

Delta Science Modules (DSM)

Grades K-8

Correlation with

**Minnesota
Science Standards**



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Minnesota Science Standards

The following correlation of the Minnesota Science Standards to the Delta Science Modules Program (DSM) is to show representative examples of investigations and activities that address listed standards and benchmarks. A citation does not reflect all of the investigations or activities that might address a particular standard or grade level expectation.

June, 2004

GRADE KINDERGARTEN

HISTORY AND NATURE OF SCIENCE

Standard: The student will raise questions about the world.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will observe and describe common objects using simple tools. 	Properties Activity 7-9	Pages 53-73
	From Seed to Plant Activity 1, 3-5	Pages 15-20, 33-53
	Observing an Aquarium Activity 4-6	Pages 39-67
	Investigating Water Activity 1-6	Pages 13-54

EARTH AND SPACE SCIENCE

Standard: The student will observe weather changes.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will observe and describe daily and seasonal changes in weather. 	Sunshine and Shadows Reader This topic is covered in the grade 2 module <u>Weather Watching</u> .	Pages 12-13

LIFE SCIENCE

Standard: The student will understand that there are living and nonliving things.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will compare and contrast living and nonliving things. 	From Seed to Plant Activity 1 Observing an Aquarium Activity 2, 12	Pages 15-20 Pages 23-30, 117-123
	<ul style="list-style-type: none"> The student will know simple ways that living things can be grouped. 	From Seed to Plant Activity 10 Reader Observing an Aquarium Activity 3-6, 12 Reader

LIFE SCIENCE

Standard: The student will understand that people have five senses that can be used to learn about the environment.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none">The student will observe and describe the environment using their five senses	Finding the Moon Activity 3-5, 7-8 Sunshine and Shadows Activity 1-4 Properties Activity 1-10 Investigating Water Activity 1-9	Pages 29-54, 63-76 Pages 13-41 Pages 13-80 Pages 13-80

GRADE ONE

HISTORY AND NATURE OF SCIENCE

Standard: The student will raise questions about the natural world, make careful observations, and seek answers.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will observe, describe, measure, compare, and contrast common objects using simple tools including but not limited to ruler, thermometer and balance. 	Properties Activity 6, 10-11	Pages 47-52, 75-88
	Investigating Water Activity 7 and 8	Pages 55-69
	From Seed to Plant Activity 1-6	Pages 15-58
	Observing an Aquarium Activity 3-6	Pages 31-67

PHYSICAL SCIENCE

Standard: The student will understand that materials have physical properties.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will describe objects in terms of color, size, shape, weight, texture, flexibility, and attraction to magnets. 	Properties Activity 1-12 Reader	Pages 13-93 Pages 3-13
	Investigating Water Activity 1-6 Reader	Pages 13-54 Pages 2, 4-8

PHYSICAL SCIENCE

Standard: The student will understand that forces can act at a distance.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will know that magnets can be used to make some things move without direct contact. The student will know that things near the Earth fall to the ground unless something holds them up. 	Properties Activity 11 Reader	Pages 81-86 Page 8
	Investigating Water Activity 5 Properties Activity 10	Pages 41-46 Pages 75-80

EARTH AND SPACE SCIENCE

Standard: The student will investigate weather cycles.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will observe, record, and describe characteristics in daily weather and seasonal cycles. 	<p>Sunshine and Shadows Reader</p> <p>This topic is covered in the grade 2 module <u>Weather Watching</u>.</p>	Pages 12-13

EARTH AND SPACE SCIENCE

Standard: Students will recognize the changes that occur in the sky in a 24 hour day.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> Students will observe and describe the changes in the position of the sun and the moon. 	<p>Sunshine and Shadows Activity 1-6 Reader</p> <p>Finding the Moon Activity 3-5, 9-10 Reader</p>	<p>Pages 13-56 Pages 8-9</p> <p>Pages 29-47, 77-85 Pages 6-10</p>

LIFE SCIENCE

Standard: The student will observe plant and animal life cycles.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will observe and describe how plants and animals grow and change. 	<p>Observing an Aquarium Activity 10 Reader</p> <p>From Seed to Plant Activity 13 Reader</p>	<p>Pages 97-107 Pages 10-11</p> <p>Pages 97-103 Pages 10-11</p>

LIFE SCIENCE

Standard: The student will understand there is variation among individuals of one kind within a population.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will describe ways in which many plants and animals closely resemble but are not identical to their parents. 	<p>Observing an Aquarium Activity 10 Reader</p> <p>From Seed to Plant Activity 13 Reader</p>	<p>Pages 97-107 Pages 10-11</p> <p>Pages 97-103 Pages 10-11</p>
<ul style="list-style-type: none"> The student will match adult animals and plants to their 	<p>Observing an Aquarium Activity 10 Reader</p>	<p>Pages 97-107 Pages 10-11</p>

offspring.	From Seed to Plant Activity 13 Reader	Pages 97-103 Pages 10-11
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LIFE SCIENCE

Standard: The student will understand that organisms have basic needs.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> Students will know that animals need air, water and food and that plants require air, water, nutrients and light. 	Observing an Aquarium Activity 2-5 Reader From Seed to Plant Activity 2, 14 Reader	Pages 23-55 Pages 8-9, 12 Pages 21-31, 105-109 Pages 6-8, 12

LIFE SCIENCE

Standard: The student will know that the human body is made up of parts.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will observe and describe major parts of the body including, but not limited to, eyes, nose, heart, skin, arm, legs and muscles. 	This topic is partially covered in the grade two module <u>Using Your Senses</u> .	

LIFE SCIENCE

Standard: The student will learn that some diseases are caused by germs.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will know that diseases caused by germs can be spread from person to person; the number of germs can be reduced by personal behavior. 		

GRADE TWO

HISTORY AND NATURE OF SCIENCE

Standard: The student will understand that science is a human endeavor practiced throughout the world.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)	
<ul style="list-style-type: none"> The student will recognize that repeating a scientific investigation will lead to very similar results. 	This will become evident as student groups share investigation results. For example: States of Matter Activity 7 and 8 Sink or Float Activity 1-3 Force and Motion Activity 2-4	Pages 57-72 Pages 13-34 Pages 23-47	
	<ul style="list-style-type: none"> The student will recognize that scientific investigations generally work the same way in different places. 	This will be evident as students do the same investigations in different parts of the room. For example: Amazing Air Activity 4-7 Force and Motion Activity 4-5 States of Matter Activity 7-11	Pages 35-68 Pages 41-55 Pages 57-96
	<ul style="list-style-type: none"> The student will give examples of scientific advances throughout history. 	Using Your Senses Reader Classroom Plants Reader	Page 14 Page 14
	<ul style="list-style-type: none"> The student will recognize that everyone can do science and invent things and ideas. 	The DSM activities will provide this recognition. For example: Soil Science Activity 8-12 Classroom Plants Activity 10 Sound Activity 7-11	Pages 69-114 Pages 87-95 Pages 59-91

