

1. Lakes

Strand	Substrand	Grade	Code	Standard	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
1. The Nature of Science and Engineering	1. The Practice of Science	3	3.1.1.2.4	Construct reasonable explanations based on evidence collected from observations or experiments.								X	X									X
1. The Nature of Science and Engineering	3. Interactions Among Science, Technology, Engineering, Mathematics and Society	3	3.1.3.2.1	Understand that everybody can use evidence to learn about the natural world, identify patterns in nature, and develop tools.									X									
1. The Nature of Science and Engineering	3. Interactions Among Science, Technology, Engineering, Mathematics and Society	3	3.1.3.4.1	Use tools, including rulers, thermometers, magnifiers and simple balances, to improve observations and keep a record of the observations made.								X										
4. Life Science	1. Structure and Function in Living Systems	3	3.4.1.1.1	Compare how the different structures of plants and animals serve various functions of growth, survival and reproduction.									X									
4. Life Science	1. Structure and Function in Living Systems	3	3.4.1.1.2	Identify common groups of plants and animals using observable physical characteristics, structures and behaviors.								X										
1. The Nature of Science and Engineering	2. The Practice of Engineering	4	4.1.2.1.1	Describe the positive and negative impacts that the designed world has on the natural world as more and more engineered products and services are created and used.														X				X
1. The Nature of Science and Engineering	2. The Practice of Engineering	4	4.1.2.2.2	Generate ideas and possible constraints for solving a problem through engineering design.														X				
3. Earth and Space Science	2. Interdependence Within the Earth System	4	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.				X														
3. Earth and Space Science	4. Human Interactions with Earth Systems	4	4.3.4.1.1	Describe how the methods people utilize to obtain and use water in their homes and communities can affect water supply and quality.				X														
1. The Nature of Science and Engineering	1. The Practice of Science	5	5.1.1.1.3	Understand that different explanations for the same observations usually lead to making more observations and trying to resolve the differences.								X										
1. The Nature of Science and Engineering	1. The Practice of Science	5	5.1.1.2.1	Generate a scientific question and plan an appropriate scientific investigation, such as systematic observations, field studies, open-ended exploration or controlled experiments to answer the question.					X		X	X										X

1. Lakes

Strand	Substrand	Grade	Code	Standard	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
1. The Nature of Science and Engineering	1. The Practice of Science	5	5.1.1.2.2	Identify and collect relevant evidence, make systematic observations and accurate measurements, and identify variables in a scientific investigation.							X	X										X
1. Nature of Science and Engineering	3. Interactions Among Science, Technology, Engineering, Mathematics and Society	5	5.1.3.4.1	Use appropriate tools and techniques in gathering, analyzing and interpreting data.			X		X			X				X						
1. Nature of Science and Engineering	3. Interactions Among Science, Technology, Engineering, Mathematics and Society	5	5.1.3.4.2	Create and analyze different kinds of maps of the student's community and of Minnesota.			X	X														
3. Earth and Space Science	4. Human Interactions with Earth Systems	5	5.3.4.1.3	Compare the impact of individual decisions on natural systems.										X								X
4. Life Science	1. Structure and Function in Living Systems	5	5.4.1.1.1	Describe how plant and animal structures and their functions provide an advantage for survival in a given natural system.						X				X								X
4. Life Science	2. Interdependence Within the Earth System	5	5.4.2.1.1	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.						X				X								X
4. Life Science	2. Interdependence Within the Earth System	5	5.4.2.1.2	Explain what would happen to a system such as a wetland, prairie or garden if one of its parts were changed.						X				X								X
4. Life Science	4. Human Interactions with Living Systems	5	5.4.4.1.1	Give examples of beneficial and harmful human interaction with natural systems.																		X
1. The Nature of Science and Engineering	2. The Practice of Engineering	6	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.																		X
1. The Nature of Science and Engineering	2. The Practice of Engineering	6	6.1.2.1.3	Describe the trade-offs in using manufactured products in terms of features, performance, durability and cost.																		X
1. The Nature of Science and Engineering	3. Interactions Among Science, Technology, Engineering, Mathematics and Society	6	6.1.3.4.1	Determine and use appropriate safe procedures, tools, measurements, graphs and mathematical analyses to describe and investigate natural and designed systems in a physical science context.																	X	

