



# DELTA SCIENCE MODULES III PROGRAM (DSM)

Grades K-8

Correlation With

Mississippi  
Science Framework



# **Correlation of the Mississippi Science Framework to the Delta Science Module III Program (DSM)**

The following correlation of the Mississippi Science Framework to the Delta Science Module III Program (DSM) is to show representative examples of investigations and activities that address listed competencies and their objectives. A citation does not reflect all of the investigations or activities from DSM that might address a particular competency or objective.

April 2007

# Kindergarten

## 1. Develop an understanding that living and non-living things have identifiable characteristics. (L)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Compare similarities between parents and offspring.	<p><b>Observing an Aquarium</b> Activity 10, pp. 97-107 Reader, pp. 10—11</p> <p><b>From Seed to Plant</b> Activity 13, pp. 97-103 Reader, pp. 10-11</p>
b. Classify animals as farm, zoo, pet, or wild according to appearance and action.	<p>DSM provides the opportunity to address this objective. See below:</p> <p><b>Observing an Aquarium</b> Activity 4-6, 12, pp. 39-67, 117-125 Reader, pp. 3-9</p>
c. Identify animals by habitat.	<p><b>Observing an Aquarium</b> Activity 4-6, 12, pp. 39-67, 117-125 Reader, pp. 14-15</p>
d. Differentiate among humans, plants, and other animals.	<p>DSM provides the opportunity to address this objective. See below:</p> <p><b>Observing an Aquarium</b> Activity 3-6, pp. 31-67 Reader, pp. 3-9, 13</p> <p><b>From Seed to Plant</b> Activity 3, 7, pp. 33-38, 59-66 Reader, pp. 2, 6-9, 11-13</p>
e. Classify objects as living or nonliving based on their characteristics.	<p>DSM provides the opportunity to address this objective. See below:</p> <p><b>Observing an Aquarium</b> Activity 3-6, 12, pp. 31-67, 117-125 Reader, pp. 3-9</p> <p><b>From Seed to Plant</b> Activity 1-5, pp. 15-52 Reader, pp. 2-9</p> <p><b>Properties</b> Activity 1-9, pp. 13-73 Reader, pp. 2-14</p> <p><b>Investigating Water</b> Activity 1, 9, pp. 13-20, 71-80</p>
f. Illustrate parts of a plant.	<p><b>From Seed to Plant</b> Activity 3-7, pp. 33-66 Reader, pp. 3-9</p>
g. Identify major external parts of living organisms (human, insects, and plants).	<p><b>Observing an Aquarium</b> Activity 3-6, pp. 31-67 Reader, pp. 6-8</p> <p><b>From Seed to Plant</b> Activity 3-5, 9-10, pp. 33-52, 73-84 Reader, pp. 4-9</p>

## 2. Demonstrate an understanding of the five senses. (L)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Identify the five senses.	<b>How Do We Learn</b> Activity 1, pp. 13-22 Reader, pp. 2-6
b. Select and describe objects by size, color, shape, texture and use.	<b>Properties</b> Activity 1-4, pp. 13-39 Reader, p. 7 <b>How Do We Learn</b> Activity 2-3, pp. 23-35 Reader, p. 11
c. Identify taste (sweet/sour)	<b>How Do We Learn</b> Activity 1, pp. 13-22
d. Identify smells (pleasant/unpleasant)	<b>How Do We Learn</b> Activity 1, pp. 13-22
e. Classify sounds (fast/slow, loud/soft)	
f. Classify materials by texture (smooth/rough, soft/hard)	<b>Properties</b> Activity 5, pp. 41-46 Reader, p. 7 <b>How Do We Learn</b> Activity 2, pp. 23-29

## 3. Explore proper nutrition and the relationship to personal hygiene. (L)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Classify foods by food groups	
b. Recognize good dental hygiene.	

## 4. Investigate the different types of observable and measurable characteristics of matter. (P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Classify objects according to color, shape, or size.	<b>Properties</b> Activity 1-4, pp. 13-39 Reader, p. 7 <b>How Do We Learn</b> Activity 2-3, pp. 23-35 Reader, p. 11
b. Identify a solid and a liquid.	<b>Properties</b> Activity 7-8, pp. 53-66 Reader, pp. 5-11 <b>Investigating Water</b> Activity 1, 9, pp. 13-20, 71-80 Reader, pp. 4-7
c. Identify objects that sink or float.	<b>Properties</b> Activity 10, pp. 75-80 Reader, p. 11 <b>Investigating Water</b> Activity 5, pp. 41-46 Reader, p. 12
d. Demonstrate the interactions between magnets and objects.	<b>Properties</b> Activity 11, pp. 81-86 Reader, p. 8
e. Distinguish between warmer and cooler	

using a thermometer.	
f. Demonstrate knowledge of fire safety.	

### 5. Explore and use non-standard units of length, weight and capacity/volume. (P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Model and discuss terms of comparison such as more/less, taller/shorter, heavier/lighter, hotter/colder, and before/after.	<b>Properties</b> Activity 6-7, pp. 47-60 Reader, p. 3 <b>Observing an Aquarium</b> Activity 10, pp.97-107 <b>Sunshine and Shadows</b> Activity 8-9, pp. 65-76 Reader, pp. 8-9 <b>How Do We Learn</b> Activity 3, pp. 31-35
b. Measure the length, weight and capacity of objects using non-standard units	<b>Properties</b> Investigation 6, pp. 47-52 <b>How Do We Learn</b> Activity 6-11, pp. 51-93 <b>From Seed to Plant</b> Activity 7, pp. 59-66
c. Investigate volume/capacity (holds more, less, or about the same) using different shape containers and materials.	<b>Properties</b> Activity 8, pp. 61-66

