assess personal, societal, and environmental impacts of light-related technological innovations including optical devices. [DM, TPS]
	LI4.3.a.	Evaluate the suitability of different types of light sources based on criteria such as source of energy, area illuminated, cost, and intended use.
	LI4.3.b.	Assess positive and negative consequences of artificial sources of light that have been designed to solve problems in the home, at school, and in the community.
	LI4.3.c.	Assess the suitability of translucent, transparent, and opaque materials for specific applications .



		LI4.3.d.	Compare the types of light sources used historically and currently in Saskatchewan homes and communities.
		LI4.3.e.	Compare the functions of optical devices that are designed to extend our ability to observe.
		LI4.3.f.	Evaluate the function and importance of eyeglasses and contact lenses for individuals with vision problems.
		LI4.3.g.	Research personal, societal, and environmental impacts of light- related technological innovations .
		LI4.3.h.	Design, construct, and test a prototype of an optical device that performs a specific student-identified function.
		LI4.3.i.	Work with classmates to troubleshoot problems with a prototype of an optical device.
		LI4.3.j.	Describe practices that individuals and communities can take to help protect eyes and sight.
		LI4.3.k.	Assess methods of conserving energy through processes such as reducing the use of home lighting or using alternative types of light sources .
		LI4.3.I.	Examine how light is depicted in a variety of texts and through dance and drama.
		LI4.3.m.	Identify careers in Saskatchewan that require an understanding of light and light-related technologies .
Plant and Animal Parts	4	HC4.2.	Analyze the structures and behaviours of plants and animals that enable them to exist in various habitats. [Sl]
		HC4.2.a.	Generate questions to investigate about the structures .
Rock Patterns 4	4	RM4.3.	Analyze how weathering, erosion, and fossils provide evidence to support human understanding of the formation of landforms on Earth. [CP, SI, TPS]
		RM4.3.k.	Discuss how fossils and the fossil record provide evidence of Earth's history, including the formation of various landforms.
		RM4.3.m.	Explain how scientists develop explanations of natural phenomena based on observations and data.
Natural Processes	4	RM4.3.	Analyze how weathering, erosion, and fossils provide evidence to support human understanding of the formation of landforms on Earth. [CP, SI, TPS]



		RM4.3.d.	Discuss practices and techniques for minimizing and controlling erosion locally and in communities around the world.
		RM4.3.e.	Design and construct a prototype of a system for minimizing and controlling gravitational, water, shoreline, ice, or wind erosion in a given situation.
		RM4.3.g.	Describe possible short- and long-term effects of wind, water, and ice on local, national, and global landscapes .
		RM4.3.h.	Predict the effects of weathering on various landforms in Saskatchewan.
		RM4.3.f.	Evaluate both a prototype of a personally constructed system for minimizing and controlling erosion and the use of prototypes in science for modelling natural phenomena.
		RM4.3.a.	Construct a visual representation of the diversity of landscapes and landforms throughout Saskatchewan, including those that have significance for First Nations and Métis people.
Food Chains and Food Webs	4	HC4.1.	Investigate the interdependence of plants and animals, including humans, within habitats and communities. [CP, SI]
		HC4.1.f.	Classify plants and animals, including humans, according to their role in food chains and food webs.
		HC4.1.g.	Construct a visual representation of a specific food chain that exists within a habitat or community.
		HC4.1.h.	Analyze food webs as representations of multiple food chains.
Ecosystems	4	HC4.1.	Investigate the interdependence of plants and animals, including humans, within habitats and communities. [CP, SI]
		HC4.1.a.	Identify the plants and animals which can be found in the communities in which students live.
		HC4.1.b.	Differentiate between populations, communities, and habitats using local and regional examples.
		HC4.1.c.	Predict and research the populations of plants and animals that exist in various habitats .
		HC4.1.d.	Discuss stories that demonstrate the interdependence of land, water, animals, plants, and the sky in traditional worldviews.
		HC4.1.e.	Draw upon facets of Indigenous worldviews, such as the Medicine Wheel or circle of life, to examine understanding about the interdependence of plants and animals in various habitats and communities.



	HC4.1.i.	Describe how both traditional methods and modern technologies enable humans to increase their knowledge of plants and animals within habitats and communities.	
		HC4.1.j.	Conduct a simulation or role play to demonstrate the interdependence of plants and animals in a habitat or community.
		HC4.1.k.	Predict how the removal of a specific plant or animal population may affect a community in the short- and long-term.
		HC4.1.l.	Observe and maintain a habitat such as a terrarium, aquarium, mealworm box, ant farm, pond in a bottle, or vermiculture to examine interactions between plants and animals, and their environments.
		HC4.1.m.	Show concern and respect for the safety of self, others, plants and animals when maintaining a habitat.
Reducing Human Footprint	4	HC4.3.	Assess the effects of natural and human activities on habitats and communities, and propose actions to maintain or restore habitats. [CP, DM]
		HC4.3.b.	Identify stakeholders who are likely to adopt different points of view on issues that are highlighted in the media related to habitat protection, restoration, and management.
		HC4.3.c.	Categorize human activities by the effects they have or may have on habitats and communities.
		HC4.3.f.	Explore how human impact on habitats and communities has been represented through traditional and contemporary music, dance, drama, and visual arts.
		HC4.3.g.	Investigate how both scientists' and traditional knowledge keepers' knowledge of plant growth and development has led to the development of agricultural methods and techniques that affect habitats and communities.
		HC4.3.h.	Create dramatic, visual, musical, or other representations to show how personal actions can help conserve, honour, and respect natural and constructed habitats.
		HC4.3.i.	Collaboratively develop and carry out a plan to preserve or restore one or more components of a local habitat.
		HC4.3.j.	Identify local, provincial, and national organizations that work to preserve, restore, and provide education about habitats and communities.



Scope Name	Grade	Standard	Description											
Systems of the Human Body	5	HB5.1.	Analyze personal and societal requirements for, and the impact of, maintaining a healthy human body. [CP, DM]											
		HB5.1.c.	Analyze the role of the skin in maintaining a healthy body.											
		HB5.1.d.	Research how the body's defences, such as tears, saliva, skin, certain blood cells, and stomach secretions, work to fight against infections.											
		HB5.2.	Investigate the structure, function, and major organs of one or more human body systems such as the digestive, excretory, respiratory, circulatory, nervous, muscular, and skeletal systems. [SI, TPS]											
		HB5.2.a.	Explain at least two functions of the human digestive, excretory, respiratory, circulatory, nervous, muscular, or skeletal systems.											
		HB5.2.b.	Create a written and/or visual representation of the location of the major organs of at least two human body systems within the entire body.											
		HB5.2.c.	Model the structure and/or function of one or more organs from the human digestive, excretory, respiratory, circulatory, nervous, muscular, or skeletal system.											
		HB5.2.d.	Assess, in collaboration with other students, a model of an organ from a human body system to refine the model.											
		HB5.2.e.	Critique models in science, such as models of human organs, as representations of natural phenomena, objects, and/or physical processes.											
		HB5.2.f.	Suggest the processes that scientists might follow to investigate questions related to the structure and/or function of human body systems .											
													HB5.2.g.	Rephrase, into a testable form, questions about the structure and/ or function of one or more body systems.
		HB5.2.h.	Design and carry out procedures, including identifying and controlling variables, to investigate the structure and/or function of one or more body systems.											
		HB5.2.i.	Compile and display data from investigations related to the structure and/or function of human body systems using appropriate formats such as frequency tallies, tables, and bar graphs.											



	HB5.2.j.	Suggest explanations for patterns and discrepancies in data collected during investigations related to the structure and/or function of human body systems.	
		HB5.2.k.	Imagine how a human body might function or look if it did not have one or more of the major body systems.
		HB5.3.	Assess how multiple human body systems function together to enable people to move, grow, and react to stimuli. [SI]
		НВ5.3.а.	Pose questions to investigate or suggest practical problems to solve in relation to human body systems .
		HB5.3.b.	Relate body changes, such as acne on the skin and growth of body hair, to human growth and development from birth to puberty.
		HB5.3.c.	Represent, physically, dramatically, or visually, the interactions among the skeletal, muscular, and nervous systems that produce movement of the body or parts of the body.
		HB5.3.d.	Research how the respiratory, digestive, and circulatory systems work together to move oxygen and nutrients throughout the human body.
		HB5.3.e.	Investigate the interdependence between the nervous system and other body systems for reacting to stimuli and controlling body functions.
		HB5.3.f.	Explain how the digestive and excretory systems work together to ensure that the body makes use of food that is eaten and disposes of waste.
		HB5.3.g.	Propose alterations to the human body that might enable humans to function more effectively to accomplish one or more typical daily tasks.
		HB5.1.e.	Describe the function of technologies that have been developed to support personal health.
Novel Materials	5	МС5.3.	Assess how the production, use, and disposal of raw materials and manufactured products affects self, society, and the environment. [DM, SI]
		MC5.3.a.	Differentiate between raw materials and manufactured products.
		MC5.3.b.	Assess the benefits and drawbacks of manufactured materials that have been developed to improve human living conditions.
		MC5.3.c.	Research a product to determine the raw materials from which it is made and the process required to turn the raw materials into a manufactured product.



		MC5.3.d.	Conduct a fair test to determine the effectiveness of different types or brands of a material .	
		MC5.3.e.	Develop and apply criteria for evaluating the effectiveness of a consumer product.	
		MC5.3.f.	Identify locations in their communities and in Saskatchewan where agricultural and industrial manufacturing occurs, what products are created and tested, which raw materials are used, and how by- products and waste are disposed.	
		MC5.3.g.	Assess the societal and environmental impacts of industrial and agricultural processes that change raw materials into manufactured products, taking into account different perspectives such as consumer, manufacturer, salesperson, and community leader.	
		MC5.3.h.	Identify potentially harmful products used at home, school, and in communities, including interpreting consumer chemical hazard symbols, and describe practices that individuals can follow to ensure personal and community safety.	
		MC5.3.i.	Research cultural values related to the consumption of products, such as using all parts of an animal.	
		MC5.3.j.	Investigate how natural and manufactured products are disposed of personally, in their communities, and in Saskatchewan.	
		MC5.3.k.	Recognize the need for developing a sense of responsibility towards other people, other living things, and the environment when choosing how to use and dispose of manufactured products.	
Human Health and Hygiene	5	HB5.1.	Analyze personal and societal requirements for, and the impact of, maintaining a healthy human body. [CP, DM]	
		HB5.1.a.	Examine methods and perspectives of various cultures, including First Nations and Métis, which have contributed to knowledge about maintaining a healthy body.	
		HB5.1.b.	Identify local knowledge, including the effects of traditional lifestyles, that contributes to human understanding of maintaining a healthy body.	
			HB5.1.f.	Relate the effects of common diseases to the organs or body systems they affect or are related to .
		HB5.1.g.	Predict how the failure or removal of a specific organ in the human body system would affect an individual's health.	



	HB5.1.h.	Compare personal diets and those of people who live in different communities and countries worldwide to Canada's Food Guide and Canada's Food Guide – First Nations, Métis, and Inuit.	
		HB5.1.i.	Assess the benefits of lifestyle choices that contribute to maintaining a healthy body.
		HB5.1.j.	Propose actions that individuals can take to minimize the harmful effects and maximize the beneficial effects of natural- and human- caused environmental factors on human health.
		HB5.1.k.	Research the roles of different individuals and organizations within their communities that help support personal and community health.
The Sun and Water Cycle	5	WE5.2.	Investigate local, national, and global weather conditions, including the role of air movement and solar energy transfer. [SI]
		WE5.3.d.	Research effects of short- and long-term changes in weather on the lives and livelihoods of people locally, nationally, and globally.
		WE5.2.e.	Record and share, using tables, charts, diagrams, and graphs, the results of experimentation into the effects of solar energy on different surfaces.
		WE5.2.d.	Design and safely carry out an experiment to determine the effects of solar energy on different surfaces .
Weather	5	WE5.1.	Measure and represent local weather, including temperature, wind speed and direction, amount of sunlight, precipitation, relative humidity, and cloud cover. [CP, SI, TPS]
		WE5.1.a.	Pose questions about local weather conditions and methods of collecting weather data.
		WE5.1.b.	Compare strengths and limitations of methods and technologies used historically and currently by different people around the world to obtain information about the weather.
		WE5.1.c.	Classify clouds as stratus, cumulus, cirrus, or "other", compare results with others, and analyze why results may vary.
		WE5.1.d.	Use a technological problem-solving process to design and construct simple weather instruments .
		WE5.1.e.	Explain the function and purpose of simple weather instruments.
		WE5.1.k.	Generate simple conclusions about the prevailing local weather conditions.
		WE5.1.I.	Pose new questions about local weather conditions based on what was learned.



Weather in Specific5Environments	5 WE5.2.	Investigate local, national, and global weather conditions, including the role of air movement and solar energy transfer. [SI]	
		WE5.2.g.	Relate the transfer of energy from the sun to the heating of Earth's surface by providing examples of surfaces that heat at different rates and locations that have different temperatures.
Classifying Matter	5	MC5.1.	Investigate the characteristics and physical properties of materials in solid, liquid, and gaseous states of matter. [CP, SI]
		MC5.1.e.	Pose questions related to the characteristics and physical properties of matter that are suitable for investigating using processes of science.
		MC5.1.f.	Observe and record characteristics and physical properties of different solids, liquids, and gases in their environment.
		MC5.1.g.	Determine the distinguishing characteristics which enable scientists to differentiate between solids, liquids, and gases.
		MC5.1.h.	Measure the temperature, volume, and mass of materials using appropriate instruments .
		MC5.1.i.	Explain how some characteristics and physical properties, such as melting point, boiling point, buoyancy, and solubility, help to distinguish materials from one another.
		MC5.1.j.	Critique personal and scientific classification systems of matter by identifying substances that are not easily classified as solids, liquids, or gases .
Matter is Everywhere	5	MC5.1.	Investigate the characteristics and physical properties of materials in solid, liquid, and gaseous states of matter. [CP, SI]
		MC5.1.a.	Recognize that matter is anything that has mass and takes up space.
		MC5.1.b.	Classify materials in their environment as solids, liquids, or gases based on personal observation.
Matter Changing States	5	MC5.1.	Investigate the characteristics and physical properties of materials in solid, liquid, and gaseous states of matter. [CP, SI]
		MC5.1.a.	Recognize that matter is anything that has mass and takes up space.
		MC5.1.b.	Classify materials in their environment as solids, liquids, or gases based on personal observation.
		MC5.1.c.	Discuss the importance of water, in all states of matter, as a sacred substance within First Nations and Métis cultures.