1. Lakes

Strand	Substrand	Grade	Code	Standard	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
1. The Nature of Science and Engineering	3. Interactions Among Science, Technology, Engineering, Mathematics and Society	6	6.1.3.4.2	Demonstrate the conversion of units within the International System of Units (SI, or metric) and estimate the magnitude of common objects and quantities using metric units.																	X	
2. Physical Science	1. Matter	6	6.2.1.1.1	Explain density, dissolving, compression, diffusion and thermal expansion using the particle model of matter.																	X	
2. Physical Science	1. Matter	6	6.2.1.2.1	Identify evidence of physical changes, including changing phase or shape, and dissolving in other materials.																	X	
1. The Nature of Science and Engineering	1. The Practice of Science	7	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).												X						
1. The Nature of Science and Engineering	1. The Practice of Science	7	7.1.1.2.3	Generate a scientific conclusion from an investigation, clearly distinguishing between results (evidence) and conclusions (explanation).				X														
1. The Nature of Science and Engineering	3. Interactions Among Science, Technology, Engineering, Mathematics and Society	7	7.1.3.4.2	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.																	X	
4. Life Science	2. Interdependence Within the Earth System	7	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.						X												
4. Life Science	2. Interdependence Within the Earth System	7	7.4.2.1.2	Compare and contrast the roles of organisms with the following relationships: predator/prey, parasite/host, and producer/consumer/decomposer.						X												
4. Life Science	2. Interdependence Within the Earth System	7	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.						X												
4. Life Science	2. Interdependence Within the Earth System	7	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.						X												

1. Lakes

Strand	Substrand	Grade	Code	Standard	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
4. Life Science	2. Interdependence Within the Earth System	7	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.						X				X		X						
4. Life Science	2. Interdependence Within the Earth System	7	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.												X						
4. Life Science	3. Evolution in Living Systems	7	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.													X					X
4. Life Science	4. Human Interactions with Living Systems	7	7.4.4.1.1	Describe examples where selective breeding has resulted in new varieties of cultivated plants and particular traits in domesticated animals.													X					X
4. Life Science	4. Human Interactions with Living Systems	7	7.4.4.1.2	Describe ways that human activities can change the populations and communities in an ecosystem.										X			X					X
1. The Nature of Science and Engineering	1. The Practice of Science	7	8.1.1.2.1	Use logical reasoning and imagination to develop descriptions, explanations, predictions and models based on evidence.																		X
1. The Nature of Science and Engineering	3. Interactions Among Science, Technology, Engineering, Mathematics and Society	8	8.1.3.4.2	Determine and use appropriate safety procedures, tools, measurements, graphs and mathematical analyses to describe and investigate natural and designed systems in Earth and physical science contexts.																		X
3. Earth and Space Science	2. Interdependence Within the Earth System	8	8.3.2.3.1	Describe the location, composition and use of major water reservoirs on the Earth, and the transfer of water among them.				X														

