

## Classes & Evening Programs

## Standards Charts

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The Audubon Center of the North Woods has aligned our classes and evening programs with the Minnesota Department of Education's Academic Standards. Because a majority of our participants are in grades K-8, we are currently focusing on these grades. Specifically, we have aligned our classes and evening programs with Social Studies, Science (2009), and Language Arts standards. Our classes and evening programs can also be used to meet other academic standards and we will continue working on this. Further, many of our classes are also appropriate and can easily be adapted for high school students. We are working on adapting our classes for to align them with 9-12 Academic Standards. Several charts listed below have been created to show how our classes and evening program align with and help meet Minnesota's K-8 Academic Standards for Social Studies, Science (2009), and Language Arts:

- Classes and Evening Program Science Standards grades K-3
- Classes Science Standards grades K-8
- Evening Program Science Standards grades 4-8
- Language Arts Standards grades K-8
- Social Studies Standards grades 4-8

Classes are listed on the top of each chart, and the standards that classes meet are listed on the left side, with labels to denote if the class includes a particular standard. If every aspect of the standard is discussed thoroughly in class, it is labeled with an M, for meets. If a standard is mentioned in class and it does not go into too much detail or does not include all aspects of it, it is marked with a C, for covers. If a class does not meet any standards for that particular grade, the class is labeled with a \*.

### Science Standards for Classes and Evening Programs Grades K-3

Key: C: Covers the standard

M: Meets the standard

Grade	Strand	Substrand	Standard Understand that	Code	Benchmark	Animal Habitat	To Be a Tree	Raptors: Through Stories	Raptors: Hunting from on High	Creepy Crawly Creatures	A Bug's Life
К	4. Life Science	Structure and     Function in Living     Systems	Living things are diverse with many different observable characteristics.	0.4.1.1.1	Observe and compare plants and animals			M		M	M
				0.4.1.1.2	Identify the external parts of a variety of plants and animals including humans.			M	M	С	M
1	1.Life Science	Structure and     Function in Living     Systems.	Living things are diverse with many different observable characteristics.	1.4.1.1.1	Describe and sort animals into groups in many ways, according to their physical characteristics and behaviors.	С		M	M	С	С
		2.Interdependence Among Living Systems	Natural systems have many components that interact to maintain the living system.	1.4.2.1.1	Recognize that animals need space, water, food, shelter and air.	М				С	С

				1.4.2.1.2	Describe ways in which an animal's habitat provides for its basic needs.	M			С	С
		3. Evolution in Living Systems	Plants and animals     undergo a series of orderly     changes during their life     cycles.	1.4.3.1.1	Demonstrate an understanding that animals pass through life cycles that include a beginning, development into adults, reproduction and eventually death.	С				M
				1.4.3.1.2	Recognize that animals pass through the same life cycle stages as their parents.	С				M
2	4. Life Science	Structure and     Function in Living     Systems	Living things are diverse with many different observable characteristics.	2.4.1.1.1	Describe and sort plants into groups in many ways, according to their physical characteristics and behaviors.		С			
2		2. Interdependence Among Living Systems	1. Natural systems have many components that interact to maintain the system	2.4.2.1.1	Recognize that plants need space, water, nutrients and air, and that they fulfill these needs in different ways.	M	С			

2		3. Evolution in Living Systems	1. Plants and animals undergo a series of orderly changes during their life cycles.	2.4.3.1.1	Describe the characteristics of plants at different stages of their life cycles.		С			
3	4. Life Science	Structure and     Function in Living     Systems	1. Living things are diverse with many different characteristics that enable them to grow, reproduce and survive.	3.4.1.1.1	Compare how the different structures of plants and animals serve various functions of growth, survival and reproduction.	M	M	M	M	M
				3.4.1.1.2	Identify common groups of plants and animals using observable physical characteristics, structures and behaviors.		М	М	М	М

#### **Science Standards for Classes Grades 4-8**

**Grade 4 Science Standards** 

Key: C: Covers the standard

M: Meets the standard

\*: does not meet grade 4 science standards

Strand	Substrand	Standard	Code	Benchmark																								*			
		Understand that					*B:		*Cre	*	Di			*Fre			*	*		9	orci	7. 0.	2	S		S	nS I e a l	: :  ∃			201
					*	* Y	*Birds and Bird Banding	* =	Creepy Crawly Creatures	Cross Country Skiing	Dirt Rocks and Worms	Ene	Fore	*Freezin' Our Feathers Off	Leave it to Beaver	Maple Syruping	Minnesota Mammals	*Nature Journaling	<u>o</u>	01	Porcupine Quill Embroidery	Reading the Landscape	Re	Skywalk High Ropes	Snc	Stream Superheroes	Survivor: Northwoods	The forest in the Fall	Twines from Plants	Wetlands	Win
					'A bug's	ima	าd Bi	Canoeing	Craw	Cour	cks a	rgy F	est E	Our C	it to	ile Sy	sota	re Jc	Ojibwe	ente	Ouil	the	cycle	K Hi	wsh	dnS (	r: No	est i	s fro	Wetlands	ter T
					s Life	Animal Signs	rd Ba	*Canoeing	\ Cr	itry S	nd W	Energy For Life	Forest Ecology	Feat	t to Beav	/rupi	Man	urna	Hike ,	Orienteering	"Predator/Prey pine Quill Embr	Land	Recycled Art	gh Ro	Snowshoeing	erhe	orthw	n the	m Pl	nds	Winter Tree ID
					Ü	SI	andir	=	eatu	Skiing	orm/	fe	37	hers	ver	ng	nmal	aling	(	JQ E	ey broid	scap	t	pes	œ	roes	) 000 1	e Fall	ants	5	
							9		res	J G	S			Off			S			,	erv	ě					S			, ou	2
1. The		1. Engineers	4.1.2.1.1	Describe the positive								М						(	С				С								
Nature of	of	design, create and		and negative impacts																											
Science and	Engineering	develop		that the designed world																											
Engineering		structures,		has on the natural																											
		processes and		world as more and																											
		systems that are		more engineered																											
		intended to		products and services																											
		improve society		are created and used.																											
		and may make																													
		humans more																													
		productive.																													
		2. Engineering	4.1.2.2.1	Identify and investigate								М																			
		design is the		a design solution and																											
		process of		describe how it was																											
		identifying		used to solve an																											
		problems,		everyday problem.																											
		developing	4.1.2.2.2	Generate ideas and																						(	;				
		multiple solutions,		possible constraints for																											
		selecting the best		solving a problem																											
		possible solution,		through engineering																											
		and building the product.		design.																											
				Test and evaluate								С		$\dagger$												(	;				$\prod$
				solutions, considering																											
				advantages and																											
				disadvantages of the																											
				engineering solution,																											
				and communicate the																											
				results effectively.																											
									1														l			!_		<u> </u>			