### 6. Collect, organize and interpret data. (L, P, E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Collect, model and construct graphs using real objects	<b>From Seed to Plant</b> Activity 7, pp. 59-66
b. Interpret and analyze data in graphical form (bar graphs, pictographs, etc).	<b>How Do We Learn</b> Reader, p. 16 <b>From Seed to Plant</b> Reader, pp. 10-11 <b>Observing an Aquarium</b> Reader, pp. 11-12

### 7. Develop an understanding of the Earth as a planet; its structure and its processes. (E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Describe the Earth according to its shape.	<b>Observing an Aquarium</b> Activity 1, pp. 15-21 <b>Finding the Moon</b> Activity 2, pp. 21-28 Reader, p. 15
b. Describe the Earth according to its physical make-up (land, water, air).	<b>Observing an Aquarium</b> Activity 1, pp. 15-21
c. Distinguish the characteristics of the seasons.	
d. Describe weather safety and weather differences by using terms related to weather.	<b>Sunshine and Shadows</b> Reader, pp. 12-13

e. Compare and contrast characteristics of day and night.	<b>Finding the Moon</b> Activity 1, pp. 13-19 Reader, pp. 2-3 <b>Sunshine and Shadows</b> Reader, pp. 2, 10
f. Distinguish between continents as landforms and oceans as large bodies of water.	<b>Observing an Aquarium</b> Activity 1, pp. 15-21

## 8. Describe the appearance of the sky by day and by night. (E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Describe the appearance of the sun in the sky (very bright, visible only by day).	<b>Finding the Moon</b> Activity 1, pp. 13-19 Reader, p. 2 <b>Sunshine and Shadows</b> Reader, p. 2
b. Describe the appearance of the stars in the sky (faint; some brighter than others; visible only by night).	
c. Describe the appearance of the moon in the sky (visible by day; bright by night; different shapes).	<b>Finding the Moon</b> Activity 1, 3-4, pp. 13-19, 29-46 Reader, pp. 3-10
d. Describe the appearance of clouds in the sky (sometimes covering part or all of the sky; sometimes white or dark gray; sometimes bringing rain; sometimes colorful at sunset; sometimes hiding the sun, moon and stars).	DSM provides the opportunity to address this objective. See below: <b>Sunshine and Shadows</b> Reader, pp. 12-13

## 9. Discover how environmental concerns relate to land, water and air. (E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Identify substances that can be recycled.	<b>Investigating Water</b> Activity 12, Science, Technology and Society, p. 100 <b>Observing an Aquarium</b> Activity 11, Science, Technology and Society, p. 16
b. Determine how environmental hazards can affect organisms living in specific areas.	<b>Observing an Aquarium</b> Activity 11, pp. 109-116

## Process Strands

The process strands listed below are to be incorporated into all content strands. Emphasis is on developing the ability to ask questions, to observe, to experiment, to measure, to use computers and calculators, to problem solve/reason, to use tools of science, to gather data, and to communicate findings.

### Process Strands:

<i>Unifying Concepts and Processes</i>	<i>Science as Inquiry</i>	<i>Science and Technology</i>	<i>Science in Personal and Social Perspectives</i>	<i>History and Nature of Science</i>
Systems, order and organization	Abilities necessary to do scientific inquiry	Abilities of technological design	Personal health	Science as a human endeavor
Evidence, models, and explanation	Understandings about scientific inquiry	Understandings about science and technology	Characteristics and changes in populations	
Change, constancy and measurement		Abilities to distinguish between natural objects and those made by humans	Types of resources	
Evolution and equilibrium			Changes in environments	
Form and function			Science and technology in local challenges	

The DSM program is an inquiry-based program and addresses these process strands through activities and information in the Readers. Examples are listed below:

### Unifying Concepts and Processes

**How Do We Learn**, Activity 8-10, pp. 65-86

**Observing an Aquarium**, Activity 8-9, pp. 79-95

### Science as Inquiry

**Investigating Water**, Activity 7-8, pp. 55-69

**Properties**, Activity 6-7, pp. 47-60

### Science and Technology

**Finding the Moon**, Reader, p. 14

**How Do We learn**, Activity 12, pp. 95-101

**Properties**, Reader, pp. 12-13

### Science in Personal and Social Perspectives

**Observing an Aquarium**, Activity 11, pp. 109-116

**Investigating Water**, Activity 12, pp. 95-100; Reader, p. 15

### History and Nature of Science

**Observing an Aquarium**, Reader, p. 12

**Properties**, Reader, p. 12

**Investigating Water**, Reader, p. 13

# Grade One

## 1. Explore the basic patterns of living systems. (L)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Examine the functions of plant parts.	<b>From Seed to Plant</b> , Activity 3, 9-10, pp. 33-38, 73-84 Reader, pp. 3-9
b. Illustrate the parts of a seed.	<b>From Seed to Plant</b> , Activity 3, pp. 33-38 Reader, p. 3
c. Observe and sequence the life cycles of plants, insects, and animals	<b>From Seed to Plant</b> , Activity 13, pp. 97-103 Reader, pp. 10-11 <b>Observing an Aquarium</b> Reader, pp. 10-11
d. Identify major organs of the human body such as heart, lungs, brain, intestines, and stomach	

## 2. Investigate the diversity of living things. (L, P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Classify plants and animals according to external features (scales, feathers, fur, etc.)	<b>From Seed to Plant</b> , Reader, pp. 14-15 <b>Observing an Aquarium</b> Activity 4-5, pp. 39-55 Reader, pp. 4-8
b. Identify plants and animals indigenous to Mississippi.	Local Objective
c. Compare plants and animals in Mississippi with those found in the jungle, desert and arctic regions.	Local Objective
d. Explain the term "extinct" as related to animals.	