Minnesota

Strand	Substrand	Grade	Code	Standard	Activities														
					1	2	3	4	5	6	8	7	9	10	11	12	13	14	15
1. The Nature of Science and Engineering	1. The Practice of Science	1	1.1.1.1.1	When asked "How do you know?," students support their answer with observations.				X											X
1. The Nature of Science and Engineering	1. The Practice of Science	2	2.1.1.2.1	Raise questions about the natural world and seek answers by making careful observations, noting what happens when you interact with an object, and sharing the answers with others.				X											
2. Physical Science	1. Matter	2	2.2.1.1.1	Describe objects in terms of color, size, shape, weight, texture, flexibility, strength and the types of materials in the object.	X														
1. The Nature of Science and Engineering	1. The Practice of Science	3	3.1.1.1.1	Provide evidence to support claims other than saying "Everyone knows that," or "I just know," and question such reasons when given by others.									X						
1. The Nature of Science and Engineering	1. The Practice of Science	3	3.1.1.2.1	Generate questions that can be answered when scientific knowledge is combined with knowledge gained from one's own observations or investigations.				X				X							
1. The Nature of Science and Engineering	1. The Practice of Science	3	3.1.1.2.2	Recognize that when a science investigation is done the way it was done before, even in a different place, a similar result is expected.					X										
1. The Nature of Science and Engineering	1. The Practice of Science	3	3.1.1.2.3	Maintain a record of observations, procedures and explanations, being careful to distinguish between actual observations and ideas about what was observed.				X				X						X	
1. The Nature of Science and Engineering	1. The Practice of Science	3	3.1.1.2.4	Construct reasonable explanations based on evidence collected from observations or experiments.					X			X						X	X
1. The Nature of Science and Engineering	3. Interactions Among Science, Technology, Engineering, Mathematics and Society	3	3.1.3.2.1	Understand that everybody can use evidence to learn about the natural world, identify patterns in nature, and develop tools.					X										
1. The Nature of Science and Engineering	3. Interactions Among Science, Technology, Engineering, Mathematics and Society	3	3.1.3.4.1	Use tools, including rulers, thermometers, magnifiers and simple balances, to improve observations and keep a record of the observations made.														X	
1. The Nature of Science and Engineering	2. The Practice of Engineering	4	4.1.2.1.1	Describe the positive and negative impacts that the designed world has on the natural world as more and more engineered products and services are created and used.		X								X				X	

2. Sand Dunes

Strand	Substrand	Grade	Code	Standard	1	2	3	4	5	6	8	7	9	10	11	12	13	14	15
1. The Nature of Science and Engineering	1. The Practice of Science	5	5.1.1.1.4	Understand that different models can be used to represent natural phenomena and these models have limitations about what they can explain.							X								
1. The Nature of Science and Engineering	1. The Practice of Science	5	5.1.1.2.1	Generate a scientific question and plan an appropriate scientific investigation, such as systematic observations, field studies, open-ended exploration or controlled experiments to answer the question.				X											
1. The Nature of Science and Engineering	1. The Practice of Science	5	5.1.1.2.2	Identify and collect relevant evidence, make systematic observations and accurate measurements, and identify variables in a scientific investigation.							X		X						X
1. Nature of Science and Engineering	3. Interactions Among Science, Technology, Engineering, Mathematics and Society	5	5.1.3.4.1	Use appropriate tools and techniques in gathering, analyzing and interpreting data.									X						
2. Physical Science	2. Motion	5	5.2.2.1.2	Identify the force that starts something moving or changes its speed or direction of motion.						X									
3. Earth and Space Science	1. Earth Structure and Processes	5	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.					X	X									
4. Life Science	1. Structure and Function in Living Systems	5	5.4.1.1.1	Describe how plant and animal structures and their functions provide an advantage for survival in a given natural system.								X							
4. Life Science	4. Human Interactions with Living Systems	5	5.4.4.1.1	Give examples of beneficial and harmful human interaction with natural systems.											X			X	X
1. The Nature of Science and Engineering	1. The Practice of Science	7	7.1.1.2.1	Generate and refine a variety of scientific questions and match them with appropriate methods of investigation, such as field studies, controlled experiments, reviews of existing work, and development of models.				X											
1. The Nature of Science and Engineering	1. The Practice of Science	7	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).						X									
1. The Nature of Science and Engineering	1. The Practice of Science	7	7.1.1.2.3	Generate a scientific conclusion from an investigation, clearly distinguishing between results (evidence) and conclusions (explanation).						X				X					X
1. The Nature of Science and Engineering	1. The Practice of Science	7	7.1.1.2.4	Evaluate explanations proposed by others by examining and comparing evidence, identifying faulty reasoning, and suggesting alternative explanations.											X	X			
4. Life Science	2. Interdependence Within the Earth System	7	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.							X	X							
4. Life Science	4. Human Interactions with Living Systems	7	7.4.4.1.2	Describe ways that human activities can change the populations and communities in an ecosystem.		X													
1. The Nature of Science and Engineering	1. The Practice of Science	7	8.1.1.1.1	Evaluate the reasoning in arguments in which fact and opinion are intermingled or when conclusions do not follow logically from the evidence given.												X			
1. The Nature of Science and Engineering	1. The Practice of Science	7	8.1.1.2.1	Use logical reasoning and imagination to develop descriptions, explanations, predictions and models based on evidence.												X		X	