2. Physical Science	1. Matter	1. Objects have observable properties that can be measured.	4.2.1.1.1	Measure temperature, volume, weight and length using appropriate tools and units.						M	С									
2. Physical Science	1. Matter	2. Solids, liquids and gases are states of matter that have unique	4.2.1.2.1	Distinguish between solids, liquids and gases in terms of shape and volume.						M										
		properties.	4.2.1.2.2	Describe how the states of matter change as a result of heating and cooling.						М	M	1		С						
	3. Energy	1. Energy appears in different forms, including heat and electromagnetism.	4.2.3.1.1	Describe the transfer of heat energy when a warm and a cool object are touching or placed near each other.						М							С			
			4.2.3.1.2	Describe how magnets can repel or attract each other and how they attract certain metal objects.									N							
			4.2.3.1.3	Compare materials that are conductors and insulators of heat and/or electricity.													С			
		2. Energy can be transformed within a system or transferred to other systems or the environment.	4.2.3.2.1	Identify several ways to generate heat energy.													М			
and Space	1. Earth Structure and Processes	3. Rocks are Earth materials that may vary in composition.	4.3.1.3.1	Recognize that rocks may be uniform or made of mixtures of different minerals.			ľ	VI	С									С		С
			4.3.1.3.2	Describe and classify minerals based on their physical properties.			ľ	M												

	Interdepen -dence Within the Earth System	3. Water circulates through the Earth's crust, oceans and atmosphere in what is known as the water cycle.	4.3.2.3.1	Identify where water collects on Earth, including atmosphere, ground and surface water, and describe how water moves through the Earth system using the processes of evaporation, condensation and precipitation.					С							С	
and Space Science	Interactions with Earth Systems	1. In order to improve their existence, humans interact with and influence Earth systems.		Describe how the methods people utilize to obtain and use water in their homes and communities can affect water supply and quality.											С	С	

Grade 5 Science Standards

Key: C: Covers the standard

M: Meets the standard

\*: Does not meet grade 5 standards

Strand	Substrand	Standard	Code	Benchmark																								*			_	
		Understand that			A bug's Life	Animal Signs	Birds and Bird Banding	*Cimbing Wall	Creepy Crawly Creatures	*Cross Country Skiing	Dirt, Rocks and Worms	Energy for Life	Forest Ecology	Freezin' Our Feathers Off	Leave it to Beaver	Maple Syruping	Minnesota Mammals	*Nature Journaling	*Orienteering	Porcupine Quill Embroidery	Predatory/Prey	Reading the Landscape	Recycled Art	*Skywalk High Ropes	*Snowshoeing	Stream Superhernes	Survivor Northwoods	The Forest in the Fall	Twines from Plants	Wetlands	Wolves of the North Woods	Winter Tree ID
1. The	1. The	1. Science is a way	5.1.1.1.3	Understand that		С																										
		of knowing about		different explanations																												i l
Science and		the natural world, is done by		for the same observations usually																												i l
Engineering		is done by individuals and		lead to making more																												ł I
		groups, and is		observations and																												ł I
		characterized by		trying to resolve the																												i l
		empirical criteria,		differences.																												i l
		logical argument and skeptical																														ł I
		review.																														ł I
		2. Scientific inquiry		Generate a scientific										С											С							
		requires		question and plan an																												i
		identification of assumptions, use		appropriate scientific investigation, such as																												i l
		of critical and		systematic																												i
		logical thinking,		observations, field																												i l
		and consideration		studies, open-ended																												ł l
		of alternative		exploration or																												i l
		explanations.		controlled experiments to answer																												i l
				the question.																												ł l
				Identify and collect		M	С							М											С							
				relevant evidence,																												i l
				make systematic																												ł l
				observations and accurate																												i l
				measurements, and																												
				identify variables in a																												
				scientific investigation.																												