	MC5.1.d.	Carry out a procedure to compare the mass of an object with the mass of its components.
	MC5.2.	Investigate how reversible and non-reversible changes, including changes of state, alter materials. [SI]
	MC5.2.a.	Pose and refine questions for investigation related to changes in materials.
	MC5.2.b.	Demonstrate changes that can be made to an object without changing the properties of the material making up the object.
	MC5.2.c.	Explore how characteristics and physical properties of materials may change when they interact with one another.
	MC5.2.d.	Predict whether changes to a material will be reversible or non- reversible.
	MC5.2.e.	Observe and classify changes to materials as reversible .
	MC5.2.f.	Differentiate between changes to materials that occur rapidly .
	MC5.2.g.	Provide evidence of the six changes of state .
	MC5.2.h.	Demonstrate that changes of state of matter are reversible when heat is applied or removed.
	MC5.2.i.	Compare the characteristics and physical properties of a material in its solid and liquid states .
	MC5.2.j.	Design and carry out a procedure to determine whether the mass of materials changes during reversible and non-reversible changes.
	MC5.2.k.	Follow established safety procedures for working with heating appliances and hot materials .
	MC5.2.I.	Discuss the characteristics of fair tests and why scientists value the importance of conducting fair tests for gaining knowledge about the physical properties of materials.
	MC5.2.m.	Investigate methods, such as firing clay and forming alloys that artists use to change materials based on their understanding of the properties of materials.
	MC5.2.n.	Develop conclusions about the effects of reversible and non- reversible changes on the characteristics and physical properties of materials.



Human Footprint	5	MC5.3.	Assess how the production, use, and disposal of raw materials and manufactured products affects self, society, and the environment. [DM, SI]		
		MC5.3.a.	Differentiate between raw materials and manufactured products.		
		MC5.3.b.	Assess the benefits and drawbacks of manufactured materials that have been developed to improve human living conditions.		
		MC5.3.c.	Research a product to determine the raw materials from which it is made and the process required to turn the raw materials into a manufactured product.		
		MC5.3.d.	Conduct a fair test to determine the effectiveness of different types or brands of a material .		
		MC5.3.e.	Develop and apply criteria for evaluating the effectiveness of a consumer product.		
		MC5.3.f.	Identify locations in their communities and in Saskatchewan where agricultural and industrial manufacturing occurs, what products are created and tested, which raw materials are used, and how by- products and waste are disposed.		
		MC5.3.g.	Assess the societal and environmental impacts of industrial and agricultural processes that change raw materials into manufactured products, taking into account different perspectives such as consumer, manufacturer, salesperson, and community leader.		
		MC5.3.h.	Identify potentially harmful products used at home, school, and in communities, including interpreting consumer chemical hazard symbols, and describe practices that individuals can follow to ensure personal and community safety.		
		MC5.3.i.	Research cultural values related to the consumption of products, such as using all parts of an animal.		
				MC5.3.j.	Investigate how natural and manufactured products are disposed of personally, in their communities, and in Saskatchewan.
		MC5.3.k.	Recognize the need for developing a sense of responsibility towards other people, other living things, and the environment when choosing how to use and dispose of manufactured products.		
Gravity	5	FM5.1.	Analyze the effects of gravitational, magnetic, and mechanical forces, including friction, on the movement of objects. [CP, SI]		
		FM5.1.a.	Differentiate between examples of contact forces in their daily lives.		



	FM5.1.b.	Describe how forces can act directly or from a distance to cause objects to start to move, speed up, slow down, change direction, or stop moving.
	FM5.1.c.	Explain and diagram, using force arrows to represent the relative strength and direction of a force, how contact and non-contact forces affect the movement of objects.
	FM5.1.d.	Collaboratively design and carry out an experiment to determine the effects of changing the amount of force applied to an object on the movement of the object.
	FM5.1.e.	Measure, using non-standard units , the force required to cause an object to move a specified distance, and estimate the force required to move a different object the same distance or the same object a different distance.
	FM5.1.f.	Record qualitative observations and quantitative measurements about the effects of non-contact forces which act from a distance to cause objects to move, change direction, or stay in place.
	FM5.1.g.	Differentiate between the effects of balanced and unbalanced forces on the movement of objects.
	FM5.1.h.	Pose questions to investigate the effects of friction on stationary and moving objects, and identify variables that may be relevant to the investigation.
	FM5.1.i.	Conduct a fair test to compare the effects of friction on the movement of objects over a variety of surfaces .
	FM5.1.j.	Collect and display quantitative data related to forces and motion using tables, charts, diagrams, and line graphs.
	FM5.1.k.	Measure forces in standard units using a spring scale or a force sensor.
	FM5.1.l.	Collect and graph quantitative data to compare the mass and gravitational force acting on various objects.
	FM5.1.m.	Evaluate methods used to investigate the effects of contact and non-contact forces on the movement of objects, including identifying and suggesting explanations for discrepancies in collected data.
	FM5.1.n.	Draw conclusions about the relationship between contact and non-contact forces on the movement of objects.



Earth Materials	5	WE5.2.	Investigate local, national, and global weather conditions, including the role of air movement and solar energy transfer. [SI]					
		WE5.2.f.	Develop simple conclusions about the relationship between the amount of energy absorbed by a material and the nature of the material.					
Water in the 5 Atmosphere	5	WE5.1.	Measure and represent local weather, including temperature, wind speed and direction, amount of sunlight, precipitation, relative humidity, and cloud cover. [CP, SI, TPS]					
		WE5.1.f.	Compile and display local weather data using a weather journal, tables, charts, diagrams, and graphs.					
		WE5.1.g.	Construct a wind rose to determine the predominant wind direction in a region over a given time period.					
		WE5.1.h.	Evaluate, using student-developed criteria, the effectiveness of a personally-constructed weather instrument.					
		WE5.1.i.	Construct a sample weather map for their region, indicating the temperature, wind speed and direction, precipitation, and cloud cover at a given time.					
	WE5. WE5. WE5. WE5. WE5. WE5. WE5.	WE5.1.j.	Analyze patterns and discrepancies in weather data for a given location over a specified time interval.					
		WE5.2.	Investigate local, national, and global weather conditions, including the role of air movement and solar energy transfer. [SI]					
		WE5.2.a.	Pose questions about the characteristics of local, national, and global weather conditions.					
		WE5.2.b.	Demonstrate properties of air, in that air takes up space, has weight, expands and rises when heated, exerts pressure, and moves from areas of high pressure to areas of low pressure.					
							WE5.2.c.	Measure, describe, and represent patterns in indoor and local outdoor air movement.
			WE5.3.	Analyze the impact of weather on society and the environment, including technologies that help humans address weather conditions. [DM]				
		WE5.3.a.	Explain the purpose of different types of information that weather forecasters provide.					
		WE5.3.b.	Research how and why people in their communities use short- and long-term weather forecasts in their daily lives.					



		WE5.3.c.	Analyze the impact of weather conditions for a particular region on the lives and livelihoods of people in that region, including choices of food, shelter, clothing, transportation, and employment.
		WE5.3.d.	Research effects of short- and long-term changes in weather on the lives and livelihoods of people locally, nationally, and globally.
		WE5.3.e.	Relate weather conditions, and changing weather conditions, to the activities and behaviours of animals.
		WE5.3.f.	Explain the effects of different types of severe weather on people, communities, and the environment, including personal safety preparations for various severe weather events.
		WE5.3.g.	Examine how scientists and traditional knowledge keepers can collaborate to provide a more comprehensive understanding of the effects of weather on people and the environment.
		WE5.3.h.	Research traditional and contemporary technological innovations and products related to clothing, shelter, agriculture, and transportation that various cultures have developed to address various types of weather conditions.
		WE5.3.i.	Explain why forecasting, measuring, and understanding weather is important for humans.
		WE5.3.j.	Propose ideas for new products that would help humans address various types of weather conditions.
Human Dependence on Natural Resources	5	MC5.3.	Assess how the production, use, and disposal of raw materials and manufactured products affects self, society, and the environment. [DM, SI]
		MC5.3.a.	Differentiate between raw materials and manufactured products.
		MC5.3.b.	Assess the benefits and drawbacks of manufactured materials that have been developed to improve human living conditions.
	-	MC5.3.c.	Research a product to determine the raw materials from which it is made and the process required to turn the raw materials into a manufactured product.
		MC5.3.d.	Conduct a fair test to determine the effectiveness of different types or brands of a material .
		MC5.3.e.	Develop and apply criteria for evaluating the effectiveness of a consumer product.



		MC5.3.f.	Identify locations in their communities and in Saskatchewan where agricultural and industrial manufacturing occurs, what products are created and tested, which raw materials are used, and how by- products and waste are disposed.
		MC5.3.g.	Assess the societal and environmental impacts of industrial and agricultural processes that change raw materials into manufactured products, taking into account different perspectives such as consumer, manufacturer, salesperson, and community leader.
		MC5.3.h.	Identify potentially harmful products used at home, school, and in communities, including interpreting consumer chemical hazard symbols, and describe practices that individuals can follow to ensure personal and community safety.
		MC5.3.i.	Research cultural values related to the consumption of products, such as using all parts of an animal.
		MC5.3.j.	Investigate how natural and manufactured products are disposed of personally, in their communities, and in Saskatchewan.
		MC5.3.k.	Recognize the need for developing a sense of responsibility towards other people, other living things, and the environment when choosing how to use and dispose of manufactured products.
Influences on Weather and Climate	5	WE5.1.	Measure and represent local weather, including temperature, wind speed and direction, amount of sunlight, precipitation, relative humidity, and cloud cover. [CP, SI, TPS]
		WE5.1.f.	Compile and display local weather data using a weather journal, tables, charts, diagrams, and graphs.
		WE5.1.g.	Construct a wind rose to determine the predominant wind direction in a region over a given time period.
		WE5.1.h.	Evaluate, using student-developed criteria, the effectiveness of a personally-constructed weather instrument.
		WE5.1.i.	Construct a sample weather map for their region, indicating the temperature, wind speed and direction, precipitation, and cloud cover at a given time.
		WE5.1.j.	Analyze patterns and discrepancies in weather data for a given location over a specified time interval.
		WE5.2.	Investigate local, national, and global weather conditions, including the role of air movement and solar energy transfer. [SI]



	WE5.2.a.	Pose questions about the characteristics of local, national, and global weather conditions.
	WE5.2.b.	Demonstrate properties of air, in that air takes up space, has weight, expands and rises when heated, exerts pressure, and moves from areas of high pressure to areas of low pressure.
	WE5.2.c.	Measure, describe, and represent patterns in indoor and local outdoor air movement.
	WE5.3.	Analyze the impact of weather on society and the environment, including technologies that help humans address weather conditions. [DM]
	WE5.3.a.	Explain the purpose of different types of information that weather forecasters provide.
	WE5.3.b.	Research how and why people in their communities use short- and long-term weather forecasts in their daily lives.
	WE5.3.c.	Analyze the impact of weather conditions for a particular region on the lives and livelihoods of people in that region, including choices of food, shelter, clothing, transportation, and employment.
	WE5.3.d.	Research effects of short- and long-term changes in weather on the lives and livelihoods of people locally, nationally, and globally.
	WE5.3.e.	Relate weather conditions, and changing weather conditions, to the activities and behaviours of animals.
	WE5.3.f.	Explain the effects of different types of severe weather on people, communities, and the environment, including personal safety preparations for various severe weather events.
	WE5.3.g.	Examine how scientists and traditional knowledge keepers can collaborate to provide a more comprehensive understanding of the effects of weather on people and the environment.
	WE5.3.h.	Research traditional and contemporary technological innovations and products related to clothing, shelter, agriculture, and transportation that various cultures have developed to address various types of weather conditions.
	WE5.3.i.	Explain why forecasting, measuring, and understanding weather is important for humans.
	WE5.3.j.	Propose ideas for new products that would help humans address various types of weather conditions.



Predicting Weather	5	WE5.2.	Investigate local, national, and global weather conditions, including the role of air movement and solar energy transfer. [SI]					
		WE5.2.k.	Examine weather lore and animal behaviours in traditional and contemporary cultures as tools to predict weather conditions.					
		WE5.2.I.	Predict patterns in local, regional, and global weather over a given time frame .					
		WE5.2.m.	Suggest explanations for patterns or discrepancies between predictions of weather patterns and actual data for a given location during a given time interval.					
		WE5.2.n.	Identify examples of local, national, and global weather phenomena that Canadian scientists are currently studying .					
		WE5.3.	Analyze the impact of weather on society and the environment, including technologies that help humans address weather conditions. [DM]					
		WE5.3.a.	Explain the purpose of different types of information that weather forecasters provide.					
		WE5.3.b.	Research how and why people in their communities use short- and long-term weather forecasts in their daily lives.					
		WE5.3.c.	Analyze the impact of weather conditions for a particular region on the lives and livelihoods of people in that region, including choices of food, shelter, clothing, transportation, and employment.					
		WE5.3.d.	Research effects of short- and long-term changes in weather on the lives and livelihoods of people locally, nationally, and globally.					
		WE5.3.e.	Relate weather conditions, and changing weather conditions, to the activities and behaviours of animals.					
					WE5.3.f.	Explain the effects of different types of severe weather on people, communities, and the environment, including personal safety preparations for various severe weather events.		
			WE5.3.h.	Research traditional and contemporary technological innovations and products related to clothing, shelter, agriculture, and transportation that various cultures have developed to address various types of weather conditions.				