HISTORY AND NATURE OF SCIENCE

Standard: The student will raise questions about the world, make careful observations, and seek answers.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will use appropriate tools to gather and organize data. 	Plant and Animal Populations Activity 6, 7, 10, 11 Using Your Senses	Pages 59-76, 95-110

<ul style="list-style-type: none"> The student will recognize and describe patterns in data. 	Activity 2, 8, 11 Force and Motion Activity 3 and 4 Weather Watching Activity 2, 3, 7	Pages 23-30, 67-73, 89-95 Pages 31-47 Pages 21-36, 61-68
	Plant and Animal Populations Activity 8 and 9 Butterflies and Moths Activity 3	Pages 77-93 Pages 31-38
	Force and Motion Activity 3, 9 States of Matter Activity 7 and 8	Pages 31-39, 83-90 Pages 57-72

PHYSICAL SCIENCE

Standard: The student will understand that objects can be sorted and classified based on their properties.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will sort and classify objects in terms of color, size, shape, weight, texture, flexibility and attraction to magnets. The student will classify a substance as a solid, liquid or gas. The student will know that solids have a definite shape and that liquids take the shape of their container. The student will observe that water can be solid or liquid and can change from one state to the other. 	Sink or Float Activity 1 Weather Watching Activity 6 Soil Science Activity 3, 7	Pages 13-19 Pages 51-59 Pages 29-36, 59-67
	States of Matter Activity 1-4 Reader Amazing Air Activity Sink of Float Reader	Pages 13-40 Pages 3-10 Pages 7-33 Pages 5-6
	States of Matter Activity 1 and 2 Reader Sink or Float Reader	Pages 13-25 Pages 4-5 Pages 5-6
	States of Matter Activity 4, 7-12 Reader Weather Watching Reader	Pages 35-40, 57-97 Pages 8-10 Pages 4-5

PHYSICAL SCIENCE

Standard: The student will know that objects move in various ways.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will observe and describe how objects move in a variety of ways, including, but not limited to, a straight line, a curve, a circle, back and forth and at different speeds. The student will observe that push and pull forces that can make objects move. 	Force and Motion Activity 2-12 Reader Amazing Air Activity 10-12	Pages 23-117 Pages 6-11 Pages 87-108
	Force and Motion Activity 1-5 Reader Weather Watching Activity 4 and 5	Pages 13-55 Pages 2-11 Pages 37-50

EARTH AND SPACE SCIENCE

Standard: The student will recognize basic Earth materials.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will observe and describe rocks, soils, water and air. 	Amazing Air Activity 1-7 Soil Science Activity 1-4, 7 Reader Classroom Plants Reader	Pages 7-68 Pages 15-37, 59-67 Pages 2-8 Page 4

LIFE SCIENCE

Standard: The student will recognize that plants and animals have life cycles.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will describe life cycles of plants and animals. 	Butterflies and Moths Activity 1, 6, 9, 11 Reader Classroom Plants Reader Plant and Animal Populations Activity 2, 3, 9	Pages 15-21, 53-59, 79-87, 97-104 Pages 8-13 Page 5 Pages 23-37, 81-86

LIFE SCIENCE

Standard: The student will understand that organisms live in different environments.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will observe and describe some features of plants and animals that allow them to live in specific environments. 	<p>Classroom Plants Activity 11 Reader</p> <p>Plant and Animal Populations Activity 4-7, 10-11 Reader</p> <p>Butterflies and Moths Activity 7 and 8 Reader</p>	<p>Pages 97-104 Pages 3, 9</p> <p>Pages 43-69, 95-110 Pages 4-7, 11</p> <p>Pages 61-77 Pages 4-5, 15</p>

LIFE SCIENCE

Standard: The student will understand that biological populations change over time.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will know that some kinds of organisms that once lived on Earth are now extinct, including, but not limited to, dinosaurs, trilobites, mammoths, giant tree ferns, and horsetail trees. 	<p>Plant and Animal Populations Reader</p> <p>This topic is covered in the grade 4 module <u>Dinosaurs and Fossils</u></p>	<p>Page 15</p>

LIFE SCIENCE

Standard: The student will investigate feeding relationships among organisms.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will observe and describe predator and prey relationships. 	<p>Plant and Animal Populations Activity 10-12 Reader</p>	<p>Pages 95-117 Pages 10-13</p>
<ul style="list-style-type: none"> The student will compare and contrast plant eaters and meat eaters. 	<p>Plant and Animal Populations Activity 6, 7, 10, 11 Reader</p>	<p>Pages 67-76, 95-117 Pages 10-13</p>

LIFE SCIENCE

Standard: The student will recognize that people have basic needs.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none">The student will know that people need water, food, air, waste removal and a particular range of temperature in their environment, just like other animals.		

GRADE THREE

HISTORY AND NATURE OF SCIENCE

Standard: The student will understand the use of science as a tool to examine the natural world.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will explore the use of science as a tool that can help investigate and answer questions about the environment. 	The DSM program is inquiry based and provides the opportunity for the teaching of these understandings. For example: Sound Activity 6-11 Animal Behavior Activity 3-7 Magnets 2-4	Pages 51-98 Pages 19-34 Pages 19-52

HISTORY AND NATURE OF SCIENCE

Standard: The student will understand the nature of scientific investigations.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will ask questions about the natural world that can be investigated scientifically. 	Soil Science Activity 8-12 Classroom Plants Activity 4 and 5 Plant and Animal Life Cycles Activity 3-5 Animal Behavior Activity 1-8	Pages 69-114 Pages 39-53 Pages 33-56 Pages 7-57
<ul style="list-style-type: none"> The student will participate in a scientific investigation using appropriate tools. 	Using Your Senses Activity 2-6 States of Matter Activity 7-11 Electrical Circuits Activity 6 and 7 Looking at Liquids Activity 23-41	Pages 23-60 Pages 57-96 Pages 51-62 Pages 23-41
<ul style="list-style-type: none"> The student will know that scientists use different kinds of investigations depending on the questions they are trying to answer. 	Plant and Animal Populations Activity 9-11 Amazing Air Activity 2-6 Animal Behavior Activity 3-7 Earth Movements Activity 7-10	Pages 85-110 Pages 15-57 Pages 19-52 Pages 63-96

PHYSICAL SCIENCE

Standard: The student will explore the characteristics and properties of sound and light.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> Students will investigate how sounds are made when objects vibrate. The student will know that light tends to maintain its direction of motion until it is absorbed, refracted, or reflected by an object. 	Using Your Senses Activity 5 Sound Activity 2 and 3 Reader	Pages 45-52 Pages 21-35 Pages 2-3, 6-7, 12-13