3. Wetlands

**Minnesota:
Science**

Strand	Substrand	Grade	Code	Standard	Activities												
					Wetland Alphabet	Wetland Song	Mud Painting	Groundwater Exploration	Value of Wetlands	Wetland Observation	Bugs In The Mud	Critical Critters	Living Life Cycles	Name that Plant	Working Wetlands	Mini Wetland	Teaching About Wetlands
					K-4	K-2	4-8	4-8	4-8	K-8	K-3	4-8	3-6	4-8	4-8	4-8	4-8
					1	2	3	4	5	6	7	8	9	10	11	12	13
1. The Nature of Science and Engineering	1. The Practice of Science	K	0.1.1.2.1	Use observations to develop an accurate description of a natural phenomenon and compare one's observations and descriptions with those of others.						X							
4. Life Science	1. Structure and Function in Living Systems	K	0.4.1.1.1	Observe and compare plants and animals.						X	X						
4. Life Science	1. Structure and Function in Living Systems	K	0.4.1.1.3	Differentiate between living and nonliving things.						X							
4. Life Science	2. Interdependence Within the Earth System	K	0.4.2.1.1	Observe a natural system or its model, and identify living and nonliving components in that system.						X							
1. The Nature of Science and Engineering	1. The Practice of Science	1	1.1.1.1.2	Recognize that describing things as accurately as possible is important in science because it enables people to compare their observations with those of others.						X							
2. Physical Science	1. Matter	2	2.2.1.1.1	Describe objects in terms of color, size, shape, weight, texture, flexibility, strength and the types of materials in the object.	X	X											
1. The Nature of Science and Engineering	1. The Practice of Science	3	3.1.1.2.1	Generate questions that can be answered when scientific knowledge is combined with knowledge gained from one's own observations or investigations.	X												
1. The Nature of Science and Engineering	1. The Practice of Science	3	3.1.1.2.2	Recognize that when a science investigation is done the way it was done before, even in a different place, a similar result is expected.									X				
1. The Nature of Science and Engineering	2. The Practice of Engineering	4	4.1.2.1.1	Describe the positive and negative impacts that the designed world has on the natural world as more and more engineered products and services are created and used.													X
3. Earth and Space Science	2. Interdependence Within the Earth System	4	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.					X								
3. Earth and Space Science	4. Human Interactions with Earth Systems	4	4.3.4.1.1	Describe how the methods people utilize to obtain and use water in their homes and communities can affect water supply and quality.													X