		WE5.3.i.	Explain why forecasting, measuring, and understanding weather is important for humans.	
		WE5.3.j.	Propose ideas for new products that would help humans address various types of weather conditions.	
Consumption of Natural Resources	5	МС5.3.	Assess how the production, use, and disposal of raw materials and manufactured products affects self, society, and the environment. [DM, SI]	
		MC5.3.a.	Differentiate between raw materials and manufactured products.	
		MC5.3.b.	Assess the benefits and drawbacks of manufactured materials that have been developed to improve human living conditions.	
		MC5.3.c.	Research a product to determine the raw materials from which it is made and the process required to turn the raw materials into a manufactured product.	
		MC5.3.d.	Conduct a fair test to determine the effectiveness of different types or brands of a material .	
		MC5.3.e.	Develop and apply criteria for evaluating the effectiveness of a consumer product.	
		MC5.3.f.	Identify locations in their communities and in Saskatchewan where agricultural and industrial manufacturing occurs, what products are created and tested, which raw materials are used, and how by- products and waste are disposed.	
		MC5.3.g.	Assess the societal and environmental impacts of industrial and agricultural processes that change raw materials into manufactured products, taking into account different perspectives such as consumer, manufacturer, salesperson, and community leader.	
			MC5.3.h.	Identify potentially harmful products used at home, school, and in communities, including interpreting consumer chemical hazard symbols, and describe practices that individuals can follow to ensure personal and community safety.
		MC5.3.i.	Research cultural values related to the consumption of products, such as using all parts of an animal.	
				MC5.3.j.
		MC5.3.k.	Recognize the need for developing a sense of responsibility towards other people, other living things, and the environment when choosing how to use and dispose of manufactured products.	



Processes and Impacts of Natural Hazards	5	WE5.2.	Investigate local, national, and global weather conditions, including the role of air movement and solar energy transfer. [SI]			
		WE5.2.h.	Describe the characteristics of severe weather events, such as hurricanes, tornadoes, blizzards, hailstorms, droughts, and tropical cyclones, including the role of air movement and solar energy transfer in those events.			
		WE5.2.i.	Relate weather extremes to specific locations in Canada and on Earth.			
		WE5.2.j.	Compare weather conditions locally, regionally, and across Canada at various times throughout the year.			
		WE5.3.	Analyze the impact of weather on society and the environment, including technologies that help humans address weather conditions. [DM]			
		WE5.3.a.	Explain the purpose of different types of information that weather forecasters provide.			
		WE5.3.b.	Research how and why people in their communities use short- and long-term weather forecasts in their daily lives.			
		WE5.3.c.	Analyze the impact of weather conditions for a particular region on the lives and livelihoods of people in that region, including choices of food, shelter, clothing, transportation, and employment.			
		WE5.3.d.	Research effects of short- and long-term changes in weather on the lives and livelihoods of people locally, nationally, and globally.			
		WE5.3.e.	Relate weather conditions, and changing weather conditions, to the activities and behaviours of animals.			
		WE5.3.f.	Explain the effects of different types of severe weather on people, communities, and the environment, including personal safety preparations for various severe weather events.			
					WE5.3.g.	Examine how scientists and traditional knowledge keepers can collaborate to provide a more comprehensive understanding of the effects of weather on people and the environment.
				WE5.3.h.	Research traditional and contemporary technological innovations and products related to clothing, shelter, agriculture, and transportation that various cultures have developed to address various types of weather conditions.	
		WE5.3.i.	Explain why forecasting, measuring, and understanding weather is important for humans.			



		WE5.3.j.	Propose ideas for new products that would help humans address various types of weather conditions.									
Simple Machines 5	5	FM5.2.	Investigate characteristics of simple machines, including levers, wheels and axles, pulleys, inclined planes, screws, and wedges, for moving and lifting loads. [SI, TPS]									
		FM5.2.a.	Pose and refine testable questions about the operation of simple machines.									
		FM5.2.b.	Demonstrate how simple machines act to reduce effort, increase the distance a load moves, and/or change the direction of an applied force.									
		FM5.2.c.	Select and safely use tools and materials in a manner that ensures personal safety and the safety of others when investigating the characteristics of simple machines.									
		FM5.2.d.	Design and carry out an experiment to compare the force needed to lift a load manually with that required to lift it using various simple machines.									
		FM5.2.e.	Demonstrate how the position of the fulcrum, the load, and the applied force differs for each of the three classes of levers.									
		FM5.2.f.	Determine the relationship between the applied force and the distance the load is moved for each class of lever.									
		FM5.2.g.	Compare the operation of wheel and axle mechanisms with the operation of levers.									
		FM5.2.h.	Determine the effectiveness of wheel and axle mechanisms of various diameters, rotational speeds, and rotational directions for accomplishing specific tasks.									
				FM5.2.i.	Investigate the relationship between the amount of applied force and the distance that the load is moved in single and multiple pulley systems, including determining the mechanical advantage of the system.							
												FM5.2.j.
			FM5.2.k.	Design and construct a prototype of a simple machine which is meant to accomplish a student-identified task.								
	FM5.2.I.	Evaluate the efficiency and effectiveness of a prototype of a simple machine using student- identified criteria, and refine the prototype based on data.										



	FM5.2.m.	Create a representation of the characteristics and operating principles of each type of simple machine.
	FM5.2.n.	Recognize that scientific processes and ideas help explain how and why simple machines operate.
	FM5.2.o.	Pose new questions to investigate about the characteristics of simple machines.
	FM5.3.	Assess how natural and man-made forces and simple machines affect individuals, society, and the environment. [CP, DM, SI]
	FM5.3.a.	Provide examples of simple and complex machines used at home, in school, and throughout their community.
	FM5.3.b.	Compare technologies developed and/or used by various cultures, past and present, which represent applications of simple machines.
	FM5.3.c.	Analyze the effects of forces from natural phenomena on the natural and constructed environment.
	FM5.3.d.	Assess, using student-identified criteria, the function and effectiveness of products designed to enhance or reduce friction between two surfaces.
	FM5.3.e.	Suggest how the function of common simple mechanisms, such as a crowbar, wheelbarrow, elbow joint, fork, rake, baseball bat, can opener, stapler, or scissors, might be different had they been based on a different class of lever.
	FM5.3.f.	Identify the benefits and disadvantages of practical examples of levers on their lives and in their community.
	FM5.3.g.	Assess the impacts of machines, such as carts, boats, airplanes, logging equipment, and tractors, on traditional lifestyles.
	FM5.3.h.	Examine how agricultural, industrial, automotive, marine, and household applications of pulleys have changed the lives of individuals and affected society and the environment.
	FM5.3.i.	Research the use of inclined planes and other simple machines used to construct structures such as pyramids, Stonehenge, Easter Island moai, tipis, inukshuks, and totem poles.
	FM5.3.j.	Examine the types of tasks in the community that have been and are being currently accomplished using wedges .
	FM5.3.k.	Analyze technologies that are based on principles of simple machines in sports and recreation .





	FM5.3.l.	Analyze the ways in which various combinations of simple machines can be combined to create complex machines.
	FM5.3.m.	Imagine machines that could be developed to simplify tasks within their lives, including fanciful devices such as Rube Goldberg machines.



Scope Name	Grade	Standard	Description
Electromagnetic 6 Forces	6	EL6.2.	Investigate the characteristics and applications of static electric charges, conductors, insulators, switches, and electromagnetism. [SI]
		EL6.2.a.	Conduct investigations to determine the attraction and repulsion of electrostatically charged materials and represent the results of those investigations using drawings, sketches, tables, charts, and/or other representations.
		EL6.2.b.	Describe how results of similar and repeated investigations into the characteristics of static electric charges may vary and suggest possible explanations for identified variations.
		EL6.2.c.	Identify natural and man-made applications of static electric charge and discharge .
		EL6.2.d.	Pose questions related to the physical properties of conductors, insulators, simple circuits, and electromagnets .
		EL6.2.e.	Make predictions, based on observed patterns of events, related to the physical properties of conductors, insulators, simple circuits, and electromagnets and conduct investigations to test those predictions.
The Solar System 6 Image: state of the second	6	SS6.1.	Research and represent the physical characteristics of the major components of the solar system, including the sun, planets, moons, asteroids, and comets. [CP, SI]
		SS6.1.a.	Use a variety of sources and technologies to gather and compile pertinent information about the physical characteristics of the major components of the solar system.
		SS6.1.b.	Analyze historical and current technological developments that have enabled human observation of the major components of the solar system.
		SS6.1.c.	Construct a timeline of Canadian and worldwide research efforts related to understanding the major components of the solar system.
		SS6.1.d.	Evaluate the validity and usefulness of different sources of information about the physical characteristics of the solar system.
		SS6.1.e.	Use star charts and astronomy guides to investigate the night sky, including constellations, and record observations using notes in point form, data tables, simple diagrams, and/or charts.



		SS6.1.f.	Describe objects in the heavens, as indicated through First Nations and Métis art and stories or by Elders or traditional knowledge keepers.
		SS6.1.g.	Create scale-distance and/or scale-size models to represent the major components of the solar system.
		SS6.1.h.	Evaluate the usefulness and accuracy of scale- distance and scale-size models of the major components of the solar system.
		SS6.1.i.	Explain how evidence is continually questioned in order to validate scientific knowledge about the solar system.
Space Exploration	6	SS6.3.	Evaluate past, current, and possible future contributions of space exploration programs including space probes and human spaceflight, which support living and working in the inner solar system. [DM, TPS]
		SS6.3.a.	Construct a timeline of Canadian and worldwide space exploration programs related to living and working in space, including collaborative efforts among countries.
		SS6.3.b.	Investigate how astronauts are able to meet their basic needs while living and working in space.
		SS6.3.c.	Research the various work roles and worldwide locations required to support human spaceflight programs.
		SS6.3.d.	Describe instances where scientific ideas and discoveries have led to new inventions and applications that support human exploration of space and which have extended scientific knowledge related to living and working in space.
		SS6.3.e.	Identify potential personal, societal, technological, and environmental barriers to living and working in space.
		SS6.3.f.	Design a model of a habitable space vehicle that can travel to and return from a student-selected location in the inner solar system.
		SS6.3.g.	Investigate the work being done in preparation for future space travel and make predictions about future achievements related to living and working in space.
Air and Flight	6	FL6.1.	Examine connections between human fascination with flight and technologies and careers based on the scientific principles of flight. [CP, DM, SI]
		FL6.1.a.	Observe and describe physical characteristics and adaptations that enable birds , and bats to fly.



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	FL6.2.h.	Compare the sources of thrust of various constructed flying devices including the propeller, jet engine, and solid or liquid-fuelled rocket.	
		FL6.3.	Design a working prototype of a flying object that meets specified performance criteria. [TPS]
		FL6.3.a.	Assess the characteristics of flying objects .
		FL6.3.b.	Construct a prototype of a flying object that meets student-specified performance and aesthetic criteria.
		FL6.3.c.	Work collaboratively with classmates to define criteria for judging the performance and aesthetics of a prototype of a flying object.
		FL6.3.d.	Select and carefully use appropriate tools in manipulating materials and in building prototypes.
		FL6.3.e.	Work collaboratively to collect relevant observations and data to evaluate the performance of a prototype of an object that will fly.
		FL6.3.f.	Demonstrate and explain the importance of selecting appropriate processes for investigating scientific questions and solving technological problems.
		FL6.3.g.	Analyze personally collected data and suggest improvements to a prototype design.
		FL6.3.h.	Communicate procedures and results of prototype design, construction, testing, and evaluation in a technical design report.
		FL6.3.i.	Identify new questions or problems about flight that arise through the prototype design process.
		FL6.3.j.	Propose designs for futuristic flying devices that meet a particular student-identified need.
Microorganisms	6	DL6.5.	Assess effects of micro-organisms on past and present society, and contributions of science and technology to human understanding of micro- organisms. [CP, DM, SI]
		DL6.5.a.	Choose and correctly use appropriate tools to study living organisms that cannot be seen with the naked eye.
		DL6.5.b.	Observe and represent, using words and diagrams, characteristics of micro-organisms obtained from student- or teacher-collected water samples .
		DL6.5.c.	Explain how micro-organisms meet their basic needs, including moving around and obtaining food, water, and oxygen.



		DL6.5.d.	Design and conduct an investigation of the factors
			down organic matter .
		DL6.5.e.	Compare cultural , historical, and scientific understandings and explanations of disease, including the contributions of scientists such as John Snow and Louis Pasteur to the germ theory.
		DL6.5.f.	Critique representations or depictions of micro- organisms in a variety of texts .
		DL6.5.g.	Discuss positive and negative impacts of micro- organisms for humans .
Forms and Uses of Energy	6	EL6.1.	Assess personal, societal, economic, and environmental impacts of electricity use in Saskatchewan and propose actions to reduce those impacts. [CP, DM]
		EL6.1.a.	#N/A
		EL6.1.b.	#N/A
		EL6.1.c.	#N/A
		EL6.1.d.	#N/A
		EL6.1.e.	#N/A
		EL6.1.f.	#N/A
Electric Circuits	6	EL6.2.	Investigate the characteristics and applications of static electric charges, conductors, insulators, switches, and electromagnetism. [SI]
		EL6.2.f.	Identify appropriate tools, instruments, and materials to use when investigating the properties of conductors, insulators, simple circuits, and electromagnets and use those tools and apparatus in a manner that ensures personal safety and the safety of others.
		EL6.2.g.	Test the conductivity of a variety of solids and liquids, following a given set of procedures, to identify which materials are conductors and which are insulators, and draw conclusions about the types of materials that work best as conductors and which work best as insulators.
		EL6.2.h.	Explain the role of switches in electrical circuits.
		EL6.2.i.	Describe the operation of an electromagnet and contrast magnets and electromagnets.
		EL6.2.j.	Plan a set of steps to carry out a fair test of a science-related idea related to electromagnets, such as how to increase the strength of an electromagnet.