EARTH AND SPACE SCIENCE

Standard: The student will investigate weather conditions.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will measure, record, and describe weather conditions using common instruments. The student will identify cumulus, cirrus and stratus clouds. 	Weather Watching Activity 2-5, 7 Reader Weather Instruments Activity 1-8, 11 Reader Weather Watching Activity 6 Weather Instruments Activity 1-8, 11 Reader	Pages 21-50, 61-68 Pages 6-7 Pages 13-74, 89-96 Pages 3-5, 7-9 Pages 51-59 Pages 81-87 Page 13

EARTH AND SPACE SCIENCE

Standard: The student will understand the characteristics and relationships of objects in the solar system.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will recognize the difference between rotation and revolution and their connection to day, night, seasons and the year. The student will identify the planets in 	Weather Watching Reader Solar System Activity 9 Reader Solar System Activity 1, 6, 8	Page 10 Pages 73-81 Pages 2-3, 6 Pages 13-20, 51-58, 65-72

<p>the solar system and their relative sizes, distances and basic characteristics.</p> <ul style="list-style-type: none"> The student will observe that the sun supplies heat and light to the Earth. The student will know that planets look like stars, but over time they move differently than stars. 	<p>Reader</p> <p>Weather Watching Activity 3 Reader</p> <p>Solar System Reader</p> <p>Water Cycle Activity 11 Reader</p>	<p>Pages 2-12</p> <p>Pages 29-36 Pages 3-5</p> <p>Pages 2-3</p> <p>Pages 91-98 Pages 10-11</p>
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LIFE SCIENCE

Standard: The student will recognize that plants and animals have different structures that serve different functions.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will describe the structures that serve different functions in growth, survival and reproduction for plants and animals. The student will know that plants have different structures from animals that serve the same necessary functions in growth, survival and reproduction. 	<p>Classroom Plants Activity 6-11 Reader</p> <p>Plant and Animal Populations Activity 4-7</p> <p>Food Chains and Webs Activity 3-6</p> <p>Plant and Animal Life Cycles Activity 3-5 Reader</p> <p>Classroom Plants Activity 6-11 Reader</p> <p>Plant and Animal Populations Reader</p> <p>Food Chains and Webs Activity 3</p> <p>Plant and Animal Life Cycles Activity 6, 8 Reader</p>	<p>Pages 55-104 Pages 6-12</p> <p>Pages 43-76</p> <p>Pages 31-58</p> <p>Pages 33-56 Pages 3-6</p> <p>Pages 55-104 Pages 6-12</p> <p>Pages 5-7</p> <p>Pages 31-37</p> <p>Pages 57-63, 75-82 Pages 4-5</p>

LIFE SCIENCE

Standard: The student will understand that an organism's patterns of behavior are related to the nature of that organism's environment.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will know that organisms interact with one another in various ways besides providing food. The student will know that changes in a habitat can be beneficial or harmful to an organism. 	Butterflies and Moths Activity 7 Activity 7, Science and Language Arts Plant and Animal Life Cycles Reader Food Chains and Webs Activity 10, Science, Technology, and Society Reader Insect Life Activity 13, Science and Health	Pages 61-70 Page 70 Page 5 Page 87 Pages 4-5 Page 89
	Butterflies and Moths Activity 8, Science, Technology, and Society Plant and Animal Populations Activity 7, Science, Technology, and Society Food Chains and Webs Reader Dinosaurs and Fossils Reader	Page 77 Page 76 Pages 10, 12 Page 12

LIFE SCIENCE

Standard: The student will understand that many characteristics of an organism are inherited from its parents, but that other characteristics result from an individual's interactions with the environment.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will observe and differentiate between observed characteristics of organisms that are inherited, and characteristics that are acquired. The student will identify similarities and differences between parent and offspring. 	Butterflies and Moths Activity 1, 9, 11 Reader Plant and Animal Life Cycles Activity 5, 9, 10 Reader Insect Life Activity 1 and 2, 7	Pages 15-21, 79-87, 97-104 Pages 3-13 Pages 49-56, 83-96 Pages 7-13 Pages 7-22, 47-54
	Classroom Plants Reader Butterflies and Moths Activity 1, 9, 11 Reader Plant and Animal	Page 5 Pages 15-21, 79-87, 97-104 Pages 3, 8-13

	Populations Activity 5	Pages 51-57
	Plant and Animal Life Cycles Activity 5, 9, 10 Reader	Pages 49-56, 83-96 Pages 13, 15
	Insect Life Activity 1 and 2, 7	Pages 15-22, 47-54

GRADE FOUR

HISTORY AND NATURE OF SCIENCE

Standard: The student will understand how science is used to investigate interactions between people and the natural world.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will explore the uses and effects of science in interaction with the natural world. 	The DSM program is inquiry based and provides the opportunity for the teaching of these understandings. For example: Magnets Reader Electrical Circuits Reader Water Cycle Reader	Pages 12, 14-15 Pages 10-11, 14-15 Pages 14-15
	The DSM program is inquiry based and provides the opportunity for the teaching of these understandings.	
	<ul style="list-style-type: none"> The student will discuss the responsible use of science. The student will recognize the impact of scientific and technological activities on the natural world. 	Electrical Circuits Reader Magnets Reader Water Cycle Reader

HISTORY AND NATURE OF SCIENCE

Standard: The students will participate in controlled scientific investigations.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will understand and recognize when comparisons might not be fair because some conditions are not kept the same. 	The DSM program is inquiry based and provides the opportunity for the teaching of these understandings. For example: Animal Behavior Activity 3-7 Electrical Circuits Activity 6 and 7	Pages 19-52 Pages 57-70
	<ul style="list-style-type: none"> The student will collect, organize, analyze and present data from a controlled experiment. 	Animal Behavior Activity 3-7 Food Chains and Webs Activity 3
<ul style="list-style-type: none"> Students will 	Powders and Crystals	

recognize that evidence and logic are necessary to support scientific understandings.	Activity 5-10 Looking at Liquids Activity 8 and 9	Pages 35-78
	Magnets Activity 3 and 4	Pages 57-69
	Animal Behavior Activity 3-7	Pages 25-34
		Pages 19-52

PHYSICAL SCIENCE

Standard: The student will know that heating and cooling may cause changes to the properties of a substance.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will observe that heating and cooling can cause changes in state. The student will describe the changes in the properties of a substance when it is heated or cooled. The student will compare and contrast the mass, shape and volume of solids, liquids and gases. 	Water Cycle Activity 8 and 9, 11-13 Reader Weather Instruments Activity 9 Reader Looking at Liquids Activity 11	Pages 69-83, 91-114 Pages 8-11 Pages 75-80 Page 6 Pages 77-81
	Water Cycle Activity 12 Reader Weather Instruments Activity 9 Reader Powders and Crystals Activity	Pages 99-106 Pages 8-9 Pages 75-80 Page 6 Pages 63-69
	Water Cycle Activity 8 and 9 Measuring Activity 7 and 8 Activity 7, Science Challenge Activity 8, Science Extension	Pages 69-83 Pages 51-63 Page 56 Page 63