## 3. Identify and describe daily changes in the sky. (E, P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Describe the changing position of the sun in the daytime sky.	<b>Sunshine and Shadows</b> Activity 4, 6-7, pp. 33-41, 49-63 Reader, pp. 8-9
b. Describe the changing position of the stars in the nighttime sky.	
c. Describe the changing position of the moon in the sky.	<b>Finding the Moon</b> Activity 3, pp. 29-37
d. identify day and night as parts of a cycle of regular change.	<b>Finding the Moon</b> Activity 1, pp. 13-19

## 4. Examine the structure of the solar system. (E, P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Name the nine planets.	
b. Identify the sun as the major source of energy.	<b>Finding the Moon</b> Activity 1, pp. 13-19

	<b>Sunshine and Shadows</b> Reader, p. 2
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### 5. Discover the diversity of the Earth's surface. (E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Identify features of the Earth's surface such as mountains, lakes, oceans, and rivers.	<b>Observing an Aquarium</b> Activity 1, pp. 15-21
b. Describe the difference between the oceans and the continents.	<b>Observing an Aquarium</b> Activity 1, pp. 15-21

### 6. Explore changes that occur in the Earth's atmosphere. (E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Record, graph, and compare weather differences including sunshine, clouds, rain, wind, and snow.	This objective is addressed in the grade two module <u>Weather Watching</u> .
b. Identify the environmental changes that occur with the seasons.	This objective is addressed in the grade two module <u>Weather Watching</u> .

### 7. Investigate how environmental concerns relate to the quality of life. (E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Examine pollution and how recycling helps the environment.	<b>Observing an Aquarium</b> Activity 11, pp. 109-116 Activity 11, Science, Technology and Society, p. 116
b. Identify ways to reduce the amount of wastes thrown away.	<b>Observing an Aquarium</b> Activity 11, Science, Technology and Society, p. 116 <b>Investigating Water</b> Activity 12, Science, Technology and Society, p. 100

### 8. Examine the different types of observable and measurable changes that matter can undergo. (P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Observe and discuss the transformation of solids, liquids, and gases.	<b>Investigating Water</b> Activity 9-11, pp. 71-94 Reader, p. 4-11 <b>Properties</b> Reader, p. 15
b. Identify solids, liquids, and gases as states of matter.	<b>Investigating Water</b> Reader, p. 4-5 <b>Properties</b> Activity 7-9, pp. 53-67 Reader, pp. 5, 9, 12
c. Compare/contrast objects according to size, shape, color, texture, and use.	<b>Properties</b> Activity 1-5, pp. 13-46 Reader, p. 7 <b>How Do We Learn</b> Activity 2-3, pp. 23-35 Reader, p. 11

d. Manipulate magnets to demonstrate the interaction of magnets and other objects.	<b>Properties</b> Activity 11, pp. 81-86
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9. Explore the concepts of length, weight, temperature, and capacity/volume using nonstandard and standard (English and metric) units of measurement.

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Use nonstandard (paper clips, unifix cubes) and standard (inches, centimeters) units to explore length.	<b>How Do We Learn</b> Activity 6-11, pp.51-93 <b>From Seed to Plant</b> Activity 7, pp. 59-66
b. Compare weight of objects (heavy/light).	<b>Properties</b> Activity 6, pp. 47-52
c. Explore and estimate capacity/volume of various containers in nonstandard units.	<b>Properties</b> Activity 8, pp. 59-66
d. Explore the concept of hot/cold using a non-mercury thermometer.	This objective is addressed in the grade two module <u>Weather Watching</u> .

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#### Process Strands:

<i>Unifying Concepts and Processes</i>	<i>Science as Inquiry</i>	<i>Science and Technology</i>	<i>Science in Personal and Social Perspectives</i>	<i>History and Nature of Science</i>
Systems, order and organization	Abilities necessary to do scientific inquiry	Abilities of technological design	Personal health	Science as a human endeavor
Evidence, models, and explanation	Understandings about scientific inquiry	Understandings about science and technology	Characteristics and changes in populations	
Change, constancy and measurement		Abilities to distinguish between natural objects and those made by humans	Types of resources	
Evolution and equilibrium			Changes in environments	
Form and function			Science and technology in local challenges	

The DSM program is an inquiry-based program and addresses these process strands through activities and information in the Readers. Examples are listed below:

#### Unifying Concepts and Processes

**How Do We Learn**, Activity 8-10, pp. 65-86

**Observing an Aquarium**, Activity 8-9, pp. 79-95

#### Science as Inquiry

**Investigating Water**, Activity 7-8, pp. 55-69  
**Properties**, Activity 6-7, pp. 47-60

**Science and Technology**

**Finding the Moon**, Reader, p. 14  
**How Do We learn**, Activity 12, pp. 95-101  
**Properties**, Reader, pp. 12-13

**Science in Personal and Social Perspectives**

**Observing an Aquarium**, Activity 11, pp. 109-116  
**Investigating Water**, Activity 12, pp. 95-100; Reader, p. 15

**History and Nature of Science**

**Observing an Aquarium**, Reader, p. 12  
**Properties**, Reader, p. 12  
**Investigating Water**, Reader, p. 13

## Grade Two

### 1. Explore the functions and systems of living things. (L)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Explain how plants are used as a food source by living organisms and relate this to the food chain.	<b>Classroom Plants</b> Activity 1, pp. 15-22 Reader, pp. 2-3 <b>Plant and Animal Populations</b> Activity 6, p. 39-47 Reader, p. 12-13
b. Dissect and explain the function of the parts of a seed.	This objective is addressed in the grade one module <u>From Seed to Plant</u> .
c. Describe the function of the major internal organs to include the heart, brain, lungs, liver, kidneys, and intestines.	
d. Investigate the digestive system.	