3. Wetlands

Strand	Substrand	Grade	Code	Standard	1	2	3	4	5	6	7	8	9	10	11	12	13
1. The Nature of Science and Engineering	1. The Practice of Science	5	5.1.1.2.1	Generate a scientific question and plan an appropriate scientific investigation, such as systematic observations, field studies, open-ended exploration or controlled experiments to answer the question.								X	X				
1. The Nature of Science and Engineering	1. The Practice of Science	5	5.1.1.2.2	Identify and collect relevant evidence, make systematic observations and accurate measurements, and identify variables in a scientific investigation.									X				
1. Nature of Science and Engineering	3. Interactions Among Science, Technology, Engineering, Mathematics and Society	5	5.1.3.4.1	Use appropriate tools and techniques in gathering, analyzing and interpreting data.													X
3. Earth and Space Science	4. Human Interactions with Earth Systems	5	5.3.4.1.3	Compare the impact of individual decisions on natural systems.												X	X
4. Life Science	1. Structure and Function in Living Systems	5	5.4.1.1.1	Describe how plant and animal structures and their functions provide an advantage for survival in a given natural system.													
4. Life Science	2. Interdependence Within the Earth System	5	5.4.2.1.1	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.					X							X	X
4. Life Science	2. Interdependence Within the Earth System	5	5.4.2.1.2	Explain what would happen to a system such as a wetland, prairie or garden if one of its parts were changed.												X	X
4. Life Science	4. Human Interactions with Living Systems	5	5.4.4.1.1	Give examples of beneficial and harmful human interaction with natural systems.													X
1. The Nature of Science and Engineering	1. The Practice of Science	7	7.1.1.2.4	Evaluate explanations proposed by others by examining and comparing evidence, identifying faulty reasoning, and suggesting alternative explanations.													X
4. Life Science	2. Interdependence Within the Earth System	7	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.												X	
4. Life Science	2. Interdependence Within the Earth System	7	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.						X						X	
4. Life Science	2. Interdependence Within the Earth System	7	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.						X							
3. Earth and Space Science	2. Interdependence Within the Earth System	8	8.3.2.3.1	Describe the location, composition and use of major water reservoirs on the Earth, and the transfer of water among them.				X	X								
3. Earth and Space Science	2. Interdependence Within the Earth System	8	8.3.2.3.2	Describe how the water cycle distributes materials and purifies water.												X	

4. Human Communities

Great Lakes in My World Unit: Human Communities

www.greatlakes.org

Minnesota: Science

Strand	Substrand	Grade	Code	Standard	Activities																	
					4-8 1	3-6 2	K-4 3	K-4 4	4-8 5	3-6 6	4-8 7	4-8 8	4-8 9	4-8 10	K-3 11	4-8 12						
1. The Nature of Science and Engineering	1. The Practice of Science	K	0.1.1.2.1	Use observations to develop an accurate description of a natural phenomenon and compare one's observations and descriptions with those of others.			X															
4. Life Science	1. Structure and Function in Living Systems	K	0.4.1.1.1	Observe and compare plants and animals.			X															
4. Life Science	1. Structure and Function in Living Systems	K	0.4.1.1.3	Differentiate between living and nonliving things.			X															
4. Life Science	2. Interdependence Within the Earth System	K	0.4.2.1.1	Observe a natural system or its model, and identify living and nonliving components in that system.			X															
4. Life Science	2. Interdependence Among Living Systems	1	1.4.2.1.1	Recognize that animals need space, water, food, shelter and air.				X														
4. Life Science	2. Interdependence Among Living Systems	1	1.4.2.1.2	Describe ways in which an animal's habitat provides for its basic needs.				X														
4. Life Science	2. Interdependence Within the Earth System	2	2.4.2.1.1	Recognize that plants need space, water, nutrients and air, and that they fulfill these needs in different ways				X														
1. The Nature of Science and Engineering	2. The Practice of Engineering	4	4.1.2.1.1	Describe the positive and negative impacts that the designed world has on the natural world as more and more engineered products and services are created and used.						X	X	X				X						
1. The Nature of Science and Engineering	2. The Practice of Engineering	4	4.1.2.2.2	Generate ideas and possible constraints for solving a problem through engineering design.											X	X					X	
3. Earth and Space Science	4. Human Interactions with Earth Systems	4	4.3.4.1.1	Describe how the methods people utilize to obtain and use water in their homes and communities can affect water supply and quality.					X	X												
1. The Nature of Science and Engineering	1. The Practice of Science	5	5.1.1.1.1	Explain why evidence, clear communication, accurate record keeping, replication by others, and openness to scrutiny are essential parts of doing science.															X			
1. The Nature of Science and Engineering	1. The Practice of Science	5	5.1.1.2.2	Identify and collect relevant evidence, make systematic observations and accurate measurements, and identify variables in a scientific investigation.						X												
1. Nature of Science and Engineering	3. Interactions Among Science, Technology, Engineering, Mathematics and Society	5	5.1.3.4.1	Use appropriate tools and techniques in gathering, analyzing and interpreting data.						X												
1. Nature of Science and Engineering	3. Interactions Among Science, Technology, Engineering, Mathematics and Society	5	5.1.3.4.2	Create and analyze different kinds of maps of the student's community and of Minnesota.					X													
3. Earth and Space Science	4. Human Interactions with Earth Systems	5	5.3.4.1.3	Compare the impact of individual decisions on natural systems.						X	X											