PHYSICAL SCIENCE

Standard: The student will understand basic electricity and its application in everyday life.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will explore simple electrical circuits using components such as wires, batteries and bulbs. The student will investigate static electricity. 	Electrical Circuits Activity 1-5 Reader	Pages 13-50 Pages 3-7
	Electrical Circuits Reader	Page 2

<ul style="list-style-type: none"> The student will identify objects and materials that conduct electricity and those that are insulators. 	Electrical Circuits Activity 6 and 7 Reader	Pages 51-62 Page 3
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PHYSICAL SCIENCE

Standard: The student will understand that a relationship exists between electricity and magnetism.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> Students will demonstrate how a wire and magnets can be used to generate electric current. 	Magnets Reader	Page 11
	Electrical Circuits Reader	Page 11
<ul style="list-style-type: none"> Students will demonstrate how an electric current can make an iron object magnetic. 	Magnets Activity 10 and 11 Reader	Pages 65-76 Page 10
	Electrical Circuits Reader	Page 10

EARTH AND SPACE SCIENCE

Standard: The student will investigate the impact humans have on the environment.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will identify and investigate environmental issues and potential solutions. 	Water Cycle Reader	Pages 14-15
	Insect Life Activity 10, Science, Technology, and Society	Page 69
	Food Chains and Webs Activity 12, Science, Technology, and Society	Page 101
	Reader	Page 12

EARTH AND SPACE SCIENCE

Standard: The student will recognize that water on Earth cycles and exists in many forms.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will describe the water cycle involving the processes of evaporation, condensation, precipitation, and collection. 	Water Cycle Activity 4-13 Reader	Pages 39-114 Pages 2-12
	Weather Instruments Activity 9 Reader	Pages 75-80 Page 6

<ul style="list-style-type: none"> The student will identify the distribution of water on Earth. 	Water Cycle Activity 1-3 Reader	Pages 13-37 Pages 2-5
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EARTH AND SPACE SCIENCE

Standard: The student will identify the patterns and movements of celestial objects.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student recognizes that stars in the sky appear to slowly move from east to west. 	Solar System Activity 12	Pages 101-110
<ul style="list-style-type: none"> The student will identify the sun as an average-sized star and that the other stars are so far away that they look like points of light. 	Solar System Activity 1, 11 Reader	Pages 13-20, 93-100 Page 3
<ul style="list-style-type: none"> The student will know that telescopes magnify distant objects in the sky and dramatically increase the number of stars we can see. 	Solar System Activity 2, Science and Social Studies Activity 11, Science , Technology, and Society Reader	Page 26 Page 100 Page 15

LIFE SCIENCE

Standard: The student will know that all organisms are composed of cells, which are the fundamental units of life.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will recognize that cells are very small, and that all living things consist of one or more cells. Students will know that cells need: food, water and air; a way to dispose of waste; and an environment in which they can live in. 	Small Things and Microscopes Activity 7-11	Pages 43-71

LIFE SCIENCE

Standard: The student will know that living things can be sorted into groups in many ways according to their varied characteristics and structures.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> • Students classify plants and animals according to their physical characteristics. • Students learn that characteristics used for grouping depend on the purpose of the grouping. 	Plant and Animal Life Cycles Reader Insect Life Activity 6 Dinosaurs and Fossils Activity 10 and 11 Reader	Pages 4-12 Pages 41-46 Pages 75-89 Pages 3, 8-11
	Insect Life Activity 6 Dinosaurs and Fossils Activity 10 and 11	Pages 41-46 pages 75-89

LIFE SCIENCE

Standard: The student will know the structures that serve various functions in the human body, including protection from disease.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> • The student will understand that humans have structures that serve functions in growth, survival and reproduction. • The student will know that germs entering the body can cause disease, and that the body has defenses against these germs. • The student will know that there are many diseases that can be prevented by vaccination. 	This topic is covered in the grade five module <u>You and Your Body</u> .	

GRADE FIVE

HISTORY AND NATURE OF SCIENCE

Standard: The student will understand that communication is essential to science.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will know that current scientific knowledge and understanding guide scientific investigation. The student will recognize that clear communication of methods, findings and critical review is an essential part of doing science. 	<p>DSM provides opportunities to incorporate this benchmark within each investigation.</p> <p>Each activity emphasizes communicating results. For example: Electromagnetism Activity 6 Simple Machines Activity 6</p>	<p>Pages 43-48</p> <p>Pages 49-55</p>

HISTORY AND NATURE OF SCIENCE

Standard: The student will understand the process of scientific investigations.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will perform a controlled experiment using a specific step-by-step procedure and present conclusions supported by the evidence. The student will observe that when a science investigation or experiment is repeated, a similar result is expected. 	<p>Pond Life Activity 12 Solar Energy Activity 3-6 Pollution Activity 10 Electromagnetism Activity 6</p> <p>This is evident during discussion of activity results. For example: You and Your Body Activity 3 Color and Light Activity 5 Flight and Rocketry Activity 12 Electromagnetism Activity 6</p>	<p>Pages 81-86</p> <p>Pages 21-46</p> <p>Pages 71-76</p> <p>Pages 43-48</p> <p>Pages 27-31</p> <p>Pages 45-52</p> <p>Pages 121-130</p> <p>Pages 43-48</p>

HISTORY AND NATURE OF SCIENCE

Standard: The student will recognize that science and technology involve different kinds of work and engages men and women of all backgrounds.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will describe different kinds of work done in science and technology. 	Lenses and Mirrors Activity 11, Science Challenge Weather Forecasting Reader Erosion Reader Rocks and Minerals Reader	Page 88 Pages 2, 7 Page 14 Page 14
	Simple Machines Reader You and Your Body Reader Electromagnetism Activity 1, Science and Social Studies Reader Flight and Rocketry Reader	Pages 12-13 Pages 12-13 Page 17 Page 4 Pages 13-15

PHYSICAL SCIENCE

Standard: The student will understand that changes in speed or direction of motion are caused by forces.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will investigate the use of a lever, inclined plane, and wheel and axle to move objects. The student will demonstrate that the greater the force applied, the greater the change in motion. 	Simple Machines Activity 2, 5, 9 Reader	Pages 19-24, 39-47, 71-76 Pages 4-7, 10-11
	Simple Machines Activity 1, 4, 8 Reader	Pages 13-18, 33-37, 65-69 Pages 4-9

EARTH AND SPACE SCIENCE

Standard: The student will explore the structures and functions of Earth systems.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will recognize the natural processes that cause rocks to break down into smaller pieces 	Erosion Activity 1 Reader Rocks and Minerals Reader	Pages 13-19 Pages 5-7 Page 10