### 2. Research the diversity and interaction of living things. (L)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Define and recognize "endangered" species.	<b>Plant and Animal Populations</b> Reader, p. 15
b. Compare and contrast physical and behavioral characteristics of different species.	<b>Butterflies and Moths</b> Activity 1-2, 6, 9-10, 12, pp. 15-30, 53-59, 79-96, 105-110 Reader, pp. 4-7 <b>Plant and Animal Populations</b> Activity 4-7, pp. 43-76 Reader, pp. 8-11
c. Analyze the suitability of different environments in meeting the needs of plants and animals.	<b>Butterflies and Moths</b> Activity 3-4, pp. 31-46 Reader, p. 15 <b>Plant and Animal Populations</b> Activity 4-7, pp. 43-76 Reader, pp. 5-7 <b>Classroom Plants</b> Activity 3-4, pp. 29-46 Reader, pp. 2-3, 15
d. Classify animals in vertebrate categories (fish, bird, mammal, amphibian, reptile).	

### 3. Explore the structure of the solar system. (E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. List and describe the nine planets in order.	This objective is addressed in the grade three module <u>Solar System</u> .
b. Identify the sun as a star.	This objective is addressed in the grade three module <u>Solar System</u> .

### 4. Identify and describe weekly and monthly changes in the sky. (E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Describe the apparent shapes of the moon from week to week...	This objective is addressed in the grade one module <u>Finding the Moon</u> .

b. Identify the moon's phases as parts of a cycle of regular change.	This objective is addressed in the grade one module <u>Finding the Moon</u> .
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### 5. Recognize the diversity of the Earth's composition. (E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Create a model depicting the major layers of the Earth.	This objective is addressed in the grade three module <u>Earth Movements</u> .
b. Discover and explore the characteristics of various earth materials such as clay, silt, sand, pebbles, and gravel.	<b>Soil Science</b> Activity 1-4, 7, pp. 15-44, 59-67 Reader, pp. 2-8

### 6. Analyze changes that occur in the Earth's atmosphere. (E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Introduce the water cycle.	<b>Weather Watching</b> Reader, pp. 4-5
b. Describe the different types of clouds and the weather associated with each.	<b>Weather Watching</b> Activity 6, pp. 51-59

### 7. Investigate how environmental concerns relate to the quality of life. (E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Design and construct a compost pile.	
b. Observe the benefits of composting to the community.	<b>Soil Science</b> Reader, p. 12 <b>Plant and Animal Populations</b> Activity 12, Science Extension, p. 113

### 8. Predict and explore the effects of forces and energy on matter. (P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Introduce and discuss the concept that matter takes up space.	<b>States of Matter</b> Activity 1-3, pp. 13-34 Reader, p. 2 <b>Sink or Float</b> Reader, p. 3
b. Classify solids, liquids, and gases as states of matter according to their characteristics.	<b>States of Matter</b> Activity 1-3, pp. 13-34 Reader, pp. 2-6 <b>Sink or Float</b> Reader, pp. 3-6
c. Determine the properties of the states of matter by experimenting.	<b>States of Matter</b> Activity 1-4, pp. 13-40
d. Manipulate magnets to show that they are only attracted to certain metals.	This objective is addressed in the grade one module <u>Properties</u> and the grade three module <u>Magnets</u> .

9. Investigate the properties of color, heat, and light. (P)

OBJECTIVES	DSM ACTIVITY
a. Demonstrate light and heat as forms of energy.	DSM provides the opportunity to address this objective. See below: <b>States of Matter</b> Activity 8, pp. 65-72 <b>Weather Watching</b> Activity 2-3, pp. 21-36
b. Identify the colors of the spectrum	
c. Demonstrate how sound travels through different media (wood, plastics, water, air).	<b>Using You Senses</b> Activity 5, pp. 45-52

10. Determine length, mass, weight, and capacity/volume using the appropriate standard (English and metric) units of measurement. (L, E, P)

OBJECTIVES	DSM ACTIVITY
a. Use appropriate tools and terms to explore measurement.	<b>Force and Motion</b> Activity 1-5, pp. 13-55 <b>States of Matter</b> Activity 1-2, 6-7, 11, pp. 13-25, 51-63, 89-96 <b>Weather Watching</b> Activity 2-3,7, pp. 21-36, 61-68 <b>Sink or Float</b> Activity 5, pp. 43-51
b. Estimate and measure length, mass, weight, and capacity/volume using standard units of measurement (inch, foot, yard, centimeter, meter, ounce, pound, gram, kilogram, cup, pint, quart, liter).	<b>Force and Motion</b> Activity 3-4, pp. 31-47 <b>States of Matter</b> Activity 1-2, pp. 13-25 <b>Weather Watching</b> Activity 7, pp. 61-68 <b>Sink or Float</b> Activity 5, pp. 43-51
c. Categorize measurement terms according to length, mass, weight, and capacity/volume.	<b>Force and Motion</b> Activity 3-4, pp. 31-47 <b>States of Matter</b> Activity 1-2, pp. 13-25 <b>Weather Watching</b> Activity 7, pp. 61-68 <b>Sink or Float</b> Activity 5, pp. 43-51
d. Use convincing arguments to justify the selection of a specific unit of measure for a given item.	DSM provides the opportunity to address this objective. See below; <b>Force and Motion</b> Activity 1-5, pp. 13-55 <b>States of Matter</b> Activity 1-2, 6-7, 11, pp. 13-25, 51-63, 89-96 <b>Weather Watching</b> Activity 2-3,7, pp. 21-36, 61-68 <b>Sink or Float</b> Activity 5, pp. 43-51
e. Collect and compare seasonal temperatures using a Fahrenheit thermometer.	<b>Weather Watching</b> Activity 2-3, pp. 21-36