	Interactions Among Science, Technology Engineering	2. Men and women throughout the history of all cultures, including Minnesota American Indian tribes and communities, have been involved in engineering design and scientific inquiry.	5.1.3.2.1	Describe how science and engineering influence and are influenced by local traditions and beliefs.									С	С	С						
		4. Tools and mathematics help scientists and engineers see	5.1.3.4.1	Use appropriate tools and techniques in gathering, analyzing and interpreting data.	M					M	С								C		
		more, measure more accurately, and do things that they could not otherwise accomplish.	5.1.3.4.2	Create and analyze different kinds of maps of the student's community and of Minnesota.						M			С								
Science	1. Earth Structure and Processes	2. The surface of the Earth changes. Some changes are due to slow processes and some changes are	5.3.1.2.1	Explain how, over time, rocks weather and combine with organic matter to form soil.			1	VI	N	Л								M	C	M	
		due to rapid processes.	5.3.1.2.2	Explain how slow processes, such as water erosion, and rapid processes, such as landslides and volcanic eruptions, form features of the Earth's surface.				M													
Science	Interaction	1. In order to maintain and improve their existence, humans interact with and influence Earth systems.	5.3.4.1.1	Identify renewable and non-renewable energy and material resources that are found in Minnesota and describe how they are used.				N	M				С								

			Give examples of how mineral and energy resources are obtained and processed and how that processing modifies their properties to make them more useful.							M																					
			Compare the impact of individual decisions on natural systems.							M												M						C N	M		
4. Life Science	1. Structure and Function in Living Systems	1. Living things are diverse with many different characteristics that enable them to grow, reproduce and survive.	Describe how plant and animal structures and their functions provide an advantage for survival in a given natural system.	M	M	M	1	M			M	M	М	M	С		•	(7)	N	1M	M			М	M	[	M N	VI N	Л N	M N	1
	2. Interdepen dence Among Living Systems	1. Natural systems have many parts that interact to maintain the living system.	Describe a natural system in Minnesota, such as a wetland, prairie or garden, in terms of the relationships among its living and nonliving parts, as well as inputs and outputs.	M	С	С		M			M			С		М				M	M			Δ		1	M		М	N	1
			Explain what would happen to a system such as a wetland, prairie or garden if one of its parts were changed.					С					M	С		С				M	M			Δ				N	М		
		1. Humans change environments in ways that can be either beneficial or harmful to themselves and other organisms.	Give examples of beneficial and harmful human interaction with natural systems.									M		M					С	C	M	M		Μ	М			N	M		

Grade 6 Science Standards

Key: C: Covers the standard

M: Meets the standard

\*: does not meet grade 6 science standards

Strand	Substrand	Standard Understand that	Code	Benchmark	A Bug's Life	*Animal Signs	*Rids and Rird Randing	*Capacing Wall	*Climbing Wall	Cross Country Skiing	*Dirt, Rocks and Worms		Freezin' Our Feathers Off	Lake Ecology	*Leave It To Beaver	Maple Syruping	*Nature Journaling  *Minnesota Mammals	*Ojibwe Hike	Orienteering	*Porcupine Quill Embroidery	*Predator/Prey	Reading the Landscape	*Recycled Art	*Snowshoeing	*Stream Superheroes		*Team Challenge/Total Team	*The Forest in the Fall	*Twines from Plants	**************************************	*Winter Tree ID
Nature of	Engineering	Engineers create, develop and manufacture machines, structures,		Identify a common engineered system and evaluate its impact on the daily life of humans								M														M					
		processes and systems that impact society and may make humans more productive.	6.1.2.1.2	Recognize that there is no perfect design and that new technologies have consequences that may increase some risks and decrease others.								M																			
			6.1.2.1.3	Describe the trade- offs in using manufactured products in terms of features, performance, durability and cost.								С																			
			6.1.2.1.4	Explain the importance of learning from past failures, in order to inform future designs of similar products or systems.								M														С					

	3.	1. Designed and	6.1.3.1.1	Describe a system in	С	T			1				М					
		natural systems	0.1.5.1.1	terms of its	L								IVI					
		exist in the world.		subsystems and														
	Among Science,	These systems		parts, as well as its														
		-		· = ·														
	Technology			inputs, processes and														
		components that		outputs.														
		act within the																
	cs and	system and interact																
	Society	with other systems.							-				4		-			_
			6.1.3.4.1	Determine and use													N	<b>Л</b>
		emerging		appropriate safe														
		technologies have		procedures, tools,														
		enabled humans to		measurements,														
		develop and use		graphs and														
		models to		mathematical														
		understand and		analyses to describe														
		communicate how		and investigate														
		natural and		natural and designed														
		designed systems		systems in a physical														
		work and interact.		science context.														
			6.1.3.4.2	Demonstrate the					С		С							
				conversion of units														
				within the														
				International System														
				of Units (SI, or														
				metric) and estimate														
				the magnitude of														
				common objects and														
				quantities using														
				metric units.														
2. Physical	1. Matter	1. Pure substances	6.2.1.1.1	Explain density,						М								
Science	I. Matter	can be identified by		dissolving,														
Deletice		properties which		compression,														
		are independent of		diffusion and thermal														
		the sample of the		expansion using the														
		substance and the		particle model of														
		properties can be		matter.														
		explained by a		matter.														
		model of matter																
		that is composed of																
		· ·																
	1	small particles.																

		2. Substances can	6.2.1.2.1	Identify evidence of			1		С			П				
		undergo physical		physical changes,												
		changes which do		including changing												
		not change the		phase or shape, and												
		composition or the		dissolving in other												
		total mass of the		materials.												
		1	6.2.1.2.2	Describe how mass is						М						
		closed system.		conserved during a												
				physical change in a												
				closed system.												
			6.2.1.2.3	Use the relationship						С						
				between heat and												
				the motion and												
				arrangement of												
				particles in solids,												
				liquids and gases to												
				explain melting,												
				freezing,												
				condensation and												
				evaporation.												
2	2. Motion	2. Forces have	6.2.2.2.3	Recognize that some							М					
		magnitude and		forces between												
		direction and		objects act when the												
		govern the motion		objects are in direct												
		of objects.		contact and others,												
				such as magnetic,												
				electrical and												
				gravitational forces												
				can act from a												
				distance.												
3	3. Energy	2. Energy can be	6.2.3.2.2	Trace the changes of										С		
	07	transformed within		energy forms,												
		a system or		including thermal,												
		transferred to		electrical, chemical,												
		other systems or		mechanical or others												
		the environment.		as energy is used in												
				devices.												
			6.2.3.2.3	Describe how heat										С		
				energy is transferred												
				in conduction,											1	
				convection and											1	
				radiation.												