<p>and eventually into soil.</p> <ul style="list-style-type: none"> The student will investigate the formation, composition and properties of soil. The student will describe how waves, wind, water, and ice shape and reshape the Earth's surface. The student will describe the impact of floods, tornadoes, earthquakes, and volcanoes on Earth. The student will explore the interaction of the lithosphere, atmosphere, biosphere, hydrosphere and space. 	<p>Erosion Reader</p> <p>Erosion Activity 2, 10-12 Reader Oceans Activity 6, Science, Technology, and Society Reader</p> <p>Erosion Activity 6 Reader Oceans Activity 6, Science and Social Studies Weather Forecasting Activity 12</p> <p>Erosion Activity 6, 10-12 Reader Oceans Activity 5, 7 Reader Weather Forecasting Activity 7, 12 Reader</p>	<p>Page 7</p> <p>Pages 21-27, 83-104 Pages 8-13</p> <p>Page 73 Page 6</p> <p>Pages 51-57 Pages 2-4, 15</p> <p>Page 73</p> <p>Pages 87-93</p> <p>Pages 51-57, 83-104 Pages 2-6, 8-13</p> <p>Pages 55-63, 75-88 Pages 6, 8, 10</p> <p>Pages 55-61, 87-93 2-4, 8, 12-13</p>
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LIFE SCIENCE

Standard: The student will know that biological populations change over time.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will recognize that individuals of the same species differ in their characteristics, and sometimes the differences give individuals an advantage in surviving and reproducing. The student will recognize that extinction of a species occurs when the 	<p>This topic is covered in the grade 4 module <u>Dinosaurs and Fossils</u></p>	

<p>environment changes and adaptive characteristics of a species are insufficient to allow its survival.</p> <ul style="list-style-type: none"> The student will compare the structure of fossils to one another and to living organisms. 	<p>This topic is covered in the grade four module <u>Dinosaurs and Fossils</u>.</p>	
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LIFE SCIENCE

Standard: The student will know that matter and energy flow into, out of, and within a biological system.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will recognize that organisms need energy to stay alive and grow, and that this energy originates from the sun. The student will use food webs to describe the relationship among producers, consumers, and decomposers in an ecosystem in Minnesota. The student will recognize organisms are growing, dying, and decaying, and their matter is recycled. 	<p>Pond Life Activity 11</p> <p>Pond Life Activity 11 Activity 11, Science Extension</p> <p>Fungi-Small Wonders Activity 6, Science and the Arts</p>	<p>Pages 75-80</p> <p>Pages 75-80 Page 80</p> <p>Page 44</p>

GRADE SIX

HISTORY AND NATURE OF SCIENCE

Standard: The student will understand that science is a way of knowing about the world that is characterized by empirical criteria, logical argument, and skeptical review.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> • The student will distinguish between scientific evidence and personal opinion. 	Electrical Circuits Activity 10	Pages 65-70
	You and Your Body Activity 9-11	Pages 67-84
	Fungi-Small Wonders Activity 7	Pages 45-49
	Color and Light Activity 2	Pages 20-27
<ul style="list-style-type: none"> • The student will explain why scientists often repeat each other's investigations to be sure of their results. 	The DSM activities provide the opportunity to teach this idea.	
<ul style="list-style-type: none"> • The student will know that scientists assume that nature is the same everywhere and that it is understandable and predictable. 	Color and Light Activity 1	Pages 13-18
	Flight and Rocketry Activity 9-12	Pages 91-130
<ul style="list-style-type: none"> • The student will define scientific facts, laws and theories. 	Newton's Toy Box Activity 2 and 3	Pages 13-24
	Famous Scientists Activity 1-3	Pages 11-34
<ul style="list-style-type: none"> • The student will define scientific facts, laws and theories. 	The terms facts, laws and theories are used in the program but are not defined for students.	

HISTORY AND NATURE OF SCIENCE

Standard: The student will understand that scientific inquiry is used in systematic ways to investigate the natural world.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> • The student will identify questions that can be answered through scientific investigation and those that cannot. 	Pond Life Activity 12	Pages 81-86
	Activity 12, Science Challenge	Page 86
	Pollution Activity 10	Pages 71-76
	Activity 10, Science and Social Studies	Page 76
	Erosion Activity 10	Pages 83-89
	Activity 10, Science ,	

<ul style="list-style-type: none"> The student will distinguish among observation, prediction and inference. The student will use appropriate tools and Systeme International (SI) units for measuring length, time, mass, volume and temperature. The student will present and explain data and findings from controlled experiments using multiple representations including tables, graphs, physical models and demonstrations. 	<p>Technology, and Society</p> <p>Students observe, predict and infer but the terms are not defined/distinguished for students.</p>	<p>Page 89</p>
	<p>Simple Machines Activity 1</p> <p>Solar Energy Activity 4</p> <p>Newton’s Toy Box Activity 7-9</p> <p>Chemical Interactions Activity 1, 2</p>	<p>Pages 13-18</p> <p>Pages 27-32</p> <p>Pages 39-54</p> <p>Pages 7-21</p>
	<p>Pond Life Activity 12</p> <p>Solar Energy Activity 2-8</p> <p>You and Your Body Activity 3</p> <p>Pollution Activity 10</p>	<p>Pages 81-86</p> <p>Pages 13-58</p> <p>Pages 27-31</p> <p>Pages 71-76</p>

HISTORY AND NATURE OF SCIENCE

Standard: The student will know that science and technology are human efforts that both influence and are influenced by society.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will describe the types of questions asked, the products, and the methods of investigation used to distinguish science from technology. The student will explain why scientists may work in teams or work alone, can collaborate and, at times, compete. 	<p>The DSM program provides the opportunity to accomplish this. For example:</p> <p>Electromagnetism Activity 11, Science and Careers Reader</p> <p>Famous Scientists Activity 11</p>	<p>Page 83</p> <p>Page 14</p> <p>Pages 105-113</p>

PHYSICAL SCIENCE

Standard: The student will understand that matter is made of small particles and this explains the properties of matter.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> • The student will know that there are more than 100 different elements with unique properties. • The student will use evidence to explain that matter is made of small particles called atoms or molecules which are too small to see. • The student will know that the mass of a substance remains constant whether it is together, in parts or in a different state. • The student will describe the states of matter in terms of the space between particles. • The student will distinguish between volume, mass and density. • The student will use characteristic properties of density, melting point, boiling point and solubility to identify and distinguish mixtures and pure substances. • The student will know that atoms are the smallest unit of an element that maintains the characteristics of the element. 	<p>Chemical Interactions Activity 4</p>	Pages 29-35
	<p>Chemical Interactions Activity 4 and 5 Activity 5, Science Challenge</p>	Pages 29-42 Page 42
	<p>Chemical Interactions Activity 7</p>	Pages 53-57
	<p>Chemical Interactions Activity 1 If Shipwrecks Could talk Activity 4 Famous Scientists Activity 1</p>	Pages 7-13 Pages 35-45 Pages 11-19
	<p>Chemical Interactions Activity 1, 10</p>	Pages 7-13, 73-79
	<p>Chemical interactions Activity 4</p>	Pages 29-35