## Process Strands

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### Process Strands:

<i>Unifying Concepts and Processes</i>	<i>Science as Inquiry</i>	<i>Science and Technology</i>	<i>Science in Personal and Social Perspectives</i>	<i>History and Nature of Science</i>
Systems, order and organization	Abilities necessary to do scientific inquiry	Abilities of technological design	Personal health	Science as a human endeavor
Evidence, models, and explanation	Understandings about scientific inquiry	Understandings about science and technology	Characteristics and changes in populations	
Change, constancy and measurement		Abilities to distinguish between natural objects and those made by humans	Types of resources	
Evolution and equilibrium			Changes in environments	
Form and function			Science and technology in local challenges	

The DSM program is an inquiry-based program and addresses these process strands through activities and information in the Readers. Examples are listed below:

### Unifying Concepts and Processes

**Butterflies and Moths**, Activity 11, pp. 97-104

**Plant and Animal Populations**, Activity 9-11, pp. 85-110

**Force and Motion**, Activity 4-5, pp. 41-49

### Science as Inquiry

**Soil Science**, Activity 10-11, pp. 91-105

**States of Matter**, Activity 4-5, pp. 35-50

**Classroom Plants**, Activity 5, pp. 47-53

### Science and Technology

**Using Your Senses**, Activity 2, pp. 23-30

**Force and Motion**, Activity 5-12, pp. 49-117; Reader, p. 14

**States of Matter**, Reader, p. 13

### Science in Personal and Social Perspectives

**Soil Science**, Activity 11, pp. 99-105; Reader, pp. 10-12

### History and Nature of Science

**Using Your Senses**, Reader, pp. 13-15

**Butterflies and Moths**, Reader, p. 14

**Classroom Plants**, Reader, p. 14

## Grade Three

### 1. Investigate the interactions of objects and organisms (L, E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Identify major causes of endangerment and extinction.	<b>Plant and Animal Populations</b> Reader, p. 15 <b>Dinosaurs and Fossils</b> Reader, p. 12 <b>Food Chains and Webs</b> Reader, p. 10
b. Distinguish between harmful and helpful human actions on the environment.	<b>Plant and Animal Life Cycles</b> Activity 12, Science Extension, p. 113 <b>Soil Science</b> Activity 11, pp. 99-105 Activity 11, Science, Technology and Society, p. 105 Reader, pp. 10-12 <b>Food Chains and Webs</b> Reader, p. 12
c. Describe methods to prevent pollution of the environment.	<b>Soil Science</b> Activity 11, Science, Technology and Society, p. 105

### 2. Explore the components of living systems. (L)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Classify and identify different types of seeds.	<b>Classroom Plants</b> Activity 1, pp. 15-21 Reader, pp. 11-12
b. Compare and contrast dicot and monocot seeds.	
c. Demonstrate photosynthesis.	DSM provides the opportunity to address this objective. See below: <b>Classroom Plants</b> Activity 8, pp. 73-79 Reader, p. 9 <b>Food Chains and Webs</b> Activity 3, pp. 31-37 Activity 3, Science Extension, p. 37 Activity 3, Science Challenge, p. 37
d. Show that plants grow from other parts and explain the germination of seeds.	<b>Classroom Plants</b> Activity 10, pp. 87-95 Reader, pp. 12-13 <b>Plant and Animal Life Cycles</b> Reader, pp. 3, 6
e. Label the parts and functions of a flower.	<b>Plant and Animal Life Cycles</b> Activity 8, pp. 75-82 Reader, p. 4
f. Explain methods of pollination.	<b>Classroom Plants</b> Reader, p. 10 <b>Plant and Animal Life Cycles</b> Reader, pp. 4-5
g. Understand the functions of the skeletal	

system and label major bones of the human body.	
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### 3. Identify and describe the appearance of stars in the night sky. (E, P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Locate and identify constellations as imaginary patterns of stars that remain fixed in shape from night to night.	<b>Solar System</b> Activity 12, pp. 101-110
b. Describe the actual nature of stars as distant suns that appear small and faint only because of their great distances.	<b>Solar System</b> Activity 11, pp. 93-100

### 4. Discover how internal and external forces affect the Earth's surface. (E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Describe the three major layers of the Earth.	<b>Earth Movements</b> Activity 1, pp. 13-19 Reader, pp. 2-3
b. Examine and identify rocks of different types (metamorphic, sedimentary, and igneous).	<b>Earth Movements</b> Activity 3, pp. 29-37 Reader, p. 15
c. Discuss places fossils can be found.	<b>Dinosaurs and Fossils</b> Activity 2, pp. 21-28 Reader, pp. 4-5, 13-15
d. Relate how internal forces affect the Earth's surface including earthquakes, and volcanoes.	<b>Earth Movements</b> Activity 6-12, pp. 55-110 Reader, pp. 6-11

### 5. Examine changes in matter. (P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Identify and demonstrate chemical changes.	<b>States of Matter</b> Reader, p. 12
b. Identify and demonstrate physical changes	DSM provides the opportunity to address this objective. See below: <b>States of Matter</b> Activity 4, 8-12, pp. 35-40, 65-101 Reader, pp. 7-11 <b>Soil Science</b> Activity 6, pp. 51-58 <b>Water Cycle</b> Activity 4-6, 8, 12, pp. 39-60, 69-76, 99-106 Reader, pp. 8-11