		EL6.2.k.	Use evidence gathered through research and observation to answer questions related to the physical properties of conductors, insulators, simple circuits, and electromagnets.
		EL6.2.I.	Describe the operation of common technologies based on properties of static electricity, current electricity, or electromagnetism.
		EL6.3.	Explain and model the properties of simple series and parallel circuits. [SI, TPS]
		EL6.3.a.	State the required characteristics of a simple electric circuit .
		EL6.3.b.	Compare a variety of electrical pathways by constructing simple circuits.
		EL6.3.c.	Contrast a closed circuit, open circuit, and short circuit.
	EL6.3.d.	Propose questions to investigate, and practical problems to solve, related to simple series and parallel circuits .	
		EL6.3.e.	Construct and test various combinations of simple electric circuits to determine similarities and differences between series and parallel circuits.
		EL6.3.f.	Draw electrical circuit diagrams to represent simple series and parallel circuits using appropriate symbols .
		EL6.3.g.	Construct simple circuits to demonstrate how electrical energy can be controlled to produce light, heat, sound, motion, and magnetic effects.
		EL6.3.h.	Design, construct, and troubleshoot an electrical circuit that meets one or more student-specified criteria.
Classification of Organisms	6	DL6.1.	Recognize, describe, and appreciate the diversity of living things in local and other ecosystems, and explore related careers. [CP, SI]
		DL6.1.a.	State the characteristics that define all living things .
		DL6.1.b.	Observe and document the diversity of living things in their local habitat through journaling, a nature walk, sketching, drawing, photographing, video recording, or other means.
		DL6.1.c.	Show respect for other people, living things, and the environment when observing ecosystems.
		DL6.1.d.	Document the diversity of living things in different terrestrial and aquatic habitats using print, video, and/or online resources.



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	DL6.2.	Examine how humans organize understanding of the diversity of living things. [CP, SI]
	DL6.2.a.	Construct and use a classification system to organize living things into groups and subgroups according to student-developed criteria.
	DL6.2.b.	Consider personal observations and ideas as well as those of others when constructing classification systems by asking questions, sharing stories, and responding to classmates' classification systems.
	DL6.2.c.	Demonstrate how different classification systems can be used to classify the same set of objects and explain how humans develop and refine classification systems to meet specific needs.
	DL6.2.d.	Explore local First Nations and Métis methods of organizing understanding of living things .
	DL6.2.e.	Describe how aspects of First Nations and Métis worldviews shape their systems of organizing understanding of living things.
	DL6.2.f.	Illustrate the diversity of living things on Earth by constructing a visual representation showing examples from each kingdom of the five kingdom taxonomic model: monera, protists, fungi, plants, and animals.
	DL6.2.g.	Use appropriate scientific terminology to communicate ideas about the diversity of living things .
	DL6.2.h.	Critique the use of biological classification systems to aid scientific understanding of living things rather than relying on common, local, or personally chosen names.
	DL6.3.	Analyze the characteristics and behaviours of vertebrates and invertebrates. [SI]
	DL6.3.a.	Identify characteristics of vertebrates and invertebrates and classify animals as vertebrates or invertebrates from drawings, videos, pictures, lists, and/or personal observations.
	DL6.3.b.	Compare and represent characteristics and behaviours of student-selected examples of vertebrates.
	DL6.3.c.	Compare and represent characteristics and behaviours .
	DL6.3.d.	Propose questions for inquiry that arise from personal investigations of characteristics and behaviours of animals.



		DL6.3.e.	Suggest reasons why current biological classification systems for living things are based on structural characteristics rather than solely on physical appearance or behaviour.			
Changes in Biodiversity	6	DL6.4.	Examine and describe structures and behaviours that help: individual living organisms survive in their environments in the short term; species of living organisms adapt to their environments in the long term. [CP, DM, SI]			
		DL6.4.a.	Propose questions to investigate related to the structures and behaviours that help organisms survive in their environments .			
		DL6.4.b.	Show interest and curiosity in learning about organisms' adaptations to different environments by journaling, participating in a nature walk, or sharing science-related information about adaptations with classmates.			
		DL6.4.c.	Describe examples of structures and behaviours, including seasonal changes, which help living things survive in their environments during the lifetime of the organism.			
		DL6.4.d.	Describe examples of adaptations to structures and behaviours that have enabled living things to adapt to their environments in the long term.			
		DL6.4.e.	Explain how scientists use fossils and the fossil record as a source of information to identify changes or diversity in species over long periods of time.			
		DL6.4.f.	Suggest reasons why specific species of organisms have or might become endangered or extinct.			
				DL6.4.g.	Gather information from a variety of sources to answer student-generated questions about the structural and behavioural adaptations of organisms.	
					DL6.4.h.	Compare closely-related animals that live in different parts of the world and propose explanations for any differences in their structures and behaviours.
		DL6.4.i.	Research the advantages of particular structures or behaviours of organisms that suit different environments .			
						DL6.4.j.



Natural Selection and Populations	6	DL6.4.	Examine and describe structures and behaviours that help: individual living organisms survive in their environments in the short term; species of living organisms adapt to their environments in the long term. [CP, DM, SI]											
		DL6.4.a.	Propose questions to investigate related to the structures and behaviours that help organisms survive in their environments .											
		DL6.4.b.	Show interest and curiosity in learning about organisms' adaptations to different environments by journaling, participating in a nature walk, or sharing science-related information about adaptations with classmates.											
		DL6.4.c.	Describe examples of structures and behaviours, including seasonal changes, which help living things survive in their environments during the lifetime of the organism.											
		DL6.4.d.	Describe examples of adaptations to structures and behaviours that have enabled living things to adapt to their environments in the long term.											
		DL6.4.e.	Explain how scientists use fossils and the fossil record as a source of information to identify changes or diversity in species over long periods of time.											
		DL6.4.f.	Suggest reasons why specific species of organisms have or might become endangered or extinct.											
		DL6.4.g.	Gather information from a variety of sources to answer student-generated questions about the structural and behavioural adaptations of organisms.											
		DL6.4.h.	Compare closely-related animals that live in different parts of the world and propose explanations for any differences in their structures and behaviours.											
													DL6.4.i.	Research the advantages of particular structures or behaviours of organisms that suit different environments .
										DL6.4.j.	Suggest reasons to explain how results of similar and repeated studies of the adaptations of organisms may vary and suggest possible explanations for variations .			
					DL6.1.e.	Analyze how First Nations and Métis art and storytelling highlight movement and/or behaviour of living things and reflect a worldview that values all living things.								
		DL6.1.f.	Identify examples of science and technology- related careers and workplaces which require an understanding of the diversity of living things .											



		DL6.1.	Recognize, describe, and appreciate the diversity of living things in local and other ecosystems, and explore related careers. [CP, SI]
Patterns of Motion	6	SS6.1.	Research and represent the physical characteristics of the major components of the solar system, including the sun, planets, moons, asteroids, and comets. [CP, SI]
		SS6.1.a.	Use a variety of sources and technologies to gather and compile pertinent information about the physical characteristics of the major components of the solar system.
		SS6.1.b.	Analyze historical and current technological developments that have enabled human observation of the major components of the solar system.
		SS6.1.c.	Construct a timeline of Canadian and worldwide research efforts related to understanding the major components of the solar system.
		SS6.1.d.	Evaluate the validity and usefulness of different sources of information about the physical characteristics of the solar system.
		SS6.1.e.	Use star charts and astronomy guides to investigate the night sky, including constellations, and record observations using notes in point form, data tables, simple diagrams, and/or charts.
		SS6.1.f.	Describe objects in the heavens, as indicated through First Nations and Métis art and stories or by Elders or traditional knowledge keepers.
		SS6.1.g.	Create scale-distance and/or scale-size models to represent the major components of the solar system.
		SS6.1.h.	Evaluate the usefulness and accuracy of scale- distance and scale-size models of the major components of the solar system.
		SS6.1.i.	Explain how evidence is continually questioned in order to validate scientific knowledge about the solar system.
Earth, Sun, and Moon System	6	SS6.2.	Assess the efficacy of various methods of representing and interpreting astronomical phenomena, including phases, eclipses, and seasons. [CP, SI]
		SS6.2.d.	Propose personal explanations for the causes of seasons, phases, and eclipses.
		SS6.2.e.	Demonstrate how Earth's rotation causes the day and night cycle and how Earth's 23.5° tilt and revolution around the sun causes the yearly cycle of seasons.


		SS6.2.f.	Propose explanations for how the yearly cycle of seasons might differ if Earth's axis were not tilted.
		SS6.2.g.	Consider alternate models of seasons and explanations for those models .
		SS6.2.h.	Model the relative positions of the sun, Earth, and moon to demonstrate moon phases and lunar and solar eclipses.
		SS6.2.i.	Propose questions related to astronomical phenomena to investigate using models and simulations, such as "Do other planets exhibit phases?", "How would seasons on Earth differ if Earth were not tilted?", "How would patterns of eclipses change if the sun, Earth, or moon were different diameters or positioned at different locations?".
Natural Selection	6	DL6.4.	Examine and describe structures and behaviours that help: individual living organisms survive in their environments in the short term; species of living organisms adapt to their environments in the long term. [CP, DM, SI]
		DL6.4.a.	Propose questions to investigate related to the structures and behaviours that help organisms survive in their environments .
		DL6.4.b.	Show interest and curiosity in learning about organisms' adaptations to different environments by journaling, participating in a nature walk, or sharing science-related information about adaptations with classmates.
		DL6.4.c.	Describe examples of structures and behaviours, including seasonal changes, which help living things survive in their environments during the lifetime of the organism.
		DL6.4.d.	Describe examples of adaptations to structures and behaviours that have enabled living things to adapt to their environments in the long term.
		DL6.4.e.	Explain how scientists use fossils and the fossil record as a source of information to identify changes or diversity in species over long periods of time.
		DL6.4.f.	Suggest reasons why specific species of organisms have or might become endangered or extinct.
		DL6.4.g.	Gather information from a variety of sources to answer student-generated questions about the structural and behavioural adaptations of organisms.



		DL6.4.h.	Compare closely-related animals that live in different parts of the world and propose explanations for any differences in their structures and behaviours.										
		DL6.4.i.	Research the advantages of particular structures or behaviours of organisms that suit different environments .										
		DL6.4.j.	Suggest reasons to explain how results of similar and repeated studies of the adaptations of organisms may vary and suggest possible explanations for variations .										
The Stars	6	SS6.1.	Research and represent the physical characteristics of the major components of the solar system, including the sun, planets, moons, asteroids, and comets. [CP, SI]										
		SS6.1.a.	Use a variety of sources and technologies to gather and compile pertinent information about the physical characteristics of the major components of the solar system.										
		SS6.1.b.	Analyze historical and current technological developments that have enabled human observation of the major components of the solar system.										
		SS6.1.c.	Construct a timeline of Canadian and worldwide research efforts related to understanding the major components of the solar system.										
		SS6.1.d.	Evaluate the validity and usefulness of different sources of information about the physical characteristics of the solar system.										
		SS6.1.e.	Use star charts and astronomy guides to investigate the night sky, including constellations, and record observations using notes in point form, data tables, simple diagrams, and/or charts.										
												SS6.1.f.	Describe objects in the heavens, as indicated through First Nations and Métis art and stories or by Elders or traditional knowledge keepers.
		SS6.1.g.	Create scale-distance and/or scale-size models to represent the major components of the solar system.										
							SS6.1.h.	Evaluate the usefulness and accuracy of scale- distance and scale-size models of the major components of the solar system.					
		SS6.1.i.	Explain how evidence is continually questioned in order to validate scientific knowledge about the solar system.										



SS6.2.	Assess the efficacy of various methods of representing and interpreting astronomical phenomena, including phases, eclipses, and seasons. [CP, SI]
SS6.2.a.	Examine how people of different cultures, including First Nations, have recorded to solve practical problems such as the appropriate time to plant and harvest crops, to support navigation on land and water, or to foretell significant events through stories and legends.
SS6.2.b.	Examine ways in which humans have represented understanding of or interest in astronomical phenomena through music, dance, drama, visual art, or stories.
SS6.2.c.	Demonstrate the importance of selecting appropriate processes for investigating scientific questions and solving technological problems by explaining why astronomy is considered a part of science but astrology is not.



Scope Name	Grade	Standard	Description		
Biogeochemical Cycles	7	IE7.3.	Evaluate biogeochemical cycles as representations of energy flow and the cycling of matter through ecosystems. [CP, SI]		
		IE7.3.b.	Model the carbon, nitrogen, and water cycles to illustrate how matter cycles through ecosystems.		
		IE7.3.f.	Design and conduct an experiment to investigate the conditions essential for the growth of plants .		
Factors that Affect Solubility	7	MS7.3.	Investigate the properties and applications of solutions, including solubility and concentration. [SI, DM]		
		MS7.3.a.	Provide examples of solid, liquid, and gaseous solutions and identify which substance is the solute and which is the solvent in each solution.		
		MS7.3.b.	Describe the characteristics of solutions using the terms solute, solvent, soluble, and insoluble, based on the particle model of matter.		
		MS7.3.c.	Create and describe the concentration of student- prepared dilute, concentrated, saturated, and supersaturated solutions using those qualitative terms and quantitative measurements.		
				MS7.3.d.	Value accuracy, precision, and honesty when collecting and reporting data related to concentrations of solutions.
		MS7.3.e.	Investigate the factors that determine how quickly a solute dissolves in a solvent.		
		MS7.3.f.	Gather and interpret information from various resources related to solutions and concentrations of solutions.		
		MS7.3.g.	Design and implement an experiment to investigate the effect of temperature on the solubility of a solution.		
		MS7.3.h.	Predict the solubility of a solute by interpolating or extrapolating from student-generated solubility curves.		
		MS7.3.i.	Analyze the effects of technological inventions or processes related to solutions on self, community, and the environment.		
		MS7.3.j.	Research how various science disciplines and engineering fields study and apply scientific knowledge related to solutions.		