PHYSICAL SCIENCE

Standard: The student will differentiate between chemical and physical changes.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> • The student will define chemical and physical changes. • The student will observe that substances react chemically with other substances to form new substances with different characteristic properties. • The student will give examples and classify substances as mixtures or pure substances, 	Examples are provided in the <u>Chemical Interactions</u> module. For example: Activity 3 Activity 11-13	Pages 23-28 Pages 81-97
	Chemical Interactions Activity 7, 11-13	Pages 53-57, 81-97
	Chemical Interactions Activity 3, 5	Pages 23-28, 37-42

PHYSICAL SCIENCE

Standard: The student will understand that energy exists in many forms and can be transferred in many ways.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> • The student will compare and contrast heat, chemical, mechanical and electrical energy and identify transformations of energy from one form to another in everyday situations. • The student will recognize that heat is transferred by convection, conduction And radiation from warmer objects to cooler ones until both reach the same temperature. • The student will 	Electromagnetism Activity 8-10 Solar Energy Activity 2, 10 Famous Scientists Activity 5 Electrical Connections Activity 2, 11	Pages 57-76 Pages 13-19, 65-70 Pages 45-55 Pages 13-18, 71-76
	Solar Energy Activity 2 Earth Processes Activity 12 Activity 12, Science Challenge	Pages 13-19 Pages 89-93 Page 93
	Color and Light	

<p>demonstrate that visible light from the sun or reflected by objects may be made up of a mixture of many different colors of light.</p> <ul style="list-style-type: none"> The student will recognize the relationship between light and heat. 	Activity 1	Pages 13-18
	<p>Solar Energy Activity 2 Color and Light Reader Electrical Connections Activity 7 Famous Scientists Activity 5</p>	<p>Pages 13-19 Pages 2-3 Pages 45-51 Pages 45-55</p>
	<p>Oceans Activity 6 Reader</p>	<p>Pages 65-73 Page 7</p>
	<p>Earth Processes Activity 8</p>	<p>Pages 61-68</p>
<ul style="list-style-type: none"> The student will describe waves in terms of speed, frequency and wavelength. 		
<ul style="list-style-type: none"> The student will recognize that vibrations such as sound and earthquakes move in waves and that waves move at different speed in different materials. 		

PHYSICAL SCIENCE

The student will describe the motion of objects.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will use a frame of reference to describe the position, speed, and acceleration of an object. The student will measure and graph the position and speed of an object The student will recognize that unbalanced forces acting on an object change the object's 	<p>Newton's Toy Box Activity 3, 7-9</p>	<p>Pages 19-24, 39-54</p>
	<p>Newton's Toy Box Activity 7-9</p>	<p>Pages 39-54</p>
	<p>Simple Machines Activity 2, 5, 8 Reader Flight and Rocketry Activity 3, 5, 8, 12</p>	<p>Pages 19-24, 39-47, 65-69 Pages 8-12 Pages 33-43, 55-64, 81-97,</p>

speed and /or direction.	Reader Newton's Toy Box Activity 1, 7-10 Famous Scientists Activity 2	121-130 Pages 7, 10-13 Pages 7-11, 39-58 Pages 21-28
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PHYSICAL SCIENCE

Standard: The student will understand that a variety of forces govern the structure and motion of objects in the universe.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> • The student will know that electric currents and magnets can exert a force on certain objects and each other. • The student will know that there are positive and negative charges and that like charges repel one another and opposite charges attract. 	Electromagnetism Activity 1-11 Reader Electrical Connections Activity 11	Pages 13-83 Pages 6-13 Pages 71-76
	Electromagnetism Activity 2, 11 Reader Electrical Connections Activity 1 Activity 1, Science Challenge	Pages 19-23, 77-83 Pages 2-3 Pages 7-12 Page 12

GRADE SEVEN

HISTORY AND NATURE OF SCIENCE

Standard: The student will understand that science is a way of knowing about the world that is characterized by empirical criteria, logical argument, and skeptical review.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will recognize how scientific knowledge is subject to change as new evidence becomes available, or as new theories cause scientists to look at old observations differently. The student will explain natural phenomena by using appropriate physical, conceptual and mathematical models. 	<p>The DSM program is inquiry based and provides the opportunity for the teaching of these understandings during the course of investigations and experiments.</p>	
	<p>Earth, Moon and Sun Activity 3 and 4</p>	Pages 23-35
	<p>DNA-From Genes to Proteins Activity 4-9</p>	Pages 25-68
	<p>Famous Scientists Activity 11 and 12</p>	Pages 105-121

HISTORY AND NATURE OF SCIENCE

Standard: The student will design and conduct scientific investigations.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will formulate a testable hypotheses based on prior knowledge. The student will recognize that a variable is a condition that may influence the outcome of an investigation and know the importance of manipulating on variable at a time. The student will write a specific step-by-step procedure for a scientific investigation. 	<p>Famous Scientists Activity 7</p>	Pages 65-75
	<p>Plants in Our World Activity 3</p>	Pages 19-24
	<p>Chemical Interactions Activity 12</p>	Pages 87-92
	<p>Famous Scientists Activity 7</p>	Pages 65-75
	<p>Chemical Interactions Activity 12</p>	Pages 87-92
	<p>Plants in Our World Activity 3</p>	Pages 19-24
	<p>The DSM program provides the opportunity for students to write step-by-step procedures of investigations.</p>	

<ul style="list-style-type: none"> The student will explain how classroom scientific investigations relate to established scientific principles. 	Earth Processes Activity 10-14 Earth, Moon and Sun Activity 5 Newton's Toy Box Activity 1-3	Pages 77-112 Pages 37-45 Pages 7-24
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HISTORY AND NATURE OF SCIENCE

Standard: The student will know that science and technology are human efforts that both influenced, and are influenced by, society.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will give examples of the development of technology influencing scientific knowledge, and investigation and scientific knowledge influencing the development of technology. 	Electrical Connections Activity 10, Science, Technology, and Society DNA-From Genes to Proteins Activity 4, Science, Technology, and Society Famous Scientists Activity 10, Science, technology, and Society	Page 70 Page 29 Page 103

HISTORY AND NATURE OF SCIENCE

Standard: The student will understand how scientific discovery, culture, societal norms and technology have influenced one another in different time periods.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will cite examples of individuals throughout history who made discoveries and contributions in science and technology. 	Famous Scientists Activity 1, 3, 5, 9 Newton's Toy Box Activity 1 DNA-From Genes to Proteins Activity 1, Science Challenge Activity 2, Science Challenge	Pages 11-19, 29-34, 45-54, 85-93 Pages 7-11 Page 11 Page 18
<ul style="list-style-type: none"> Students will cite examples of how culture influences scientific and technologic advances. 	Earth, Moon and Sun Activity 9, Science and Social Studies Famous Scientists Activity 1 Newton's Toy Box Activity 8, Science, Technology, and Society	Page 93 Pages 11-19 Page 49