### 6. Analyze changes in matter. (E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Label an illustration of the water cycle.	<b>Weather Watching</b> Reader, pp. 4-5 <b>Water Cycle</b> Activity 13, pp. 107-110 Reader, pp. 10-11 <b>Weather Instruments</b>

	Reader, p. 6
b. Collect and graph weather data.	<b>Weather Instruments</b> Activity 1, 6, pp. 13-21, 51-57

## 7. Develop the process of measurement and related concepts (L, E, and P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Identify and compare differences among length, weight/mass, and capacity/volume using English and metric measures.	<b>States of Matter</b> 1-2, pp. 13-25 <b>Weather Watching</b> Activity 7, pp. 61-60 <b>Sink or Float</b> Activity 5, pp. 43-51 <b>Force and Motion</b> Activity 3-4, pp. 31-47 <b>Dinosaurs and Fossils</b> Activity 6-7, pp. 47-60 <b>Solar System</b> Activity 4-8, pp. 35-72
b. Choose appropriate units of measurement for length, weight/mass, and capacity/volume.	<b>States of Matter</b> 1-2, pp. 13-25 <b>Weather Watching</b> Activity 7, pp. 61-60 <b>Sink or Float</b> Activity 5, pp. 43-51 <b>Force and Motion</b> Activity 3-4, pp. 31-47 <b>Dinosaurs and Fossils</b> Activity 6-7, pp. 47-60 <b>Solar System</b> Activity 4-8, pp. 35-72
c. Convert between pints, quarts, and gallons.	
d. Convert miles to feet and yards.	
e. Compare metric measurements to English measurements.	
f. Using various types of instruments measure:	
length in millimeters, meters, kilometers	<b>States of Matter</b> Activity 1-2, pp. 13-25 <b>Weather Watching</b> Activity 7, pp. 61-60 <b>Sink or Float</b> Activity 5, pp. 43-51 <b>Force and Motion</b> Activity 3-4, pp. 31-47 <b>Dinosaurs and Fossils</b> Activity 6-7, pp. 47-60 <b>Solar System</b> Activity 4-8, pp. 35-72
mass in grams and kilograms	<b>Sink or Float</b> Activity 5, pp. 43-51
capacity/volume in milliliters and liters	<b>States of Matter</b> Activity 2, pp. 19-25

time to the nearest minute  temperature in Celsius and Fahrenheit	<b>States of Matter</b> Activity 6-7, 51-63, 89-96 <b>Weather Watching</b> Activity 2-3, pp. 21-36 <b>Weather Instruments</b> Activity 1, pp. 13-21
g. Use manipulatives and gridded regions to determine area of shapes.	

### Process Strands

The process strands listed below are to be incorporated into all content strands. Emphasis is on developing the ability to ask questions, to observe, to experiment, to measure, to use computers and calculators, to problem solve/reason, to use tools of science, to gather data, and to communicate findings.

#### Process Strands:

<i>Unifying Concepts and Processes</i>	<i>Science as Inquiry</i>	<i>Science and Technology</i>	<i>Science in Personal and Social Perspectives</i>	<i>History and Nature of Science</i>
Systems, order and organization	Abilities necessary to do scientific inquiry	Abilities of technological design	Personal health	Science as a human endeavor
Evidence, models, and explanation	Understandings about scientific inquiry	Understandings about science and technology	Characteristics and changes in populations	
Change, constancy and measurement		Abilities to distinguish between natural objects and those made by humans	Types of resources	
Evolution and equilibrium			Changes in environments	
Form and function			Science and technology in local challenges	

The DSM program is an inquiry-based program and addresses these process strands through activities and information in the Readers. Examples are listed below:

#### Unifying Concepts and Processes

**Butterflies and Moths**, Activity 11, pp. 97-104

**Plant and Animal Populations**, Activity 9-11, pp. 85-110

**Force and Motion**, Activity 4-5, pp. 41-49

**Plant and Animal Life Cycles**, Activity 9-10, pp. 83-96

#### Science as Inquiry

**Soil Science**, Activity 10-11, pp. 91-105

**States of Matter**, Activity 4-5, pp. 35-50

**Classroom Plants**, Activity 5, pp. 47-53

**Food Chains and Webs**, Activity 2-3, pp. 23-37

### **Science and Technology**

**Using Your Senses**, Activity 2, pp. 23-30

**Force and Motion**, Activity 5-12, pp. 49-117; Reader, p. 14

**States of Matter**, Reader, p. 13

**Electrical Circuits**, Activity 9-11, pp. 71-88; Reader, pp. 10-15

### **Science in Personal and Social Perspectives**

**Soil Science**, Activity 11, pp. 99-105; Reader, pp. 10-12

**Sound**, Reader, pp. 12-14

### **History and Nature of Science**

**Using Your Senses**, Reader, pp. 13-15

**Butterflies and Moths**, Reader, p. 14

**Classroom Plants**, Reader, p. 14

**Weather Instruments**, Reader, pp. 10-12

## Grade Four

### 1. Investigate the ability of living things to adapt to their environment. (L)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Compare food chains and food webs.	<b>Food Chains and Webs</b> Activity 11-12, pp. 89-101 Reader, pp. 7-9
b. Compare and contrast adaptations necessary for animals and plants to survive in different habitats.	<b>Food Chains and Webs</b> Activity 4-7, pp. 39-66 Reader, p. 5 <b>Dinosaurs and Fossils</b> Activity 8, pp. 61-66 <b>Plant and Animal Life Cycles</b> Reader, p.15