Grade 7 Science Standards

Key: C: Covers the standard

M: Meets the standard

\*: does not meet grade 7 science standards

Strand	Substrand	Standard	Code	Benchmark																								*				
		Understand that			A bug's Life	Animal Signs	Birds and Bird Banding	*Canoeing	*Climbing Wall	Creeny Crawly Creatures	*Oroge Comptan China	Dirt Rocks and Worms	Forest Ecology	Freezin' Our Feathers Off	Lake Ecology	Leave It to Beaver	Maple Syruping	Minnesota Mammals	*Nature Journaling	Orienteering	Porcupine Quill Embroidery	Predator/Prey	Reading the Landscape	Recycled Art	*Snowshoeing	Stream Superheroes	Survivor: Northwoods	Team Challenge/Total Team	The Forest in the Fall	Twines from Plants	Wetlands	Forest Ecology Wolves of the North Woods
	Practice of Science	2. Scientific inquiry uses multiple interrelated processes to investigate questions and propose explanations about the natural world.	7.1.1.2.2	Plan and conduct a controlled experiment to test a hypothesis about a relationship between two variables, ensuring that one variable is systematically manipulated, the other is measured and recorded, and any other variables are kept the same (controlled).	C																					С						
			7.1.1.2.3	Generate a scientific conclusion from an investigation, clearly distinguishing between results (evidence) and conclusions (explanation).		M																	M			С						

Interactions Among Science, Technology Engineering	emerging technologies have enabled humans to develop and use		Determine and use appropriate safety procedures, tools, measurements, graphs and mathematical analyses to describe and investigate natural and designed systems in a life science context.	M												M		С						
and	1. Tissues, organs and organ systems are composed of cells and function to serve the needs of all cells for food, air and waste removal.		Describe how the organs in the respiratory, circulatory, digestive, nervous, skin and urinary systems interact to serve the needs of vertebrate organisms.			С						M	С	С					M					
	2. All living organisms are composed of one or more cells which carry on the many functions needed to sustain life.		Recognize that cells carry out life functions, and that these functions are carried out in a similar way in all organisms, including animals, plants, fungi, bacteria and protists.	C																				
2. Interdepen dence Among Living Systems	1. Natural systems include a variety of organisms that interact with one another in several ways.	7.4.2.1.1	Identify a variety of populations and communities in an ecosystem and describe the relationships among the populations and communities in a stable ecosystem.	M	M	M		M	М	1	м с	M	С		M	M		M	M	M	N	M	1	1
		7.4.2.1.2	Compare and contrast predator/prey, parasite/host and producer/consumer/de composer relationships.					M	M	[	М				M					M		C	; N	И

	7.4.2.1.3	Explain how the number of populations an ecosystem can support depends on the biotic resources available as well as abiotic factors such as amount of light and water, temperature range and soil composition.	M	C	C		M	С	Μ	С	M	M		С		M	M	C M		M
2. The flow of energy and the recycling of matter are essential to a stable ecosystem.	7.4.2.2.1	Recognize that producers use the energy from sunlight to make sugars from carbon dioxide and water through a process called photosynthesis. This food can be used immediately, stored for later use, or used by other organisms.	5				M				С			M			M	С		M
	7.4.2.2.2	Describe the roles and relationships among producers, consumers and decomposers in changing energy from one form to another in a food web within an ecosystem.			С		M	С		С				M			M	С	С	M
	7.4.2.2.3	Explain that the total amount of matter in an ecosystem remains the same as it is transferred between organisms and their physical environment, even though its form and location change.					M	С									M	c		M

in Living a Systems a is c s H ir c g ir a	Reproduction is characteristic of all organisms and sessential for the continuation of a pecies. Hereditary information is contained in genes which are inherited through is exual eproduction.	7.4.3.1.3	Distinguish between characteristics of organisms that are inherited and those acquired through environmental influences.	M		C	M	(			С						CC			M				c
o c p e n	2. Individual organisms with sertain traits in particular environments are more likely than others to survive and have	7.4.3.2.3	Recognize that variation exists in every population and describe how a variation can help or hinder an organism's ability to survive.		С		M	С			C I	M	V	M		С	Μ			Σ				
	ind nave iffspring.	7.4.3.2.4	Recognize that extinction is a common event and it can occur when the environment changes and a population's ability to adapt is insufficient to allow its survival.		С		С										С					С		
Interactionsc with Living o	an change living organisms and ecosystems.	7.4.4.1.1	Describe examples where selective breeding has resulted in new varieties of cultivated plants and particular traits in domesticated animals.							С											С			С
		7.4.4.1.2	Describe ways that human activities can change the populations and communities in an ecosystem.						С		M I	M	M					Μ	С	С			M	

Grade 8 Science Standards

Key: C: Covers the standard

M: Meets the standard

\*: does not meet grade 8 science standards

Strand	Substrand	Standard	Code	Benchmark																	_								×			*	_	
		Understand that			A Bug's Life	*Animal Signs	*Birds and Bird Banding	*Canoeing	*Climbing Wall	*Creepy Crawly Creatures	*Cross Country Skiing	Dirt Rocks and Worms	Energy for Life	Freezin' Our Feathers Off	*Lake Ecology	*Leave It to Beaver	Maple Syruping	*Minnesota Mammals	*Nature Journaling	Oiibwe Hike	Porcupine Quill Emproidery	*Predator/Prey	*Reading the Landscape	Recycled Art	*Skywalk High Ropes	*Snowshoeing	Stream Superheroes	*Survivor: Northwoods	Team Challenge/Total Team	The Forest in the Fall	Twines From Plants	Wolves of the North Woods	Wolves of the North Woods	Winter Tree ID
1. The Nature of Science and Engineering	Among Science, Technology, Engineering Mathematic s and	American Indian		Describe examples of important contributions to the advancement of science, engineering and technology made by individuals representing different groups and cultures at different times in history.									С						N	1	M										M			
1. The Nature of Science and Engineering		3. Science and engineering operate in the context of society and both influence and are influenced by this context.	8.1.3.3.3	Provide examples of how advances in technology have impacted the ways in which people live, work and interact.									M																					