4. Human Communities

Strand	Substrand	Grade	Code	Standard	1	2	3	4	5	6	7	8	9	10	11	12
4. Life Science	4. Human Interactions with Living Systems	5	5.4.4.1.1	Give examples of beneficial and harmful human interaction with natural systems.						X	X	X				X
1. The Nature of Science and Engineering	2. The Practice of Engineering	6	6.1.2.1.1	Identify a common engineered system and evaluate its impact on the daily life of humans.								X				
1. The Nature of Science and Engineering	3. Interactions Among Science, Technology, Engineering, Mathematics and Society	6	6.1.3.4.1	Determine and use appropriate safe procedures, tools, measurements, graphs and mathematical analyses to describe and investigate natural and designed systems in a physical science context.							X					
4. Life Science	2. Interdependence Within the Earth System	7	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.												X
4. Life Science	2. Interdependence Within the Earth System	7	7.4.2.1.2	Compare and contrast the roles of organisms with the following relationships: predator/prey, parasite/host, and producer/consumer/decomposer.												X
4. Life Science	4. Human Interactions with Living Systems	7	7.4.4.1.2	Describe ways that human activities can change the populations and communities in an ecosystem.							X		X	X		
1. The Nature of Science and Engineering	1. The Practice of Science	7	8.1.1.2.1	Use logical reasoning and imagination to develop descriptions, explanations, predictions and models based on evidence.										X		
3. Earth and Space Science	2. Interdependence Within the Earth System	8	8.3.2.3.1	Describe the location, composition and use of major water reservoirs on the Earth, and the transfer of water among them.					X							

Minnesota: Science

Strand	Substrand	Grade	Code	Standard	Activities											
					4-8 1	3-6 2	K-4 3	3-6 4	4-8 5	3-6 6	4-8 7	6-8 8	6-8 9	K-3 10	4-8 11	
1. The Nature of Science and Engineering	2. The Practice of Engineering	K	0.1.2.1.1	Sort objects into two groups: those that are found in nature and those that are human made.			X									
1. The Nature of Science and Engineering	1. The Practice of Science	3	3.1.1.2.4	Construct reasonable explanations based on evidence collected from observations or experiments.				X								
3. Earth and Space Science	4. Human Interactions with Earth Systems	5	5.3.4.1.3	Compare the impact of individual decisions on natural systems.	X	X										
4. Life Science	4. Human Interactions with Living Systems	5	5.4.4.1.1	Give examples of beneficial and harmful human interaction with natural systems.	X	X										
1. The Nature of Science and Engineering	2. The Practice of Engineering	6	6.1.2.1.3	Describe the trade-offs in using manufactured products in terms of features, performance, durability and cost.								X				
4. Life Science	4. Human Interactions with Living Systems	7	7.4.4.1.2	Describe ways that human activities can change the populations and communities in an ecosystem.	X							X				