Resource Extraction and Processes	7	EC7.2.	Identify locations and processes used to extract Earth's geological resources and examine the impacts of those locations and processes on society and the environment. [SI, DM, CP]
		EC7.2.e.	Relate processes used to extract primary mineral resources in Saskatchewan to the location, type, and depth of the resource.
		EC7.2.f.	Provide examples of technologies used to further scientific research related to extracting geological resources .
Thermal Energy Image: Compare to the second sec		EC7.2.g.	Evaluate different approaches taken to answer questions, solve problems, and make decisions when searching for geological resources within Earth .
	EC7 EC7 EC7 EC7	EC7.2.h.	Provide examples of Canadian contributions to the scientific understanding and technological developments related to surface and sub- surface geology and mining, and identify societal and economic factors that drive such exploration and research.
		EC7.2.i.	Suggest solutions to economic and environmental issues related to the extraction of geological resources in Saskatchewan.
		EC7.2.j.	Identify uses for rocks and minerals, such as healing, recuperative powers, and ceremonies, which include ideas not explained by science.
		EC7.2.k.	Research Saskatchewan careers directly and indirectly related to resource exploration.
	7	НТ7.3.	Investigate principles and applications of heat transfer via the processes of conduction, convection, and radiation. [SI]
		HT7.3.a.	Demonstrate and explain how heat is transferred by the processes of conduction, convection, and radiation in solids, liquids, and gases.



		HT7.3.b.	Construct a visual or dramatic representation of heat transfer via conduction in a solid.
		HT7.3.c.	Model convection currents in fluids and discuss the effectiveness of the model.
		HT7.3.d.	Assess the impacts on self, society, and the environment, of conduction, convection, and radiation in the natural and constructed world .
		HT7.3.e.	Evaluate applications of technologies designed to enhance or restrict the transfer of heat energy via conduction, convection, or radiation using student- developed criteria.
		HT7.3.f.	Design and carry out an experiment to determine differences in the ability of various surfaces to absorb and reflect radiant heat.
		HT7.3.g.	Select appropriate methods and tools for collecting and displaying data and information related to radiant heat.
		HT7.3.h.	Demonstrate safe and responsible work practices, including keeping the work area uncluttered with only appropriate materials present when investigating heat transfer via conduction, convection, and radiation.
Rock Cycle	7	EC7.2.	Identify locations and processes used to extract Earth's geological resources and examine the impacts of those locations and processes on society and the environment. [SI, DM, CP]
		EC7.2.b.	Distinguish between rocks and minerals using physical samples, pictures, and/ or video recordings and identify the minerals most often found in rocks in Saskatchewan and around the world.
		EC7.2.c.	Classify rocks and minerals based on physical properties such as colour, hardness, cleavage, lustre, and streak.



	EC7.2.d.	Identify locations of Saskatchewan's primary mineral resources and their primary uses.
	EC7.3.	Investigate the characteristics and formation of the surface geology of Saskatchewan, including soil, and identify correlations between surface geology and past, present, and possible future land uses. [DM, SI]
	EC7.3.a.	Model the processes of formation of the three major types of rocks: sedimentary, igneous, and metamorphic.
	EC7.3.b.	Explain how geologists use the fossil record to provide evidence of geological history.
	EC7.3.c.	Construct a visual representation of the rock cycle and relate this representation to the surface geology of Saskatchewan and Canada.
	EC7.3.d.	Develop and use a classification key for rocks based on physical characteristics and method of formation.
	EC7.3.e.	Describe examples of mechanical and chemical weathering of rocks.
	EC7.3.i.	Collect, with permission, and examine samples of local soils to determine their physical properties .
	EC7.3.j.	Classify soil samples according to their characteristics .
	EC7.3.k.	Identify predominant soil types and corresponding land uses in Saskatchewan.
	EC7.3.l.	Assess environmental and economic impacts of past and current land use practices in Saskatchewan, and describe intended and unintended consequences of those practices on self, society, and the environment, including soil degradation.



Energy Flow through 7 Living Systems	7	IE7.3.h.	Describe how energy passes through ecosystems during the processes of photosynthesis and cellular respiration.
		IE7.3.	Evaluate biogeochemical cycles as representations of energy flow and the cycling of matter through ecosystems. [CP, SI]
Photosynthesis and Cellular Respirations	7	IE7.3.	Evaluate biogeochemical cycles as representations of energy flow and the cycling of matter through ecosystems. [CP, SI]
		IE7.3.g.	Consider observations and ideas from a variety of sources during investigations and before drawing conclusions related to biogeochemical cycles.
Mixtures	7	MS7.1.	Distinguish between pure substances and mixtures using the particle model of matter. [SI, CP]
		MS7.1.a.	Examine a variety of objects and materials, and record qualitative physical properties of those objects in a chart or data table.
		MS7.1.b.	Describe the characteristics of pure substances, mechanical mixtures, and solutions.
		MS7.1.c.	Construct a graphic organizer for the classification of matter that includes mixtures, pure substances, elements, compounds, mechanical mixtures, and solutions.
		MS7.1.d.	Classify common substances as pure substances, mechanical mixtures, or solutions.
		MS7.1.e.	Listen to and consider the ideas of classmates when classifying materials as pure substances or mixtures.
		MS7.1.f.	Create mechanical mixtures and solutions using common materials and compare the physical properties of the original materials and the resultant mixture or solution.



MS7.1.g.	State the four main ideas of the particle model of matter.	
MS7.1.h.	Create models and/or physical representations that depict the nature of particles in pure substances, mechanical mixtures, and solutions according to the particle model of matter.	
MS7.1.i.	Analyze the usefulness of personally constructed representations of particles and the strengths and limitations of models in science generally.	
MS7.1.j.	Generate questions related to differences between mixtures and solutions and rephrase in a testable form .	
MS7.2.	Investigate methods of separating the components of mechanical mixtures and solutions, and analyze the impact of industrial and agricultural applications of those methods. [SI, TPS]	
MS7.2.a.	Describe methods used to separate the components of mechanical mixtures and solutions, including mechanical sorting, filtration, evaporation, distillation, magnetism, and chromatography.	
MS7.2.b.	Trace the historical development of a technology or process used to separate mixtures .	
MS7.2.c.	Describe common household examples of technologies that are used to separate components of mechanical mixtures or solutions.	
MS7.2.d.	Design and conduct an experiment to determine the effectiveness and/ or efficiency of one or more methods of separating mechanical mixtures and solutions.	
MS7.2.e.	Report the strengths and limitations of a chosen experimental design to determine the effectiveness and/or efficiency of one or more methods of separating mechanical mixtures and solutions.	



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		MS7.2.f.	Use tools and apparatus safely when conducting investigations into methods of separating mixtures.
		MS7.2.g.	Demonstrate knowledge of WHMIS standards by using proper techniques for handling and disposing of lab materials and following warning label symbols, including common household product symbols, when separating mixtures.
		MS7.2.h.	Describe the scientific principles underlying a past or present industrial technology designed to separate mixtures
		MS7.2.i.	Discuss intended and unintended consequences of a particular industrial or agricultural technology or process used for separating materials.
		MS7.2.j.	Use a technological problem-solving process to design, construct, and evaluate a prototype of a process or device for separating a mechanical mixture or solution.
		MS7.2.k.	Identify new questions and problems that arise from what was learned about solutions and mixtures , including questions that science cannot answer.
Changes in Energy on the Molecular Level	7	HT7.2.	Explain how understanding differences between states of matter and the effect of heat on changes in state provide evidence for the particle theory. [SI]
		HT7.2.a.	Provide examples from daily life that illustrate the effects of heating and cooling on solids, liquids, and gases.
		HT7.2.b.	Conduct experiments to determine the effects of changes in temperature on solids, liquids, and gases.
		HT7.2.c.	Construct and label a heating curve for water, using student-collected data, indicating states of matter and changes of state.



		HT7.2.d.	Create a visual or dramatic representation to explain changes of state of matter according to the particle model of matter.
		HT7.2.e.	Choose appropriate instruments and use them safely, effectively, and accurately for collecting temperature data when investigating states of matter and changes of state.
		HT7.2.f.	Trace the historical development of different scales and discuss the need for standardized measurements of temperature.
		HT7.2.g.	Distinguish between heat and temperature using the concept of kinetic energy and the particle model of matter.
		HT7.2.h.	Explain how evidence gathered while investigating states of matter and changes in states of matter supports or refutes the particle theory of matter.
Heating and Cooling Technologies	7	HT7.1.	Assess the impact of past and current heating and cooling technologies related to food, clothing, and shelter on self, society, and the environment. [TPS, DM, CP]
		HT7.1.a.	Illustrate the historical development and the underlying scientific principles of technologies designed to address practical problems regarding human heating and cooling needs for food, shelter, and clothing.
		HT7.1.b.	Communicate questions, ideas, intentions, plans, and results of inquiries related to heat transmission using lists, notes in point form, sentences, data tables, graphs, drawings, oral language, and other means.
		HT7.1.c.	Analyze the impact of the design and function of a heating- or cooling-related technology on self and society.



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Matter and Energy 7 In Food Webs 7		HT7.1.d.	Compare, in qualitative terms, the heat capacities of some common materials, including water, and explain how heat capacity influences choices of materials used in the development of technologies related to clothing, food, and shelter.
		HT7.1.e.	Evaluate the efficiency of different types of home insulation with respect to criteria such as R-value, cost, and resistance to water and air infiltration.
		HT7.1.f.	Use a technological problem-solving process to design, construct, and evaluate a prototype of a device that will provide a solution to a practical problem related to heating or cooling.
		HT7.1.g.	Assess the design of a personally constructed heating or cooling prototype using collaboratively developed criteria.
		HT7.1.h.	Provide examples of problems related to heating and cooling that arise at home, in an industrial setting, or in the environment, that cannot be solved using scientific and technological knowledge.
		HT7.1.i.	Create a photo journal of science- and technology-based careers in the community related to heating and cooling, such as heating systems and equipment contractors, and boiler engineers.
	7	IE7.2.	Observe, illustrate, and analyze living organisms within local ecosystems as part of interconnected food webs, populations, and communities. [SI]
		IE7.2.h.	Identify strengths and weaknesses of different methods of collecting and displaying ecological data .
		IE7.2.i.	Classify organisms in a variety of ecosystems as producers, consumers, or decomposers and further classify consumers as herbivores, carnivores, or omnivores.



		IE7.2.j.	Interpret interdependence within natural systems by constructing food chains and food webs to illustrate the interactions among producers, consumers, and decomposers in a particular ecosystem.
		IE7.2.k.	Construct a classification key, using appropriate scientific terminology, which will enable classmates to differentiate between producers, consumers, and decomposers.
		IE7.3.	Evaluate biogeochemical cycles as representations of energy flow and the cycling of matter through ecosystems. [CP, SI]
		IE7.3.c.	Analyze the strengths and limitations of models in science generally, and then apply these criteria to evaluate the efficacy of a student model of a biogeochemical cycle.
		IE7.3.d.	Explain the role of decomposers in recycling matter in an ecosystem.
		IE7.3.e.	Describe examples of how scientists collect evidence, search for patterns and relationships in data, and propose explanations to further the development of scientific knowledge about energy and matter flow in ecosystems.
		IE7.3.j.	Provide examples of scientific knowledge that have resulted in the development of technologies designed to assist in managing aspects of ecosystems .
Organism Interactions in Ecosystems	7	IE7.1.	Relate key aspects of Indigenous knowledge to their understanding of ecosystems. [CP]
		IE7.1.a.	Gather information about traditional Indigenous practices with respect to the relationships and connections between people and their ecological environment.



	IE7.1.b.	Examine key aspects of Indigenous knowledge and First Nations and Métis people's practices that contribute to understanding of ecosystems and the interactions of their components.
	IE7.1.c.	Provide specific examples of Indigenous knowledge in understanding the components of their ecosystems.
	IE7.1.d.	Describe the ways that traditional Indigenous knowledge about respect and responsibility for the land, self, and others has been transmitted over many years, including the oral tradition.
	IE7.2.	Observe, illustrate, and analyze living organisms within local ecosystems as part of interconnected food webs, populations, and communities. [SI]
	IE7.2.b.	Provide examples of ecosystems of varying sizes and locations, including their biotic and abiotic components.
	IE7.2.c.	Conduct a field study to observe, record , and identify biotic and abiotic components of a local ecosystem.
	IE7.2.d.	Show respect for all forms of life when examining ecosystems.
	IE7.2.e.	Examine the biotic and abiotic components of distant ecosystems using photographs, videos, or online resources.
	IE7.2.f.	Choose and use appropriate instruments safely, effectively, and accurately to observe and illustrate biotic and abiotic components of ecosystems.
	IE7.2.g.	Compile and display ecological data to illustrate the various interactions that occur among biotic and abiotic components of ecosystems.
	IE7.2.I.	Provide examples of organizations in Canada that support scientific research related to ecosystems .



The Dynamic Nature of Ecosystems 7 Image: State of Ecosystems 1 Image: State of Ecosystems 1	7	IE7.2.	Observe, illustrate, and analyze living organisms within local ecosystems as part of interconnected food webs, populations, and communities. [SI]
		IE7.2.a.	Illustrate the ecological organization of life within the biosphere, using specific examples of species, populations, communities, ecosystems, and biomes.
		IE7.2.b.	Provide examples of ecosystems of varying sizes and locations, including their biotic and abiotic components.
		IE7.2.c.	Conduct a field study to observe, record , and identify biotic and abiotic components of a local ecosystem.
		IE7.2.d.	Show respect for all forms of life when examining ecosystems.
		IE7.2.f.	Choose and use appropriate instruments safely, effectively, and accurately to observe and illustrate biotic and abiotic components of ecosystems.
		IE7.2.g.	Compile and display ecological data to illustrate the various interactions that occur among biotic and abiotic components of ecosystems.
		IE7.3.i.	Identify and evaluate potential impacts on energy flow and the cycling of matter by the removal of one or more living organisms from a specific ecosystem.
		IE7.4.c.	Predict what a specific ecosystem based on characteristics of the area and long-term changes observed in similar ecosystems.