2. Physical Science	1. Matter	1. Pure substances can be identified by properties which are independent of the sample of the substance and the properties can be explained by a model of matter that is composed of small particles.	3.2.1.1.1	Distinguish between a mixture and a pure substance and use physical properties including color, solubility, density, melting point and boiling point to separate mixtures and identify pure substances.			С								
		2. Substances can undergo physical and/or chemical changes which may change the properties of the substance but do not change the total mass in a closed system.	.2.1.2.1	Identify evidence of chemical changes, including color change, generation of a gas, solid formation and temperature change.				С	M				С		
			.2.1.2.2	Distinguish between chemical and physical changes in matter.					М			С			
		8.	.2.1.2.3	Use the particle model of matter to explain how mass is conserved during physical and chemical changes in a closed system.					С						

-	Structure and Processes	1. The movement of tectonic plates results from interactions among the lithosphere, mantle and core.	8.3.1.1.1	Recognize that the Earth is composed of layers, and describe the properties of the layers, including the lithosphere, mantle and core.			М									
			8.3.1.1.3	Recognize that major geological events, such as earthquakes, volcanic eruptions and mountain building, result from the slow movement of tectonic plates.			М		С							
	Structure and Processes	2. Landforms are the result of the combination of constructive and destructive processes.	8.3.1.2.1	Explain how landforms result from the processes of crustal deformation, volcanic eruptions, weathering, erosion and deposition of sediment.			М		С							
			8.3.1.2.2	Explain the role of weathering, erosion and glacial activity in shaping Minnesota's current landscape.			С	(	M							

	3. Rocks and rock formations indicate evidence of the materials and conditions that produced them.	8.3.1.3.1	Interpret successive layers of sedimentary rocks and their fossils to infer relative ages of rock sequences, past geologic events, changes in environmental conditions, and the appearance and extinction of life forms.			M									
 1. Earth Structure and Processes		8.3.1.3.2	Classify and identify rocks and minerals using characteristics including, but not limited to, density, hardness and streak for minerals; and texture and composition for rocks.			M									
		8.3.1.3.3	Relate rock composition and texture to physical conditions at the time of formation of igneous, sedimentary and metamorphic rock.			M	1								

	-	1. The sun is the principal external energy source for the Earth.	8.3.2.1.1	Explain how the combination of the Earth's tilted axis and revolution around the sun causes the progression of seasons.					С		M					
3. Earth and Space Science	Interdepen-	1. The sun is the principal external energy source for the Earth.	8.3.2.1.3	Explain how heating of the Earth's surface and atmosphere by the sun drives convection within the atmosphere and hydrosphere producing winds, ocean currents and the water cycle, as well as influencing global climate.			С									
		2. Patterns of atmospheric movement influence global climate and local weather.	8.3.2.2.1	Describe how the composition and structure of the Earth's atmosphere affects energy absorption, climate, and the distribution of particulates and gases.			С									

	3. Water, which covers the majority of the Earth's surface, circulates through the crust, oceans and atmosphere in what is known as the water cycle.	8.3.2.3.2	Describe how the water cycle distributes materials and purifies water.											С		M	
Universe	1. The Earth is the third planet from the sun in a system that includes the moon, the sun, seven other planets and their moons, and smaller objects.		Describe how gravity and inertia keep most objects in the solar system in regular and predictable motion.							r	1						
		8.3.3.1.3	Recognize that gravitational force exists between any two objects and describe how the masses of the objects and distance between them affect the force.							C							
Interactions with Earth Systems	1. In order to maintain and improve their existence, humans interact with and influence Earth systems.	8.3.4.1.2	Recognize that land and water use practices can affect natural processes and that natural processes interfere and interact with human systems.	М			С	С			С		(	C M	1	M	

# **Language Arts Standards for Classes and Evening Programs Grades K-8**

Key: C: Covers the standard

M: Meets the standard

Grade	Strand	Sub-Strand	Standards	Benchmarks					
					Nature Journaling	Raptors Through Stories	Land Use Hearing	Night Hike	Astronomv Of Raptors and Men
К		C. Comprehension	The student will listen to and understand the meaning of text.	<ol> <li>Demonstrate literal comprehension by asking and answering questions about narrative and informational text.</li> <li>Make predictions from illustrations and story content.</li> <li>Write or draw a response that demonstrates comprehension.</li> <li>Relate texts to prior knowledge and experiences.</li> </ol>		М			
К		D. Literature	The student will read or listen to a variety of texts.	<ol> <li>Listen to and understand the meaning of texts representing a variety of genres (such as poetry, folk tales, drama, fantasy, realistic fiction, informational and biographical texts) from America, as well as from other countries.</li> <li>Identify main characters and story events and actions.</li> <li>Retell familiar stories using beginning, middle and end.</li> <li>Respond to literature using details from the story to make personal connections.</li> <li>Listen to and look at literature for personal enjoyment.</li> </ol>		M			
К	III. Speaking, Listening and Viewing	A. Speaking and Listening	The student will communicate effectively through listening and speaking.	<ol> <li>Participate in and follow agreed-upon rules for conversation and formal discussions.</li> <li>Follow two—step directions.</li> <li>Attend to and understand the meaning of messages.</li> <li>Communicate needs, feelings and ideas to peers and adults.</li> <li>Recite and respond to poems, rhymes and songs.</li> <li>Respond orally to language patterns in stories and poems.</li> <li>Use voice level appropriate for language situation.</li> <li>Ask and respond to questions.</li> </ol>		М			
1	I. Reading and Literature	C. Comprehension	The student will actively engage in the reading process and use a variety of	<ol> <li>Demonstrate literal and inferential comprehension by asking and answering questions about narrative and informational text.</li> <li>Recall and use prior learning and preview text to prepare for reading.</li> <li>Monitor comprehension and reread as needed at points of</li> </ol>		М			