**Great Lakes
in My World**
www.greatlakes.org

**Unit: Geology
and Water
Flow**

**Minnesota:
Science**

Strand	Substrand	Grade	Code	Standard	Activities													
					1 4-8	2 K-8	3 4-8	4 K-3	5 4-8	6 4-8	7 3-6	8 4-8	9 6-8	10 6-8	11 K-3	12 4-8		
1. The Nature of Science and Engineering	1. The Practice of Science	K	0.1.1.2.1	Use observations to develop an accurate description of a natural phenomenon and compare one's observations and descriptions with those of others.		X												
1. The Nature of Science and Engineering	1. The Practice of Science	1	1.1.1.1.1	When asked "How do you know?," students support their answer with observations.														X
1. The Nature of Science and Engineering	1. The Practice of Science	1	1.1.1.1.2	Recognize that describing things as accurately as possible is important in science because it enables people to compare their observations with those of others.		X												
1. The Nature of Science and Engineering	1. The Practice of Science	3	3.1.1.2.1	Generate questions that can be answered when scientific knowledge is combined with knowledge gained from one's own observations or investigations.							X							
1. The Nature of Science and Engineering	1. The Practice of Science	3	3.1.1.2.4	Construct reasonable explanations based on evidence collected from observations or experiments.														X
1. The Nature of Science and Engineering	3. Interactions Among Science, Technology, Engineering, Mathematics and Society	3	3.1.3.2.1	Understand that everybody can use evidence to learn about the natural world, identify patterns in nature, and develop tools.		X												X
1. The Nature of Science and Engineering	2. The Practice of Engineering	4	4.1.2.1.1	Describe the positive and negative impacts that the designed world has on the natural world as more and more engineered products and services are created and used.			X											
1. The Nature of Science and Engineering	2. The Practice of Engineering	4	4.1.2.2.2	Generate ideas and possible constraints for solving a problem through engineering design.			X											
3. Earth and Space Science	2. Interdependence Within the Earth System	4	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.														X
3. Earth and Space Science	4. Human Interactions with Earth Systems	4	4.3.4.1.1	Describe how the methods people utilize to obtain and use water in their homes and communities can affect water supply and quality.			X				X	X						X
1. The Nature of Science and Engineering	1. The Practice of Science	5	5.1.1.2.1	Generate a scientific question and plan an appropriate scientific investigation, such as systematic observations, field studies, open-ended exploration or controlled experiments to answer the question.							X							
1. The Nature of Science and Engineering	1. The Practice of Science	5	5.1.1.2.2	Identify and collect relevant evidence, make systematic observations and accurate measurements, and identify variables in a scientific investigation.								X						

6. Geology and Water Flow

Strand	Substrand	Grade	Code	Standard	1	2	3	4	5	6	7	8	9	10	11	12
3. Earth and Space Science	1. Earth Structure and Processes	5	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.						X		X				X
3. Earth and Space Science	4. Human Interactions with Earth Systems	5	5.3.4.1.2	Give examples of how mineral and energy resources are obtained and processed and how that processing modifies their properties to make them more useful.					X							X
3. Earth and Space Science	4. Human Interactions with Earth Systems	5	5.3.4.1.3	Compare the impact of individual decisions on natural systems.												X
4. Life Science	4. Human Interactions with Living Systems	5	5.4.4.1.1	Give examples of beneficial and harmful human interaction with natural systems.								X				X
1. The Nature of Science and Engineering	3. Interactions Among Science, Technology, Engineering, Mathematics and Society	6	6.1.3.4.1	Determine and use appropriate safe procedures, tools, measurements, graphs and mathematical analyses to describe and investigate natural and designed systems in a physical science context.			X								X	
1. The Nature of Science and Engineering	3. Interactions Among Science, Technology, Engineering, Mathematics and Society	7	7.1.3.4.2	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.											X	
1. The Nature of Science and Engineering	3. Interactions Among Science, Technology, Engineering, Mathematics and Society	8	8.1.3.4.2	Determine and use appropriate safety procedures, tools, measurements, graphs and mathematical analyses to describe and investigate natural and designed systems in Earth and physical science contexts.											X	
2. Physical Science	1. Matter	8	8.2.1.2.1	Identify evidence of chemical changes, including color change, generation of a gas, solid formation and temperature change.											X	
3. Earth and Space Science	2. Interdependence Within the Earth System	8	8.3.2.3.1	Describe the location, composition and use of major water reservoirs on the Earth, and the transfer of water among them.								X				