Ecosystem Biodiversity	7	IE7.4.	Analyze how ecosystems change in response to natural and human influences, and propose actions to reduce the impact of human behaviour on a specific ecosystem. [DM, CP]
		IE7.4.a.	Identify evidence of ecological succession in ecosystems, using the concepts of pioneer species, climax community, primary succession, and secondary succession, and by identifying changes in plant and animal life in the ecosystem.
		IE7.4.b.	Propose ecological questions to investigate arising from practical problems and issues .
	IE7.4.c. IE7.4.d. IE7.4.e. IE7.4.f. IE7.4.g.	IE7.4.c.	Predict what a specific ecosystem based on characteristics of the area and long-term changes observed in similar ecosystems.
		IE7.4.d.	Identify and refine questions and problems related to the effects of natural or human influences on a particular ecosystem.
		IE7.4.e.	Select and synthesize information from various sources to develop a response to specific questions related to natural or human influences on a particular ecosystem.
		IE7.4.f.	Propose a course of action or defend a given position on a local ecological issue or problem related to natural or human influences on a particular ecosystem, taking into account scientific, societal, technological, and environmental factors.
		IE7.4.g.	Be sensitive and responsible in maintaining a balance between human needs and a sustainable environment by considering both immediate and long- term effects of their course of action or stated position.



		IE7.4.h.	Provide specific examples to illustrate that scientific and technological activities related to ecosystems take place in a variety of individual or group settings, locally and globally, and by men and women from a variety of cultural backgrounds .
Geologic History of Earth 7	7	EC7.1.	Analyze societal and environmental impacts of historical and current catastrophic geological events, and scientific understanding of movements and forces within Earth's crust. [SI]
	E	EC7.1.a.	Trace the development of plate tectonics theory as an explanation for movement of Earth's lithosphere in light of new geological evidence, including knowledge of tectonic plates and movement at plate boundaries.
		EC7.1.b.	Provide examples of past theories and ideas, including cultural mythology, that explain geological phenomena such as volcanic activity, earthquakes, and mountain building.
		EC7.1.c.	Construct a visual representation of the composition of Earth, including the crust, upper and lower mantle, core, and inner core.
		EC7.1.d.	Create models or simulations of the processes of mountain formation and the folding and faulting of Earth's surface, including movements at diverging, converging, and transform plate boundaries.
		EC7.1.e.	Describe societal and environmental impacts of some catastrophic geological events, including earthquakes, tsunamis, and volcanic eruptions, which have occurred on or near Earth's surface and predict the impacts of future events.



Seafloor Spreading7		EC7.1.f.	Work cooperatively with group members to research catastrophic geological events and integrate individual findings into a chronological model or time scale of major events in Earth's geological history.
		EC7.1.g.	Organize data on the geographical and chronological distribution of earthquakes, tsunamis, and volcanic eruptions to determine patterns and trends in data and relationships among variables.
		EC7.1.h.	Explain the operation of tools scientists use to measure and describe the effects of catastrophic geological events, including earthquakes and volcanoes.
		EC7.1.i.	Provide examples of how science and technology affect self and community through understanding, predicting, and minimizing the effects of catastrophic geological events.
	7	EC7.1.	Analyze societal and environmental impacts of historical and current catastrophic geological events, and scientific understanding of movements and forces within Earth's crust. [SI]
		EC7.1.a.	Trace the development of plate tectonics theory as an explanation for movement of Earth's lithosphere in light of new geological evidence, including knowledge of tectonic plates and movement at plate boundaries.
		EC7.1.b.	Provide examples of past theories and ideas, including cultural mythology, that explain geological phenomena such as volcanic activity, earthquakes, and mountain building.
		EC7.1.c.	Construct a visual representation of the composition of Earth, including the crust, upper and lower mantle, core, and inner core.



	EC7.1.d.	Create models or simulations of the processes of mountain formation and the folding and faulting of Earth's surface, including movements at diverging, converging, and transform plate boundaries.	
		EC7.1.e.	Describe societal and environmental impacts of some catastrophic geological events, including earthquakes, tsunamis, and volcanic eruptions, which have occurred on or near Earth's surface and predict the impacts of future events.
		EC7.1.f.	Work cooperatively with group members to research catastrophic geological events and integrate individual findings into a chronological model or time scale of major events in Earth's geological history.
Maps of Ancient Lands 7		EC7.1.g.	Organize data on the geographical and chronological distribution of earthquakes, tsunamis, and volcanic eruptions to determine patterns and trends in data and relationships among variables.
		EC7.1.h.	Explain the operation of tools scientists use to measure and describe the effects of catastrophic geological events, including earthquakes and volcanoes.
		EC7.1.i.	Provide examples of how science and technology affect self and community through understanding, predicting, and minimizing the effects of catastrophic geological events.
	7	EC7.1.	Analyze societal and environmental impacts of historical and current catastrophic geological events, and scientific understanding of movements and forces within Earth's crust. [SI]
		EC7.1.a.	Trace the development of plate tectonics theory as an explanation for movement of Earth's lithosphere in light of new geological evidence, including knowledge of tectonic plates and movement at plate boundaries.



	EC7.1.b.	Provide examples of past theories and ideas, including cultural mythology, that explain geological phenomena such as volcanic activity, earthquakes, and mountain building.
	EC7.1.c.	Construct a visual representation of the composition of Earth, including the crust, upper and lower mantle, core, and inner core.
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	EC7.1.i.	Provide examples of how science and technology affect self and community through understanding, predicting, and minimizing the effects of catastrophic geological events .



Weathering and Erosion	7	EC7.3.	Investigate the characteristics and formation of the surface geology of Saskatchewan, including soil, and identify correlations between surface geology and past, present, and possible future land uses. [DM, SI]
		EC7.3.f.	Differentiate between weathering and erosion, and explain the role of water in each process.
		EC7.3.g.	Document the natural surface geological features of the local environment and provide explanations for the origin of those features.
		EC7.3.h.	Relate mechanical weathering processes to the formation of soils.
Human Impacts on Biodiversity	7	IE7.4.	Analyze how ecosystems change in response to natural and human influences, and propose actions to reduce the impact of human behaviour on a specific ecosystem. [DM, CP]
		IE7.4.a.	Identify evidence of ecological succession in ecosystems, using the concepts of pioneer species, climax community, primary succession, and secondary succession, and by identifying changes in plant and animal life in the ecosystem.
		IE7.4.b.	Propose ecological questions to investigate arising from practical problems and issues .
		IE7.4.c.	Predict what a specific ecosystem based on characteristics of the area and long-term changes observed in similar ecosystems.
		IE7.4.d.	Identify and refine questions and problems related to the effects of natural or human influences on a particular ecosystem.
		IE7.4.e.	Select and synthesize information from various sources to develop a response to specific questions related to natural or human influences on a particular ecosystem.



		IE7.4.f.	Propose a course of action or defend a given position on a local ecological issue or problem related to natural or human influences on a particular ecosystem, taking into account scientific, societal, technological, and environmental factors.
		IE7.4.g.	Be sensitive and responsible in maintaining a balance between human needs and a sustainable environment by considering both immediate and long- term effects of their course of action or stated position.
		IE7.4.h.	Provide specific examples to illustrate that scientific and technological activities related to ecosystems take place in a variety of individual or group settings, locally and globally, and by men and women from a variety of cultural backgrounds .
Earth's Early History 7	7	EC7.2.	Identify locations and processes used to extract Earth's geological resources and examine the impacts of those locations and processes on society and the environment. [SI, DM, CP]
		EC7.2.a.	Identify questions to investigate arising from practical problems and issues related to the study of Earth's geological resources
Ocean, Atmosphere and Biosphere Interactions	7	IE7.3.	Evaluate biogeochemical cycles as representations of energy flow and the cycling of matter through ecosystems. [CP, SI]
		IE7.3.a.	Illustrate how energy is supplied to and flows through a food web using the concept of ecological pyramids .
Energy Transfer	7	IE7.2.	Observe, illustrate, and analyze living organisms within local ecosystems as part of interconnected food webs, populations, and communities. [SI]
		IE7.2.h.	Identify strengths and weaknesses of different methods of collecting and displaying ecological data .



	IE7.2.i.	Classify organisms in a variety of ecosystems as producers, consumers, or decomposers and further classify consumers as herbivores, carnivores, or omnivores.	
		IE7.2.j.	Interpret interdependence within natural systems by constructing food chains and food webs to illustrate the interactions among producers, consumers, and decomposers in a particular ecosystem.
		IE7.3.	Evaluate biogeochemical cycles as representations of energy flow and the cycling of matter through ecosystems. [CP, SI]
		IE7.3.c.	Analyze the strengths and limitations of models in science generally, and then apply these criteria to evaluate the efficacy of a student model of a biogeochemical cycle.
		IE7.3.d.	Explain the role of decomposers in recycling matter in an ecosystem.
		IE7.3.e.	Describe examples of how scientists collect evidence, search for patterns and relationships in data, and propose explanations to further the development of scientific knowledge about energy and matter flow in ecosystems.
Pure Substances and Mixtures	7	MS7.1.	Distinguish between pure substances and mixtures using the particle model of matter. [SI, CP]
		MS7.1.a.	Examine a variety of objects and materials, and record qualitative physical properties of those objects in a chart or data table.
		MS7.1.b.	Describe the characteristics of pure substances, mechanical mixtures, and solutions.
		MS7.1.c.	Construct a graphic organizer for the classification of matter that includes mixtures, pure substances, elements, compounds, mechanical mixtures, and solutions.



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	MS7.1.d.	Classify common substances as pure substances, mechanical mixtures, or solutions.
	MS7.1.e.	Listen to and consider the ideas of classmates when classifying materials as pure substances or mixtures.
	MS7.1.f.	Create mechanical mixtures and solutions using common materials and compare the physical properties of the original materials and the resultant mixture or solution.
	MS7.1.g.	State the four main ideas of the particle model of matter.
	MS7.1.h.	Create models and/or physical representations that depict the nature of particles in pure substances, mechanical mixtures, and solutions according to the particle model of matter.
	MS7.1.i.	Analyze the usefulness of personally constructed representations of particles and the strengths and limitations of models in science generally.
	MS7.1.j.	Generate questions related to differences between mixtures and solutions and rephrase in a testable form .
	MS7.2.	Investigate methods of separating the components of mechanical mixtures and solutions, and analyze the impact of industrial and agricultural applications of those methods. [SI, TPS]
	MS7.2.a.	Describe methods used to separate the components of mechanical mixtures and solutions, including mechanical sorting, filtration, evaporation, distillation, magnetism, and chromatography.
	MS7.2.b.	Trace the historical development of a technology or process used to separate mixtures .



	MS7.2.c.	Describe common household examples of technologies that are used to separate components of mechanical mixtures or solutions.
	MS7.2.d.	Design and conduct an experiment to determine the effectiveness and/ or efficiency of one or more methods of separating mechanical mixtures and solutions.
	MS7.2.e.	Report the strengths and limitations of a chosen experimental design to determine the effectiveness and/or efficiency of one or more methods of separating mechanical mixtures and solutions.
	MS7.2.f.	Use tools and apparatus safely when conducting investigations into methods of separating mixtures.
	MS7.2.g.	Demonstrate knowledge of WHMIS standards by using proper techniques for handling and disposing of lab materials and following warning label symbols, including common household product symbols, when separating mixtures.
	MS7.2.h.	Describe the scientific principles underlying a past or present industrial technology designed to separate mixtures
	MS7.2.i.	Discuss intended and unintended consequences of a particular industrial or agricultural technology or process used for separating materials.
	MS7.2.j.	Use a technological problem-solving process to design, construct, and evaluate a prototype of a process or device for separating a mechanical mixture or solution.
	MS7.2.k.	Identify new questions and problems that arise from what was learned about solutions and mixtures , including questions that science cannot answer.



Scope Name	Grade	Standard	Description
Fission, Fusion, and 8 Radioactive Decay	8	OP8.4.	Evaluate the impact of electromagnetic radiation- based technologies on self and community. [CP, DM, SI]
		OP8.4.a.	Describe the characteristics of different types of electromagnetic radiation, including infrared, visible light, ultraviolet, X-rays, microwaves, and radio waves.
		OP8.4.b.	Compare properties of visible light to the properties of other types of electromagnetic radiation, including infrared, ultraviolet, X-rays, microwaves, and radio waves.
		OP8.4.c.	Provide examples of uses of instruments that emit or detect different types of electromagnetic radiation .
		OP8.4.d.	Analyze the design and function of a technology that incorporates electromagnetic radiation on the basis of student-identified criteria such as cost, usefulness, and impact on self, society, and the environment.
		OP8.4.e.	Defend a position on an issue or problem, identified through personal research, related to the impact of electromagnetic radiation-based technologies on self and community.
		OP8.4.f.	Identify new questions and problems that arise from what was learned about electromagnetic radiation .
What Are Cells? 8	8	CS8.1.	Analyze the characteristics of cells, and compare structural and functional characteristics of plant and animal cells. [SI]
		CS8.1.a.	Explain that the cell is a living system that exhibits all the characteristics of life including growth, movement, reaction to stimulus, and reproduction.
		CS8.1.b.	Categorize organisms as single-celled and multi-cellular.
		CS8.1.c.	Observe and describe how single-celled organisms take in food and move.
Human Vision	8	8 OP8.3.	Compare the nature and properties of human vision with optical devices and vision in other living organisms. [CP, SI]
		OP8.3.a.	Identify questions to investigate arising from practical problems and issues related to human vision .
		OP8.3.b.	Illustrate, using a geometrical ray diagram, how the human eye sees objects.