### 2. Explore the interactions of components in living systems. (L)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Identify part and basic functions of various body systems (circulatory, respiratory, digestive, skeletal and nervous systems).	
b. Analyze the circulatory system.	
c. Group animals in invertebrates and vertebrates.	
d. Explore the four requirements necessary for photosynthesis.	DSM provides the opportunity to address this objective. See below: <b>Food Chains and Webs</b> Activity 3, pp. 31-37 Activity 3, Science Challenge, p. 37 Activity 3, Science Extension, p. 37
e. Compare and contrast flowering and non-flowering plants.	<b>Plant and Animal Life Cycles</b> Reader, pp. 3-6

### 3. Communicate an understanding of the interaction of bodies in the solar system. (E, P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Explain why the apparent size of an object depends on its distance from the observer.	<b>Solar System</b> Activity 11, pp. 93-100
b. Describe the interaction between the Earth, Sun, Earth's moon and planets of the solar system.	<b>Solar System</b> Activity 1-2, 9, pp. 13-26, 73-81 Reader, pp. 2-3, 6-7
c. Describe the apparent motion of constellations in the night sky (east to west throughout the night, east to west throughout the year).	

4. Identify and describe the visual and telescopic appearance of planets and moons. (E, P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Locate and identify planets as bright, shining bodies that move in front of the background of constellations.	<b>Solar System</b> Activity 1, pp. 13-20
b. Explain the nature of telescopes as devices that collect light and enlarge the apparent size of distant objects to reveal otherwise unseen features.	<b>Solar System</b> Reader, p. 15
c. Describe the physical features of the moon (craters, plains, mountains) and the planets.	<b>Solar System</b> Reader, p. 7

5. Discover the effects of external forces on the Earth's surface. (E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Describe how external forces including heat, wind and water affect the Earth's surface.	<b>Earth Movements</b> Activity 7, 10, pp. 63-69, 87-96 Reader, pp. 10-13
b. Using maps, students identify watershed and run-off patterns of local areas.	Local Objective
c. Group landform examples by the forces that may have created them.	<b>Earth Movements</b> Reader, pp. 4-5, 10-13

6. Explore changes that occur in the Earth's atmosphere. (E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Analyze and predict the weather using the thermometer, anemometer, rain gauge, barometer and hygrometer.	<b>Weather Instruments</b> Activity 1-5, 11, pp. 13-50, 89-96
b. Recognize and collect data of extreme weather conditions.	

7. Discover how environmental concerns relate to the hydrosphere, lithosphere, and atmosphere (water, land, air). (E, L)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Describe ways to protect the air we breathe.	
b. Recognize the need for conservation of water resources.	<b>Water Cycle</b> Activity 11, Science, Technology and Society, p. 98 Activity 11, Science and Math, p. 98 Reader, p. 15
c. Discuss the ways man can protect and manage organisms in the environment.	

### 8. Investigate the changes in the state of matter. (P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Observe that matter occupies space and has mass and volume.	DSM provides the opportunity to address this objective. See below: <b>Water Cycle</b> Reader, p. 8
b. Demonstrate transformations of the states of matter.	<b>Water Cycle</b> Activity 4, 8, 12, pp. 39-44, 69-76, 99-106 Reader, pp. 8-11 <b>Weather Instruments</b> Activity 7, 9, pp. 59-66, 75-60 Reader, p. 6
c. Explore and classify physical and chemical changes.	DSM provides the opportunity to address this objective. See below: <b>Water Cycle</b> Activity 4, 8, 12, pp. 39-44, 69-76, 99-106 Reader, pp. 8-11 <b>Weather Instruments</b> Activity 7, 9, pp. 59-66, 75-60 Reader, p. 6

### 9. Examine the different forms of energy. (E, L, P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Differentiate energy as potential of kinetic energy.	
b. Identify and explore forms of energy such as heat, sound, light, or electricity.	<b>Electrical Circuits</b> Activity 1-12, pp. 13-94 Reader, pp. 2-11 <b>Magnets</b> Activity 1-12, pp. 13-81 Reader, pp. 2-12 <b>Sound</b> Activity 1-12, pp. 13-105 Reader, pp. 2-13
c. Demonstrate the use of the sun as an energy source.	<b>Water Cycle</b> Activity 11, 13, pp. 91-98, 107-114 Reader, pp. 10-11 <b>Weather Instruments</b> Reader, p. 6 <b>Solar System</b> Reader, p. 3

### 10. Develop the process of measurement and the concepts related to units of measurement. (L, E, P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Measure a given object using specified scientific measurement (English and/or metric).	<b>Dinosaurs and Fossils</b> Activity 6-7, pp. 47-60 <b>Solar System</b> Activity 4-8, pp. 35-72
b. Select and compare and convert within the appropriate standard (English and metric) system of measurement. *	<b>Dinosaurs and Fossils</b> Activity 6-7, pp. 47-60 <b>Solar System</b>

	Activity 4-8, pp. 35-72
c. Identify the attributes of length, weight, capacity/volume, mass, time and temperature using English and metric units of measurement.	<b>Dinosaurs and Fossils</b> Activity 6-7, pp. 47-60 <b>Solar System</b> Activity 4-8, pp. 35-72
d. Calculate and solve problems with elapsed time. *	<b>Food Chains and Webs</b> Activity 2-3, pp. 31-45 <b>Plant and Animal Life Cycles</b> Activity 2-3, 6, 9, pp. 23-41, 57-63, 83-89 <b>Water Cycle</b> Activity 5, pp. 45-51

### Process Strands

The process strands listed below are to be incorporated into all content strands. Emphasis is on developing the ability to ask questions, to observe, to experiment, to measure, to use computers and calculators, to problem solve/reason, to use tools of science, to gather data, and to communicate findings.