			comprehension strategies to understand the meaning of texts that have been read or listened to.	difficulty, using strategies to self-correct when needed. 4. Make predictions of outcomes and verify from texts. 5. Identify or infer topic. 6. Make simple inferences and draw and support conclusions. 7. Use story illustrations to enhance comprehension. 8. Write or draw a response that shows comprehension of a story that has been read. 9. Relate texts to prior knowledge and experiences.			
1		D. Literature	The student will actively engage in the reading process and read, understand, respond to and appreciate a wide variety of fiction, poetic and non-fiction texts.	<ol> <li>Read from and listen to texts representing a variety of genres (such as poetry, folk tales, drama, fantasy, realistic fiction, informational and biographical texts) from America, as well as from other countries.</li> <li>Identify and describe main characters setting and sequences of story events.</li> <li>Respond to text and use details from stories to support interpretation and make personal connections.</li> <li>Retell familiar stories using a beginning, middle and end.</li> <li>Read and listen to selections for personal enjoyment.</li> <li>Understand the role of illustrations in conveying meaning in picture books.</li> </ol>	M		
1 2	III. Speaking, listening and viewing	A. Speaking and Listening	The student will communicate effectively through listening and speaking.	<ol> <li>Participate in and follow agreed-upon rules for conversation and formal discussions.</li> <li>Follow two- or three-step oral directions.</li> <li>Attend to and understand the meaning of messages.</li> <li>Communicate needs, feelings and ideas to peers and adults in complete sentences.</li> <li>Recite and respond to stories, poems, rhymes and songs with expression.</li> <li>Use voice level appropriate for language situation.</li> <li>Ask and respond to questions.</li> </ol>	N	1	
2	I. Reading and Literature	C. Comprehension	The student will actively engage in the reading process and use a variety of comprehension strategies to understand the meaning of texts that have been read.	<ol> <li>Read aloud grade-appropriate texts (that have not been previewed) with accuracy and comprehension.</li> <li>Recall and use prior learning and preview text to prepare for reading.</li> <li>Analyze text by using pictures, diagrams, titles and headings.</li> <li>Monitor comprehension, reread and use strategies to self-correct when necessary.</li> <li>Restate the sequence of events or ideas in a text, and summarize.</li> <li>Identify the topic, facts and supporting details in non-fiction texts.</li> <li>Demonstrate literal and inferential comprehension by asking and answering questions about narrative and informational texts.</li> <li>Make predictions about text and verify outcomes.</li> <li>Summarize text.</li> </ol>	M		

				10. Follow two-step written directions.						
3	I. Reading and Literature	C. Comprehension	The student will understand the meaning of texts using a variety of comprehension strategies and will demonstrate literal, interpretive and evaluative comprehension.	<ol> <li>Read aloud grade-appropriate text (that has not been previewed) with accuracy and comprehension.</li> <li>Recall and use prior learning and preview text, using title, headings and illustrations, to prepare for reading.</li> <li>Generate and answer literal, inferential, interpretive and evaluative questions to demonstrate understanding about what is read.</li> <li>Retell, restate or summarize information orally, in writing, and through graphic organizers.</li> <li>Infer and identify main idea and determine relevant details in non-fiction text.</li> <li>Monitor comprehension and use strategies to self-correct when needed.</li> <li>Follow three-step written directions.</li> </ol>		M				
4	III. Speaking, Listening and Viewing	A. Speaking and Listening	The student will demonstrate understanding and communicate effectively through listening and speaking.	<ol> <li>Participate in and follow agreed-upon rules for conversation and formal discussions in large and small groups.</li> <li>Demonstrate active listening and comprehension.</li> <li>Give oral presentations to different audiences for different purposes.</li> <li>Organize and summarize ideas, using evidence to support opinions or main ideas.</li> </ol>			M	С	С	С
5		C. Spelling, Grammar, and Usage	The student will apply standard English conventions when writing.	<ol> <li>Compose complete sentences when writing.</li> <li>Identify and correct spelling of frequently used words and common homophones.</li> <li>Spell roots, suffixes, prefixes, and syllable constructions correctly.</li> <li>Apply grammar conventions correctly in writing, including:         <ul> <li>verb tense</li> <li>adverbs</li> <li>prepositions</li> <li>subject and verb agreement</li> <li>possessive pronouns.</li> </ul> </li> <li>Apply punctuation conventions correctly in writing, including:         <ul> <li>apostrophes</li> <li>capitalization of proper nouns</li> <li>abbreviations</li> <li>sentence beginnings</li> <li>commas in a series</li> <li>quotation marks.</li> </ul> </li> </ol>	М					