	OP8.3.c.	Compare the functional operation of the human eye to that of a camera or other optical instruments in focusing an image.	
		OP8.3.d.	Compare human vision with that of other vertebrates and invertebrates, including the function and design of the eye.
		OP8.3.e.	Explain how the human eye detects colour, and demonstrate that the ability to perceive colour may vary from person to person.
	OP8.3.f.	Explain how colours are produced, using both the additive and subtractive models of colour, and identify applications of the additive and subtractive models of colour in daily life, including the use of traditional dyes.	
		OP8.3.g.	Describe the operation of optical technologies that enhance human vision .
		CS8.4.b.	Show interest in science-related questions and issues by posing questions and defining practical problems related to the healthy functioning of the human body.
Human Body and Health	8	CS8.4.	Analyze how the interdependence of organ systems contributes to the healthy functioning of the human body. [CP, DM, SI]
		CS8.4.c.	Describe how various body systems work together to accomplish tasks such as eating, running, and sleeping.
		CS8.4.d.	Provide examples of how the body reacts to internal and external stimuli such as viruses, bacteria, alcohol, drugs, dust, and temperature changes.
		CS8.4.e.	Analyze how organ systems work together to obtain and transport nutrients and oxygen, and to remove wastes from the body.
		CS8.4.a.	Examine First Nations and Métis perspectives on the interdependence and connectedness of human body systems and the sacredness of life.



		CS8.4.f.	Analyze the impact of personal lifestyle choices on the functions and efficiency of the human respiratory, circulatory, digestive, excretory, and nervous systems.
		CS8.4.g.	Predict the impact of the failure or removal of one or more organs on the healthy functioning of the human body.
		CS8.4.i.	Select and synthesize information from various sources to illustrate examples of conflicting evidence regarding the ways in which we should maintain our body .
	CS8.4.k.	Suggest explanations for discrepancies in data related to variations in the heart rate, breathing rate, and/or blood pressure of the same individual during various levels of activity when an experiment is repeated.	
		CS8.4.j.	Design and carry out an experiment, including identifying and controlling major variables, to compare and contrast the heart rate, breathing rate, and/or blood pressure of an individual during various levels of activity.
Water On Earth 8	8	WS8.1.	Analyze the impact of natural and human- induced changes to the characteristics and distribution of water in local, regional, and national ecosystems. [CP, DM]
		WS8.1.a.	Construct visual representations of the world distribution of water, and the distribution of water in Saskatchewan, including watersheds, lakes, rivers, streams, river systems, wetlands, ground water, saline lakes, and riparian areas.
	WS8.1.b.	Compare physical characteristics of surface water features, such as lakes, rivers, streams, wetlands, and riparian areas.	



WS8.1.h.	Evaluate individual and group processes used in planning, problem solving, decision making, and completing a task related to studying threats to water systems, such as accepting various roles in a group, sharing responsibility for carrying out decisions, and seeking consensus before making decisions.
WS8.3.	Analyze natural factors and human practices that affect productivity and species distribution in marine and fresh water environments. [CP, DM, SI]
WS8.3.b.	Identify diverse examples of organisms in a variety of marine and freshwater ecosystems and explain how biodiversity is an indicator of ecosystem health.
WS8.3.c.	Identify factors that affect productivity and species distribution in aquatic environments .
WS8.3.d.	Research a student-selected aquatic species, describe the characteristics of its environment, identify factors that could affect its productivity, and suggest methods of ensuring long-term viability of the species.
WS8.3.e.	Measure factors that provide indicators of water quality, such as temperature, turbidity, dissolved oxygen content, presence of nitrates or phosphates, and macroinvertebrates, from a variety of samples of water.
WS8.3.f.	Interpret patterns and trends in water quality data, and infer and explain relationships among the variables.
WS8.3.g.	Identify strengths and weaknesses of different methods of collecting and displaying data about water quality.
WS8.3.h.	Describe examples of technologies used to assess water quality and how those technologies have changed over time.



		WS8.3.i.	Provide examples of how individuals and public and private Canadian institutions contribute to the sustainable stewardship of water through traditional knowledge and scientific and technological research and endeavours related to aquatic environments and identify possible
			careers related to the study and stewardship of water.
Osmosis and Diffusion 8		WS8.1.c.	Examine the significance of water to First Nations and Métis people of Saskatchewan, including water as an essential element of life, transportation, water quality, fishing practices, and treaty rights regarding fishing.
		WS8.1.g.	Research a specific human practice or technology that may pose a threat to surface and/or groundwater systems in Saskatchewan and explain how different groups in society may have conflicting needs and desires in relation to the practice or technology and how those decisions or actions of different stakeholders may or may not be addressed by scientific or technological knowledge.
		WS8.3.a.	Examine the ways in which First Nations and Métis people traditionally valued, depended upon, and cared for aquatic wildlife and plants in Saskatchewan and Canada.
	8	CS8.1.	Analyze the characteristics of cells, and compare structural and functional characteristics of plant and animal cells. [SI]
		CS8.1.f.	Model the processes of diffusion and osmosis to demonstrate how gases and water move into and out of plant and animal cells.
Light and Sound Waves	8	OP8.4.	Evaluate the impact of electromagnetic radiation-based technologies on self and community. [CP, DM, SI]



		OP8.4.a.	Describe the characteristics of different types of electromagnetic radiation, including infrared, visible light, ultraviolet, X-rays, microwaves, and radio waves.
		OP8.4.b.	Compare properties of visible light to the properties of other types of electromagnetic radiation, including infrared, ultraviolet, X-rays, microwaves, and radio waves.
		OP8.4.c.	Provide examples of uses of instruments that emit or detect different types of electromagnetic radiation .
		OP8.4.d.	Analyze the design and function of a technology that incorporates electromagnetic radiation on the basis of student-identified criteria such as cost, usefulness, and impact on self, society, and the environment.
		OP8.4.e.	Defend a position on an issue or problem, identified through personal research, related to the impact of electromagnetic radiation-based technologies on self and community.
		OP8.4.f.	Identify new questions and problems that arise from what was learned about electromagnetic radiation .
Light 8	8 OF	OP8.1.	Identify and describe, through experimentation, sources and properties of visible light including: rectilinear propagation; reflection; refraction. [SI]
		OP8.1.a.	Classify natural and artificial sources of light as incandescence or fluorescence .
		OP8.1.b.	Demonstrate that light is a form of energy, that light can be separated into a visible spectrum, and that light travels in straight lines in a uniform transparent medium.
	OP8.1.c.	Investigate the properties of shadows, including umbra and penumbra formation, and demonstrate how the existence of shadows provides evidence that light travels in straight lines.	



	OP8.1.d.	Select appropriate methods and tools and use them safely when collecting data and information to investigate properties of visible light.
	OP8.1.e.	Estimate and measure angles of incidence and angles of reflection of visible light and determine the quantitative relationship between the angle of incidence and the angle of reflection.
	OP8.1.f.	Investigate characteristics and applications of specular and diffuse reflection, including the absorption of light by surfaces of different colour and made of different materials.
	OP8.1.g.	Describe applications of the laws of reflection in everyday life .
	OP8.1.h.	Describe qualitatively how visible light is refracted when passing from one substance to a substance of a different refractive index.
	OP8.1.i.	Predict how light will refract when passing into transparent media with different refractive indices and conduct an experiment to confirm or refute that prediction.
	OP8.1.j.	State a conclusion that explains how evidence gathered supports or refutes a prediction related to the refraction of light through media with different refractive indices.
	OP8.2.	Explore properties and applications of optics-related technologies, including concave and convex mirrors and lenses. [SI, TPS]
	OP8.2.a.	Investigate to determine how light interacts with transparent, translucent, and opaque materials.
	OP8.2.b.	Investigate to determine how light interacts with concave and convex mirrors and lenses, including the formation of real and virtual images.



	OP8.2.c.	Predict and verify the effects of changes in lens position on the size and location of images produced by a convex lens and/or mirror.	
		OP8.2.d.	Receive, understand, and act on the ideas of others when trying other lenses or mirror combinations to obtain various light patterns.
		OP8.2.e.	Draw geometric ray diagrams to illustrate how light travels within optical devices such as pin-hole cameras, single lens reflex cameras, telescopes, microscopes, and periscopes.
	OP8.2.f.	Use a technological problem-solving process to design and construct a prototype of an optical device to address a student-defined problem based on findings related to an understanding of geometric optics.	
		OP8.2.g.	Work collaboratively and safely with others to identify and correct practical problems in the way a prototype of an optical device functions.
		OP8.2.h.	Provide examples of optics-related technologies that have enabled scientific research .
Particle Movement	Particle Movement 8	FD8.1.	Investigate and represent the density of solids, liquids, and gases based on the particle theory of matter. [SI, TPS]
		FD8.1.a.	Illustrate the relationship between mass, volume, and density of solids, liquids, and gases using the particle theory of matter.
		FD8.1.b.	Design and carry out processes, including the water displacement method, to determine the density of various regularly shaped and irregularly shaped materials.
		FD8.1.c.	Use instruments safely, effectively, and accurately for collecting data about the density of solids, liquids, and gases.



	FD8.1.d.	Measure the mass and volume of a variety of objects, record the data in tabular form, and display the data graphically.
	FD8.1.e.	Value accuracy, precision, and honesty when gathering data about the density of objects.
	FD8.1.f.	Interpolate or extrapolate from student- constructed graphs of density to determine the mass or volume of a substance.
	FD8.1.g.	Calculate the density of various regularly shaped materials using the formula d=m/v and using units of g/mL or g/cm ³ .
	FD8.1.h.	Compare the densities of common substances to the density of water and discuss practical applications that are based on differing densities.
	FD8.1.i.	Identify the effects of changes in temperature on the density of solids, liquids, and gases and explain the results using the particle theory of matter.
	FD8.1.j.	Describe situations in daily life where we see evidence that the density of substances changes naturally .
	FD8.2.	Examine the effects of forces in and on objects in fluids, including the buoyant force. [CP, SI, TPS]
	FD8.2.a.	Identify questions to investigate arising from practical problems and issues involving floating, sinking, and buoyancy .
	FD8.2.b.	Examine contributions of people from various cultures to understanding the principles of buoyancy, including Archimedes Principle, and the development of watercraft such as canoes and kayaks.
	FD8.2.c.	Explain the concept of force and provide examples of different types of contact and non-contact forces.



	FD8.2.d.	Illustrate, using force diagrams, the movement of objects in fluids in terms of balanced and unbalanced forces acting on the objects.
	FD8.2.e.	Use a spring scale to determine the relationship between mass and weight for various substances.
	FD8.2.f.	Express the quantitative relationship between pressure, force, and area in fluids.
	FD8.2.g.	Conduct a fair test to identify which factors determine whether a given object will float or sink, and discuss reasons why scientists control some variables when conducting a fair test.
	FD8.2.h.	Use a technological problem-solving process to design, construct, and evaluate a prototype of an object that floats and can carry the greatest amount of cargo.
	FD8.2.i.	Explain how buoyancy is controlled in nature .
	FD8.2.k.	Explain the operation of technologies whose development is based on scientific understanding of the properties of fluids .
	FD8.2.j.	Compare different fluids to determine how they alter the buoyant force on a given object.
	FD8.2.I.	Analyze designs of traditional and contemporary watercraft with respect to the principles of buoyancy.
	FD8.3.	Investigate and describe physical properties of fluids , including viscosity and compressibility. [SI]
	FD8.3.a.	Design and conduct an experiment to compare the viscosity of various fluids and identify variables relevant to the investigation.
	FD8.3.b.	Use appropriate vocabulary related to the study of fluids, including fluid, viscosity, buoyancy, pressure, compressibility, hydraulic, pneumatic, and density.



	FD8.3.c.	Demonstrate knowledge of Workplace Hazardous Materials Information System standards by using proper techniques for handling and disposing of lab materials and by explaining the WHMIS labelling system.
	FD8.3.d.	Investigate the relationship between the temperature and viscosity of a liquid, controlling the major variables.
	FD8.3.e.	Use a temperature measuring technology, such as a temperature probe, effectively and accurately for collecting data to investigate the relationship between temperature and viscosity of a liquid.
	FD8.3.f.	Identify products in which viscosity is an important property and evaluate different brands of those products using student- developed criteria.
	FD8.3.g.	Predict and investigate the effect of applying external pressure to the behaviour of liquids and gases .
	FD8.3.h.	Describe situations in which pressure can be increased or decreased by altering surface area .
	FD8.3.i.	Use the particle theory of matter to explain the differences in compressibility between liquids and gases.
	FD8.3.j.	Explore and explain qualitatively the relationship between pressure, volume, and temperature when liquids and gases are compressed or heated.
	FD8.3.k.	Show concern for safety of self and others when planning, carrying out, and reviewing procedures involving heating and compressing liquids and gases.
	FD8.4.	Identify and interpret the scientific principles underlying the functioning of natural and constructed fluid systems. [CP, SI]


	FD8.4.a.	Describe how hydraulic or pneumatic pressure can be used to create a mechanical advantage in a simple mechanical device	
	FD8.4.b.	Compare natural hydraulic and pneumatic fluid systems and identify advantages and disadvantages of each, using student- identified criteria such as cost and impact on society and the environment.	
		FD8.4.c.	Use a technological problem-solving process to design, construct, and evaluate a prototype of a device that models the operation of a natural or constructed fluid system.
		FD8.4.d.	Work collaboratively to identify and correct problems in the way a prototype of a natural or constructed fluid system functions.
		FD8.4.e.	Apply given criteria for evaluating evidence and sources of information by testing a prototype of a natural or constructed fluid system in a variety of situations to ensure that the results were not due to chance.
		FD8.4.f.	Describe and explain the role of collecting evidence, finding relationships, proposing explanations, and imagination in the development of scientific knowledge related to fluids and fluid systems.
		FD8.4.g.	Provide examples of Canadian contributions to the science and technology of fluids .
Microscopes	8	CS8.2.	Demonstrate proficiency in the use of a compound light microscope to observe plant and animal cells. [SI]
	C	CS8.2.a.	Identify the parts of a compound light microscope, describe their functions, and describe how to use a compound light microscope correctly and safely.
		CS8.2.b.	Prepare samples of plant and animal cells for viewing by wet mounting and staining when necessary.