LIFE SCIENCE

Standard: The student will understand that all organisms are composed of cells that carry on the many functions needed to sustain life.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> • The student will know that cells are the fundamental units of life. • The student will distinguish between single-cellular and multicellular organisms. • The student will distinguish between plant and animal cells. • The student will recognize that cells repeatedly divide for growth and repair. • The student will recognize that cells convert energy from food for the production of molecules necessary for life, and for life processes including cell growth and cell division. • The student will recognize that specialized cells in multi-cellular organisms perform specialized functions. 	<p>DNA-From Genes to Proteins Activity 3 and 4</p> <p>Plants in Our World Activity 1</p>	<p>Pages 19-29</p> <p>Pages 7-12</p>
	<p>Plants in Our World Activity 1</p>	<p>Pages 7-12</p>
	<p>DNA-From Genes to Proteins Activity 5, Science Extension</p>	<p>Page 35</p>
	<p>Plants in Our World Activity 10</p>	<p>Pages 63-68</p>
	<p>Plants in Our World Activity 2, 4, 7</p>	<p>Pages 13-18, 25-30, 43-50</p>

LIFE SCIENCE

Standard: The student will understand that living systems, at every level of organization, demonstrate the complementary nature of structure and function.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> • Students will explain that individuals are composed of specialized cells, tissues, organs, and organ systems that perform specialized functions. • The student will recognize that an organism's body plan and its ability to regulate its internal environment enable it to make or find food, grow and reproduce in a constantly changing environment. • The student will recognize that behavioral responses of organisms may be determined by heredity and past experience. • The student will use and create dichotomous keys. • The student will use the characteristics of an organisms to identify the kingdom to which it belongs. 	<p>Plants in Our World Activity 2, 4, 7</p>	<p>Pages 13-18, 25-30, 43-50</p>

LIFE SCIENCE

Standard: The student will understand that within ecosystems, complex interactions exist between organisms and the physical environment.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> • The student will provide examples of the potentially irreversible effects of 	<p>Plants in Our World Activity 10, Science Extension Activity 10, Science, Technology, and Society</p>	<p>Page 68 Page 68</p>

<p>human activity on ecosystems.</p> <ul style="list-style-type: none"> • The student will define a population as all individuals of a species that exist together at a given place and time. • The student will define an ecosystem as all populations living together and the physical factors with which they interact. • The student will explain the factors that affect the number and types of organisms an ecosystem can support, including available resources, abiotic and biotic factors and disease. 	<p>Famous Scientists Activity 9</p>	<p>Pages 85-93</p>
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LIFE SCIENCE

Standard: The student will understand that heredity information is contained in genes which are inherited through both sexual and asexual reproduction.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> • The student will recognize that inherited traits result from information contained in genes, which are located on chromosomes of each cell. • The student will recognize that each gene carries a single unit of information and can influence more than one trait. • The student will explain how inherited traits can be determined by one or many genes. 	<p>DNA-From Genes to Proteins Activity 5-10</p> <p>DNA-From Genes to Proteins Activity 5-10</p> <p>DNA-From Genes to Proteins Activity 5-10</p>	<p>Pages 31-74</p> <p>Pages 31-74</p> <p>Pages 31-74</p>

<ul style="list-style-type: none"> • The student will comprehend that interactions with the environment affect some inherited traits. • The student will comprehend that reproduction is essential for the continuation of a species. • The student will compare and contrast the advantages and disadvantages of sexual and asexual reproduction. 	<p>DNA-From Genes to Proteins Activity 5, Science Extension</p>	<p>Page 35</p>
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LIFE SCIENCE

Standard: The student will understand how biological evolution provides a scientific explanation for the fossil record of ancient life forms, as well as the striking similarities observed among the diverse species of living organisms.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> • The student will recognize extinction is a common event. • The student will describe how the fossil record documents the appearance and diversification of many life forms. • The student will explain how biological adaptations in structure, function and behavior enhance the reproductive success and survival of a species in a particular environment. • The student will recognize that scientific evidence can 	<p>Earth Processes Activity 3, Science Challenge</p> <p>Plants in Our World Activity 1, Science Challenge</p>	<p>Page 4</p> <p>Page 12</p>

<p>be used to infer common ancestry among some organisms.</p> <ul style="list-style-type: none"> The student will explain how diversity of species develops through gradual processes over generations. 		
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LIFE SCIENCE

Standard: The student will understand how the flow of energy and the recycling of matter contribute to a stable ecosystem.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will know that plants use energy in light to make sugars out of carbon dioxide and water. The student will explain how energy is transferred through food chains and food webs in an ecosystem. The student will explain how the amount of useable energy available to organisms decreases as it passes through a food chain and /or food web. The student will know that the total amount of matter in a closed system remains the same as it is transferred between organisms and the physical environment even though its location or form changes. The student will compare and contrast predator/prey. Parasite/host and producer/consumer/dec omposer relationships. 	<p>Plants in Our World Activity 8</p>	<p>Pages 51-56</p>

LIFE SCIENCE

Standard: The student will understand human body systems and their relationship to disease

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> • The student will recognize that disease can be caused by genetics, infection by other organisms, exposure to environmental factors or a combination of these. • The student will identify risks associated with natural, chemical and biological hazards. • The student will describe the structure and function of systems for digestion, respiration, reproduction, circulation, excretion, movement, control and coordination and for protection from disease, in the human organism. 	<p>DNAS-From Genes to Proteins Activity 7, Science and Health</p>	Page 51

GRADE EIGHT

HISTORY AND NATURE OF SCIENCE

Standard: The student will understand that science is a way of knowing about the world that is characterized by empirical criteria, logical argument and skeptical review.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> • The student will explain and give examples of how science can be used to make informed ethical decisions by identifying likely consequences of particular actions. • The student will explain the development, usefulness and limitations of scientific models in the explanation and prediction of natural phenomena. 	<p>The DSM program is inquiry based and provides the opportunity for the teaching of these understandings during the course of investigations and experiments</p>	
	<p>Chemical Interactions Activity 4 and 5</p> <p>Earth, Moon and Sun Activity 3 and 4</p> <p>DNA-From Genes to Proteins Activity 4, 6, 8</p>	<p>Pages 29-42</p> <p>Pages 23-35</p> <p>Pages 25-29, 37-44, 53-60</p>

HISTORY AND NATURE OF SCIENCE

Standard: The student will understand that scientific inquiry is used by scientists to investigate the natural world in systematic ways.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> • The student will know that scientific investigations involve the common elements of systematic observations, the careful collection of relevant evidence, logical reasoning and innovation in developing hypotheses and explanations. • The student will describe how scientists can conduct investigations in a simple system and make generalizations 	<p>The DSM program is inquiry based and provides the opportunity for the teaching of these understandings during the course of investigations and experiments. For example:</p> <p>Chemical Interactions Activity 12</p> <p>Famous Scientists Activity 7</p> <p>Plants in Our World Activity 3</p>	<p>Pages 87-92</p> <p>Pages 65-75</p> <p>Pages 19-24</p>
	<p>Earth Processes Activity 7, 12</p> <p>Plants in Our World Activity 5 and 6</p>	<p>Pages 55-60, 89-93</p> <p>Pages 31-41</p>

to more complex systems.		
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HISTORY AND NATURE OF SCIENCE