5	III. Speaking, Listening and Viewing	A. Speaking and Listening	The student will demonstrate understanding and communicate effectively through listening and speaking.	<ol> <li>Participate in and follow agreed-upon rules for conversation and formal discussions in large and small groups.</li> <li>Demonstrate active listening and comprehension.</li> <li>Distinguish between speaker's opinion and verifiable facts.</li> <li>Give oral presentations to various audiences for different purposes.</li> <li>Restate or summarize and organize ideas sequentially using evidence to support opinions and main ideas.</li> </ol>	M	M		С	С
6 7 8	II. Writing	A. Types of Writing	The student will create informative, expressive and persuasive writing.	Write frequently in a variety of forms, including but not limited to the following: poems, stories, plays, essays, journals, letters, directions, editorials, business communications and reports.	М				
6	III. Speaking, listening and viewing	A. Speaking and Listening	Students will demonstrate understanding and communicate effectively through listening and speaking.	<ol> <li>Participate in and follow agreed-upon rules for conversation and formal discussions in large and small groups.</li> <li>Know and apply listening rules and expectations for formal settings and demonstrate comprehension.</li> <li>Actively listen and comprehend messages.</li> <li>Apply assessment criteria to self-evaluate oral presentations.</li> <li>Distinguish between a speaker's opinion and verifiable facts.</li> <li>Orally communicate information, opinions and ideas effectively to different audiences for a variety of purposes.</li> </ol>		M	С	С	С
7	III. Speaking, listening and viewing	A. Speaking and Listening	Students will demonstrate understanding and communicate effectively through listening and speaking.	<ol> <li>Participate in and follow agreed-upon rules for conversation and formal discussions in large and small groups.</li> <li>Know and apply listening rules for formal settings.</li> <li>Apply assessment criteria to self-evaluate oral presentations.</li> <li>Distinguish between speaker's opinion and verifiable facts and analyze the credibility of the presentation.</li> <li>Follow a speaker's presentation and represent it in notes.</li> <li>Orally communicate information, opinions, and ideas effectively to different audiences for a variety of purposes.</li> <li>Adjust delivery and language in oral presentations for the intended audiences and purposes.</li> <li>Perform expressive oral readings of prose, poetry or drama.</li> </ol>		Μ	C	С	С

8	III. Speaking,	A. Speaking	The student will	1. Participate in and follow agreed-upon rules for conversation and		М	С	С	С
	listening and	and Listening	demonstrate	formal discussions in large and small groups.					
	viewing		understanding	2. Actively listen and comprehend messages.					
			and	3. Apply self-assessment criteria to prepare and give oral					
			communicate	presentations.					
			effectively	4. Distinguish between speaker's opinion and verifiable facts and					
			through listening	analyze the credibility of the presentation.					
			and speaking.	<ol><li>Follow a speaker's presentation and represent it in notes.</li></ol>					
				6. Orally communicate information, opinions and ideas effectively to					
				different audiences, adjusting delivery and language for intended					
				audience and purpose.					
				7. Participate effectively in group meetings.					

## **Social Studies Standards for Classes and Evening Programs Grades 4-8**

Key: C: Covers the standard M: Meets the standard

Strand	Sub-Strand	Standards	Benchmarks										æ	
				Oiibwe Hike	Porcupine Quill Embroiderv	Voyageurs	Leave it to Beaver	Maple Syruping	Nature Journaling	Reading the Landscape	Snowshoeing	Twines from Plants	Raptors: Of Raptors and Men	Land Use Hearing
I. U.S. HISTORY		The student will understand that large and diverse American Indian nations were the original inhabitants of North America.	1. Students will compare ways of life of Indian Nations from different regions of North America.	M	M			С		С	С	M		
i. U.S. HISTORY	<b>B.</b> Pre-history through 1607	The student will demonstrate knowledge of European exploration of the North American continent and the resulting interaction with American Indian nations.	<ol> <li>Students will identify key European explorers and how their voyages led to the establishment of colonies.</li> <li>Students will know and explain that interactions between American Indian tribes and European explorers had positive and negative impacts.</li> </ol>	М			С							
I. U.S. HISTORY	and Conflict, 1607-1780s	The student will demonstrate knowledge of the colonies and the factors that shaped colonial North America.	1. Students will explain and understand the political, religious, social, and economic events and conditions that led to the colonization of America.  2. Students will compare and contrast life within the colonies and their geographical areas, including New England, Mid-Atlantic, and Southern colonies, and analyze their impact.  3. Students will identify the differences and tensions between the English colonies and American Indian tribes.  4. Students will understand the significance of enslaved Africans and their descendants in the economic and social life of the colonies.	М										
i. U.S HISTORY	<b>F.</b> Expansion, Innovation, and Reform, 1801-1861	demonstrate knowledge of the early republic and how territorial	1. Students will describe the causes and analyze the effects of the Louisiana Purchase, the War of 1812, and the Monroe Doctrine. 2. Students will analyze the						С					

			impact of territorial expansion on American Indian nations and the evolution of federal and state Indian policies.  3. Students will analyze the causes and consequences of U.S. geographic expansion to the Pacific, including the concept of Manifest Destiny and the Mexican-American War.									
MINNESOTA HISTORY GRADES 4-8												
Strand	Sub-Strand	Standards	Benchmarks									
II. MINNESOTA HISTORY		The student will demonstrate knowledge of Minnesota's indigenous peoples.	<ol> <li>Students will describe the evidence of the indigenous cultures in Minnesota, and make reasoned inferences from that evidence.</li> <li>Students will explain the major historical aspects of Dakota and Ojibwe culture, social organization and history, and compare and contrast them.</li> </ol>	M	M					M	M	
II. MINNESOTA HISTORY		The student will demonstrate knowledge of early explorers and fur traders in Minnesota and the impact of the fur trade on both European and Native societies.	<ol> <li>Students will describe how early explorers and fur traders affected the development of Minnesota.</li> <li>Students will describe the economic and cultural impact of the interaction between the Dakota and Ojibwe and the explorers and fur traders.</li> </ol>	С		M	Σ				O	
II. MINNESOTA HISTORY		The student will know and understand the factors that led to rapid settlement of Minnesota in the 19 <sup>th</sup> century and the changes the new Minnesotans brought with them.	<ol> <li>Students will explain why early settlers came to Minnesota and analyze their impact on political, cultural, and physical landscapes.</li> <li>Students will describe the process of Minnesota's becoming a territory and then a state.</li> <li>Students will understand why and how the Minnesota Indian Nations negotiated treaties with the United States, and the impact of these treaties for the Ojibwe, the Dakota, and the settlers.</li> </ol>	С				С	M			
II. MINNESOTA HISTORY	<b>E.</b> Industrial Era 1865-1914	The student will know and understand Minnesota's major industries and the economic, social, political, and technological changes that accompanied industrialization.	1. Students will know and explain the roles of people, politics, natural resources, transportation, and technology in the development of Minnesota's early industries (lumbering, mining, and agriculture).  2. Students will describe the impact of industrialization on work, home, leisure life, politics, immigration, urbanization, and changes in the physical						С			