		CS8.2.c.	Calculate the magnification of a microscope, and estimate and determine the size of objects viewed through a microscope.
		CS8.2.d.	Use a microscope effectively and accurately to observe differences in structure between plant and animal cells and draw labelled diagrams of what is seen.
		CS8.2.e.	Show concern for self and others by safely planning and carrying out activities involving microscopes, slides, and biological material.
Mitosis	8	CS8.1.	Analyze the characteristics of cells, and compare structural and functional characteristics of plant and animal cells. [SI]
		CS8.1.d.	Explain how growth and reproduction of living organisms depends on cell division.
		CS8.1.e.	Design and carry out an experiment to demonstrate the function of selectively permeable membranes in cells.
Gas Laws	8	FD8.1.	Investigate and represent the density of solids, liquids, and gases based on the particle theory of matter. [SI, TPS]
		FD8.1.a.	Illustrate the relationship between mass, volume, and density of solids, liquids, and gases using the particle theory of matter.
		FD8.1.b.	Design and carry out processes, including the water displacement method, to determine the density of various regularly shaped and irregularly shaped materials.
		FD8.1.c.	Use instruments safely, effectively, and accurately for collecting data about the density of solids, liquids, and gases.
		FD8.1.d.	Measure the mass and volume of a variety of objects, record the data in tabular form, and display the data graphically.
		FD8.1.e.	Value accuracy, precision, and honesty when gathering data about the density of objects.



	FD8.1.f.	Interpolate or extrapolate from student- constructed graphs of density to determine the mass or volume of a substance.
	FD8.1.h.	Compare the densities of common substances to the density of water and discuss practical applications that are based on differing densities.
	FD8.1.g.	Calculate the density of various regularly shaped materials using the formula d=m/v and using units of g/mL or g/cm ³ .
	FD8.1.i.	Identify the effects of changes in temperature on the density of solids, liquids, and gases and explain the results using the particle theory of matter.
	FD8.1.j.	Describe situations in daily life where we see evidence that the density of substances changes naturally .
	FD8.2.a.	Identify questions to investigate arising from practical problems and issues involving floating, sinking, and buoyancy .
	FD8.2.	Examine the effects of forces in and on objects in fluids, including the buoyant force. [CP, SI, TPS]
	FD8.2.b.	Examine contributions of people from various cultures to understanding the principles of buoyancy, including Archimedes Principle, and the development of watercraft such as canoes and kayaks.
	FD8.2.d.	Illustrate, using force diagrams, the movement of objects in fluids in terms of balanced and unbalanced forces acting on the objects.
	FD8.2.c.	Explain the concept of force and provide examples of different types of contact and non-contact forces.
	FD8.2.e.	Use a spring scale to determine the relationship between mass and weight for various substances.



	FD8.2.f.	Express the quantitative relationship between pressure, force, and area in fluids.
	FD8.2.g.	Conduct a fair test to identify which factors determine whether a given object will float or sink, and discuss reasons why scientists control some variables when conducting a fair test.
	FD8.2.h.	Use a technological problem-solving process to design, construct, and evaluate a prototype of an object that floats and can carry the greatest amount of cargo.
	FD8.2.i.	Explain how buoyancy is controlled in nature .
	FD8.2.j.	Compare different fluids to determine how they alter the buoyant force on a given object.
	FD8.2.k.	Explain the operation of technologies whose development is based on scientific understanding of the properties of fluids .
	FD8.2.I.	Analyze designs of traditional and contemporary watercraft with respect to the principles of buoyancy.
	FD8.3.	Investigate and describe physical properties of fluids , including viscosity and compressibility. [SI]
	FD8.3.a.	Design and conduct an experiment to compare the viscosity of various fluids and identify variables relevant to the investigation.
	FD8.3.b.	Use appropriate vocabulary related to the study of fluids, including fluid, viscosity, buoyancy, pressure, compressibility, hydraulic, pneumatic, and density.
	FD8.3.c.	Demonstrate knowledge of Workplace Hazardous Materials Information System standards by using proper techniques for handling and disposing of lab materials and by explaining the WHMIS labelling system.



	FD8.3.d.	Investigate the relationship between the temperature and viscosity of a liquid, controlling the major variables.
	FD8.3.e.	Use a temperature measuring technology, such as a temperature probe, effectively and accurately for collecting data to investigate the relationship between temperature and viscosity of a liquid.
	FD8.3.f.	Identify products in which viscosity is an important property and evaluate different brands of those products using student- developed criteria.
	FD8.3.g.	Predict and investigate the effect of applying external pressure to the behaviour of liquids and gases .
	FD8.3.h.	Describe situations in which pressure can be increased or decreased by altering surface area .
	FD8.3.i.	Use the particle theory of matter to explain the differences in compressibility between liquids and gases.
	FD8.3.j.	Explore and explain qualitatively the relationship between pressure, volume, and temperature when liquids and gases are compressed or heated.
	FD8.3.k.	Show concern for safety of self and others when planning, carrying out, and reviewing procedures involving heating and compressing liquids and gases.
	FD8.4.	Identify and interpret the scientific principles underlying the functioning of natural and constructed fluid systems. [CP, SI]
	FD8.4.a.	Describe how hydraulic or pneumatic pressure can be used to create a mechanical advantage in a simple mechanical device



		FD8.4.b.	Compare natural hydraulic and pneumatic fluid systems and identify advantages and disadvantages of each, using student- identified criteria such as cost and impact on society and the environment.
		FD8.4.c.	Use a technological problem-solving process to design, construct, and evaluate a prototype of a device that models the operation of a natural or constructed fluid system.
		FD8.4.d.	Work collaboratively to identify and correct problems in the way a prototype of a natural or constructed fluid system functions.
		FD8.4.e.	Apply given criteria for evaluating evidence and sources of information by testing a prototype of a natural or constructed fluid system in a variety of situations to ensure that the results were not due to chance.
		FD8.4.f.	Describe and explain the role of collecting evidence, finding relationships, proposing explanations, and imagination in the development of scientific knowledge related to fluids and fluid systems.
		FD8.4.g.	Provide examples of Canadian contributions to the science and technology of fluids .
Properties of Visible Light	8	OP8.1.	Identify and describe, through experimentation, sources and properties of visible light including: rectilinear propagation; reflection; refraction. [SI]
	-	OP8.1.a.	Classify natural and artificial sources of light as incandescence or fluorescence .
		OP8.1.b.	Demonstrate that light is a form of energy, that light can be separated into a visible spectrum, and that light travels in straight lines in a uniform transparent medium.
		OP8.1.c.	Investigate the properties of shadows, including umbra and penumbra formation, and demonstrate how the existence of shadows provides evidence that light travels in straight lines.



	OP8.1.d.	Select appropriate methods and tools and use them safely when collecting data and information to investigate properties of visible light.
	OP8.1.e.	Estimate and measure angles of incidence and angles of reflection of visible light and determine the quantitative relationship between the angle of incidence and the angle of reflection.
	OP8.1.f.	Investigate characteristics and applications of specular and diffuse reflection, including the absorption of light by surfaces of different colour and made of different materials.
	OP8.1.g.	Describe applications of the laws of reflection in everyday life .
	OP8.1.h.	Describe qualitatively how visible light is refracted when passing from one substance to a substance of a different refractive index.
	OP8.1.i.	Predict how light will refract when passing into transparent media with different refractive indices and conduct an experiment to confirm or refute that prediction.
	OP8.1.j.	State a conclusion that explains how evidence gathered supports or refutes a prediction related to the refraction of light through media with different refractive indices.
	OP8.2.	Explore properties and applications of optics-related technologies, including concave and convex mirrors and lenses. [SI, TPS]
	OP8.2.a.	Investigate to determine how light interacts with transparent, translucent, and opaque materials.
	OP8.2.b.	Investigate to determine how light interacts with concave and convex mirrors and lenses, including the formation of real and virtual images.



		OP8.2.c.	Predict and verify the effects of changes in lens position on the size and location of images produced by a convex lens and/or mirror.
		OP8.2.d.	Receive, understand, and act on the ideas of others when trying other lenses or mirror combinations to obtain various light patterns.
		OP8.2.e.	Draw geometric ray diagrams to illustrate how light travels within optical devices such as pin-hole cameras, single lens reflex cameras, telescopes, microscopes, and periscopes.
		OP8.2.f.	Use a technological problem-solving process to design and construct a prototype of an optical device to address a student-defined problem based on findings related to an understanding of geometric optics.
		OP8.2.g.	Work collaboratively and safely with others to identify and correct practical problems in the way a prototype of an optical device functions.
		OP8.2.h.	Provide examples of optics-related technologies that have enabled scientific research .
Anatomy of a Cell	8	CS8.1.	Analyze the characteristics of cells, and compare structural and functional characteristics of plant and animal cells. [SI]
		CS8.1.e.	Design and carry out an experiment to demonstrate the function of selectively permeable membranes in cells.
		CS8.1.g.	Observe and identify cell structures and identify which are found in plant cells and which are found in animal cells.
		CS8.1.h.	Explain the function of cell structures , including how each structure contributes to the health of plant and animal cells.



		CS8.1.i.	Use appropriate scientific terminology to communicate plans, ideas, and results related to the study of plant and animal cells.
		CS8.1.j.	Work cooperatively with team members to develop and carry out a plan to construct a representation of the structures and functions of plant and animal cells.
		CS8.1.k.	Analyze the strengths and weaknesses of various representations of the structure and function of plant and animal cells.
Bodies and Systems	8	CS8.3.	Distinguish structural and functional relationships among cells, tissues, organs, and organ systems in humans and how this knowledge is important to various careers. [CP, SI]
		CS8.3.a.	Pose questions about the composition of the human body such as "What are humans made of?".
		CS8.3.b.	Research various ideas and theories, past and present, used to explain the composition of the human body .
	CS8.3.c. CS8.3.d. CS8.3.e. CS8.3.f. CS8.3.f.	CS8.3.c.	Analyze why cells and tissues are specialized in multi-cellular organisms.
		CS8.3.d.	Describe the function and provide examples of the four major types of tissue found in humans .
		CS8.3.e.	Construct a representation of the relationships among cells, tissues, organs, and organ systems in humans using examples from the respiratory, circulatory, digestive, excretory, and nervous systems.
		CS8.3.f.	Relate the needs and functions of various cells and organs to the needs and functions of the human organism as a whole.
		CS8.3.g.	Summarize the main points of modern cell theory and identify the contributions of men and women, past and present, to the development of the theory.



		CS8.3.h.	Describe examples of science- and technology-based careers in Saskatchewan that require an understanding of cells and human body systems.
		CS8.4.h.	Discuss personal and societal ethical issues related to the use of various technologies that support or replace ailing body systems.
The Water Cycle	8	WS8.1.	Analyze the impact of natural and human- induced changes to the characteristics and distribution of water in local, regional, and national ecosystems. [CP, DM]
		WS8.1.d.	Apply the concept of systems as a tool for interpreting the structure and interactions of water systems by constructing representations of systems such as the water cycle, watersheds, and continental drainage basins and showing interrelationships between parts of the system.
		WS8.1.e.	Construct a written, visual, or dramatic representation of the water cycle, including showing or explaining how a single particle of water can travel through the cycle over extended periods of time.
Oceans' Influence on Weather and Climate	8	WS8.2.	Examine how wind, water, and ice have shaped and continue to shape the Canadian landscape. [DM, SI]
		WS8.2.a.	Explain how the processes of weathering, erosion, and deposition result from water movement and wave action, including how waves and tides are generated and how they interact with shorelines.
		WS8.2.b.	Plan and conduct a simulation to demonstrate how temperature differences cause water currents.
		WS8.2.d.	Describe how the interactions of ocean currents, winds, and regional climates shape local, regional, national, and global environments.



		WS8.2.e.	Critique the design and function of technologies designed to minimize damage due to waves and tides in oceans and in-land water bodies.
		WS8.2.f.	Create a written, visual, physical, or dramatic representation of the processes that lead to the development of rivers, lakes, continental drainage systems, and ocean basins, including glaciation, continental drift, erosion, and volcanic action.
		WS8.2.g.	Relate factors that affect glacier formation and reduction and their effects on the environment to the formation of glacial landforms in Saskatchewan .
		WS8.2.h.	Identify factors that affect polar icecap formation and reduction and their effects on the environment, including possible changes to ocean currents and climate patterns.
		WS8.2.i.	Propose new questions and problems for future study that arise from the study of the effects of wind, water, and ice on the landscape .
Human Activities and Global Climate Change	8	WS8.1.	Analyze the impact of natural and human- induced changes to the characteristics and distribution of water in local, regional, and national ecosystems. [CP, DM]
		WS8.1.f.	Identify possible personal, societal, economic, and environmental consequences of natural changes and human practices and technologies that pose threats to surface and/or ground water systems in Saskatchewan .
		WS8.2.c.	Explain the meaning and significance of the forces that shape the landscape to First Nations and Métis people.



Responsible Management of Natural Resources	8 WS8.1. WS8.1.f.	WS8.1.	Analyze the impact of natural and human- induced changes to the characteristics and distribution of water in local, regional, and national ecosystems. [CP, DM]
		Identify possible personal, societal, economic, and environmental consequences of natural changes and human practices and technologies that pose threats to surface and/or ground water systems in Saskatchewan.	



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