Standard: The student will use multiple skills to design and conduct scientific investigations.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will specify variables to be changed, controlled and measured. 	Famous Scientists Activity 7	Pages 65-75
	Plants in Our World Activity 3	Pages 19-24
	Chemical Interactions Activity 12	Pages 87-92
<ul style="list-style-type: none"> The student will use sufficient trails and adequate sample size to ensure reliable data. 	Plants in Our World Activity 3	Pages 19-24
	Newton's Toy Box Activity 9	Pages 51-54
	Chemical Interactions Activity 12	Pages 87-92
<ul style="list-style-type: none"> The student will use technology and mathematics skills to access, gather, store, retrieve and organize data. 	Famous Scientists Activity 1	Pages 11-19
	Newton's Toy Box Activity 7-9	Pages 39-54
	If Shipwrecks Could Talk Activity 4	Pages 35-45

HISTORY AND NATURE OF SCIENCE

Standard: The student will know that science and technology are human efforts that both influence and are influenced by civilizations and cultures worldwide.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> Students will evaluate the credibility and validity of scientific and technological information from various sources. 	The DSM program is inquiry based and provides the opportunity for the teaching of these understandings during the course of investigations and experiments	

HISTORY AND NATURE OF SCIENCE

Standard: The student will understand how scientific discovery, culture, societal norms, and technology have influenced one another in different time periods.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will relate personal experiences in scientific investigation to the 	DNA-From Genes to Proteins Activity 4 Activity 4, Science and Social	Pages 25-29

<p>experiences of scientists throughout history.</p> <ul style="list-style-type: none"> The student will cite examples of how science and technology contributed to changes in agriculture, manufacturing, sanitation, medicine, warfare, transportation, information processing or communication. 	<p>Studies Famous Scientists Activity 1, 3, 5 Newton's Toy Box Activity 1 and 2</p> <p>Newton's Toy Box Activity 4, Science, Technology, and Society DNA-From Genes to Proteins Activity 13, Science, Technology, and Society Plants in Our World Activity 12, Science, Technology, and Society Famous Scientists Activity 5 Activity 5, Science, Technology, and Society</p>	<p>Page 29 Pages 11-19, 29-34, 45-54 Pages 7-17</p> <p>Page 29</p> <p>Page 94</p> <p>Page 81</p> <p>Pages 45-54 Page 5</p>
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EARTH AND SPACE SCIENCE

Standard: The student will identify Earth's composition, structure and processes.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> Students will explain how earthquakes, volcanoes, sea-floor spreading, and mountain building are evidence of the movement of crustal plates. The student will describe how features on the Earth's surface are created and constantly changing through a combination of slow and rapid processes of weathering, erosion, sediment deposition, landslides, volcanic eruptions and earthquakes. The student will describe the various processes and interactions of the rock cycle 	<p>Earth Processes Activity 7-14</p> <p>Earth Processes Activity 3 Activity 4, Science and Social Studies</p> <p>Earth Processes Activity 4-6</p>	<p>Pages 55-112</p> <p>Pages 21-29 Page 38</p> <p>Pages 31-53</p>

<ul style="list-style-type: none"> • The student will interpret successive layers of sedimentary rocks and their fossils to document the age and history of the Earth. • The student will recognize that constructive and destructive Earth processes can affect the evidence of Earth's history. • The student will classify and identify rocks and minerals using characteristics including but limited to density, hardness and streak. 	Earth Processes Activity 4, Science Challenge	Page 38
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EARTH AND SPACE SCIENCE

Standard: The student will investigate the impact humans have on the environment.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> • The student will identify and research an environmental issue and evaluate its impact. 	Plants in Our World Activity 10, Science, Technology and Society Famous Scientists Activity 10, Science, Technology, and Society Activity 10, Science and Health	Page 68 Page 103 Page 103

EARTH AND SPACE SCIENCE

Standard: The student will understand how the atmosphere interacts with the Earth system.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> • The student will define radiation, conduction and convection and explain their effects on weather and climate. • The student will identify the forces that create currents and layers in the Earth's 	Earth Processes Activity 12 Activity 12, Science Challenge	Pages 89-93 Page 93

<p>atmosphere and water systems.</p> <ul style="list-style-type: none"> • The student will describe the effect of Earth's rotation on the winds and ocean currents. • The student will collect and use data to predict the weather. • The student will identify the composition and structures of the atmosphere. • The student will describe climate changes that have occurred over time. 		
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EARTH AND SPACE SCIENCE

Standard: The student will compare objects in the solar system and explain their interactions with Earth.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> • The student will recognize that the Sun is the principle energy source for the solar system and that this energy is transferred in the form of radiation. 	<p>Earth, Moon, and Sun Activity 1 Activity 1, Science Challenge</p>	<p>Pages 7-13 Page 13</p>
<ul style="list-style-type: none"> • The student will explain how the combination of the Earth's tilted axis and revolution around the sun causes the progression of seasons and weather patterns. 	<p>Earth, Moon and Sun Activity 9 Astronomy Activity 5</p>	<p>Pages 69-78 Pages 43-51</p>
<ul style="list-style-type: none"> • The student will compare and contrast the planets, taking into account their compositions, mass and distance from the 	<p>Earth, Moon and Sun Activity 3 and 4 Astronomy Activity 6</p>	<p>Pages 23-35 Pages 53-60</p>

<p>sun and recognize the conditions that have allowed life to flourish on Earth.</p> <ul style="list-style-type: none"> The student will use the predictability of the motions of the Earth, and the sun to explain the length of day, length of year, phases of the moon, eclipses, tides and shadows. 	<p>Earth, Moon and Sun Activity 10-12</p>	<p>Pages 79-103</p>
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EARTH AND SPACE SCIENCE

Standard: The student will describe the composition and structure of the universe.

BENCHMARK	DSM ACTIVITY	PAGE NUMBER(S)
<ul style="list-style-type: none"> The student will recognize that the universe consists of many billions of galaxies, each containing many billions of stars and that there are vast distances that separate these galaxies and stars from one another. The student will recognize that the sun is a medium-sized star and is the closest star to earth. It is the central and largest body in the solar system and is one of billions of stars in the Milky Way Galaxy. 	<p>Astronomy Activity 11</p> <p>Earth, Moon and Sun Activity 1 Activity 1, Science Challenge</p> <p>Astronomy Activity 5</p>	<p>Pages 93-99</p> <p>Pages 7-13 Page 13</p> <p>Pages 43-51</p>