			landscape. 3. Students will describe the various goals, strategies, and accomplishments of social reform movements in Minnesota and analyze their impact.							
III. WORLD HISTORY	<b>C.</b> Classical Civilizations and World Religions 1000 BC - 600 AD	describe classical civilizations in Europe and the	<ol> <li>Students will demonstrate knowledge of ancient Greek civilization, including art, politics, and philosophy.</li> <li>Students will demonstrate knowledge of ancient Rome, including art, politics and philosophy.</li> </ol>						M	
III. WORLD HISTORY	Renaissance and Reformation 1000 AD - 1700	demonstrate knowledge of important historical, cultural, and social events in Europe during the Middle Ages.	1. Students will demonstrate knowledge of the Renaissance in Europe. 2. Students will demonstrate knowledge of the age of exploration. 3. Students will demonstrate knowledge of the Reformation including important figures of the era. 4. Students will demonstrate knowledge of scientific, political, economic and social changes starting in the 17 <sup>th</sup> Century, including the Enlightenment.						M	
HISTORICAL SKILLS GRADES 4-8										
Strand	Sub-Strand	Standards	Benchmarks							
IV. HISTORICAL SKILLS	<b>A.</b> Concepts of Time	The student will acquire skills of chronological thinking.	1. Students will develop a chronological sequence of persons, events and concepts in each historical era studied in these grades.	М					М	
IV. HISTORICAL SKILLS		The student will analyze historical evidence and draw conclusions.	1. Students will understand that primary sources document firsthand accounts of historical events and secondary sources may be influenced by the author's interpretation of historical events.  2. Students will compare perspectives in primary and secondary sources and determine how the different perspectives shaped the authors' view of historical events.  3. Students will understand the concepts of historical context and multiple causation.  4. Students will create a timeline	С						

	Inquiry	The student will present and explain the findings of a research project.	<ol> <li>Students will analyze how historians present their work in multiple formats.</li> <li>Students will select a presentation medium for their project and learn the skills necessary to communicate their ideas.</li> <li>Students will articulate a clear thesis statement that explains the historical relevance of their research topic.</li> <li>Students will learn how to cite sources and to document their research in the form of a bibliography.</li> <li>Students will learn what constitutes plagiarism and how to paraphrase appropriately other people's work in a new interpretive format.</li> </ol>						
GEOGRAPHY GRADES 4-8									
	Sub-Strand	Standards	Benchmarks						
<b>V.</b> GEOGRAPHY	-	The student will identify and locate major physical and cultural features that played an important role in the history of the United States.	<ol> <li>Students will locate and name all 50 states, territories, mountain ranges, major river valleys, state capitals and cities, as studied.</li> <li>Students will locate the areas that were the major source regions for immigrants to the United States from 1800 to 1877.</li> </ol>	С		С			
		identify and locate major physical and	1. Students will locate major Minnesota ecosystems, topographic features, continental divides, river valleys, and cities.	С	M				
	Globes	The student will make and use maps to acquire, process, and report on the spatial organization of people and places on Earth.	1. Students will create a variety of maps to scale. 2. Students will compare and contrast the differences among a variety of maps and explain the appropriate use of projections, symbols, coloring and shading, and select maps appropriate for answering questions they have.						M
	Interconnecti- ons	The student will give examples that demonstrate how people are connected to each	1. Students will identify factors that drew people to their local communities. 2. Students will analyze how the physical environment influences human activities.						M

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		identify examples of the changing relationships between the	1. Students will give examples of how changes in technology made some locations in Minnesota more suitable for urbanization than others.  2. Students will analyze how changes in transportation affected settlement of the state.  3. Students will explain the importance of site features in the establishment of Minnesota's largest cities.  4. Students will explain the changing situation of Minnesota's largest cities and suburbs and analyze associated effects.  5. Students will identify the areas of origin for people coming to Minnesota, explain the push and pull factors that brought people to the state, and analyze the impact of these changes.  6. Students will describe the settlement pattern of Minnesota's largest immigrant groups.  7. Students will use regions to analyze modern agriculture in Minnesota.						M
<b>V.</b> GEOGRAPHY	<b>C.</b> Spatial Organization	The student will describe and provide examples of the primary factors behind the regional pattern of culture groups in the United States and the world.	1. Students will use regions to analyze the locational patterns of culture groups at various scales. 2. Students will use concepts and models of the process of diffusion to interpret the spread of culture traits. 3. Students will describe the regional distribution of the major culture groups of the United States (as defined by the U.S. census) and recent patterns of change. 4. Students will cite a variety of examples that illustrate how landscapes reflect the cultural characteristics of their inhabitants.	М					