#### Process Strands:

<i>Unifying Concepts and Processes</i>	<i>Science as Inquiry</i>	<i>Science and Technology</i>	<i>Science in Personal and Social Perspectives</i>	<i>History and Nature of Science</i>
Systems, order and organization	Abilities necessary to do scientific inquiry	Abilities of technological design	Personal health	Science as a human endeavor
Evidence, models, and explanation	Understandings about scientific inquiry	Understandings about science and technology	Characteristics and changes in populations	
Change, constancy and measurement		Abilities to distinguish between natural objects and those made by humans	Types of resources	
Evolution and equilibrium			Changes in environments	
Form and function			Science and technology in local challenges	

The DSM program is an inquiry-based program and addresses these process strands through activities and information in the Readers. Examples are listed below:

#### Unifying Concepts and Processes

**Dinosaurs and Fossils**, Activity 9-10, pp. 67-82

**Plant and Animal Life Cycles**, Activity 9-10, pp. 83-96

**Earth Movements**, Activity 10-12, pp. 87-110

**Plant and Animal Life Cycles**, Activity 9-10, pp. 83-96

#### Science as Inquiry

**Food Chains and Webs**, Activity 2-3, pp. 23-37

**Sound**, Activity 9-11, pp. 73-98

**Electrical Circuits**, Activity 6-7, pp. 51-72

**Magnets**, Activity 4, pp.29-34

### **Science and Technology**

**Sound**, Activity 12, pp. 99-105

**Magnets**, Activity 11-12, pp. 71-81; Reader, p. 14

**Water Cycle**, Reader, pp. 14-15

**Electrical Circuits**, Activity 9-11, pp. 71-88; Reader, pp. 10-15

### **Science in Personal and Social Perspectives**

**Magnets**, Reader, pp. 14-15

**Sound**, Reader, pp. 12-14

**Water Cycle**, Reader, pp. 14-15

### **History and Nature of Science**

**Solar System**, Activity 2, Science and Social Studies, p. 26

**Magnets**, Reader, p. 13

**Weather Instruments**, Reader, pp. 10-12

## Grade Five

### 1. Identify and describe structures and functions in living systems. (L, E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Investigate levels of organization in organisms including cells, tissues, organs, organ systems, whole organisms, and ecosystems.	<b>You and Your Body</b> Activity 1-2, 4, 6-7, pp. 13-26, 33-39, 49-66 Reader, pp. 2-11
b. Explore ecosystems and biomes.	This objective is addressed in the grade four module <u>Food Chains and Webs</u> .

### 2. Identify and describe reproduction and heredity of organisms. (L, P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Define and recognize examples of sexual and asexual reproduction.	This objective is addressed in the grade six module <u>Plants in Our World</u> .
b. Explore how traits are used to classify individual inheritance patterns.	This objective is addressed in the grade six module <u>DNA-From Genes to Proteins</u> .

### 3. Determine the factors that influence the regulation and behavior of organisms. (L, E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Identify and describe resources needed to grow, reproduce, maintain, and survive in a changing environment.	This objective is addressed in the grade four module <u>Food Chains and Webs</u> and the grade six module <u>Plants in Our World</u> .
b. Investigate ways organisms adapt to their environment.	<b>Oceans</b> Activity 10-11, pp.113-134 Reader, pp. 12-13

### 4. Examine the physical factors of populations as they relate to the formation of an ecosystem. (L, E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Identify, describe, and illustrate the roles among producers, consumers, and decomposers in a food web.	This objective is addressed in the grade four module <u>Food Chains and Webs</u> .
b. Investigate resources and other factors (living and nonliving) that promote and limit growth of populations in an ecosystem...	<b>Pollution</b> Activity 6, pp. 47-52 Activity 6, Science and the Arts, p. 52 Activity 10, pp. 71-76 Activity 10, Science and Social Studies, p. 76 Reader, pp. 4, 9-1

### 5. Explore the diversity and adaptations of organisms. (L, E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Classify organisms by their similarities.	
b. Explore and explain biological adaptations in a particular environment.	<b>Oceans</b> Activity 10-11, pp. 113-134 Reader, pp. 12-13
c. Research and investigate environmental changes and the inability of a species to adapt.	<b>Pollution</b> Reader, p. 9

## 6. Investigate the structure of the Earth. (E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Investigate the structure of the atmosphere (gas-air), hydrosphere (liquid-water), and lithosphere (solid-land).	<b>Oceans</b> Activity 1, pp. 13-21 Reader, p. 2 <b>Erosion</b> Reader, pp. 2-4 <b>Rocks and Minerals</b> Reader, p. 2 <b>Weather Forecasting</b> Reader, p.2
b. Examine how organisms affect the composition of the Earth and its atmosphere.	<b>Pollution</b> Activity 9, Science, Technology and Society, p. 70 Activity 11, Science and Social Studies, p. 76 Reader, pp. 6-7
c. Analyze processes that cause changes on Earth.	<b>Erosion</b> Activity 1-2, 9-12, pp. 13-27, 75-104 Reader, pp. 2-13 <b>Oceans</b> Activity 9, pp. 99-111 Reader, pp. 4-6, 9 <b>Weather Forecasting</b> Activity 12, pp. 87-93 Reader, pp. 8, 12-13
d. Explore fossils as indicators of how life and environmental conditions have changed.	<b>Rocks and Minerals</b> Activity 2, pp. 21-27 Reader, p.15

## 7. Investigate the Earth as part of the solar system. (E, P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Explore how the Earth's motion defines the day and the year and influences the phases of the moon and eclipses.	This objective is addressed in the grade six module <u>Earth, Moon and Sun</u> .
b. Explain how gravity influences the action of tides.	<b>Oceans</b> Activity 9, pp. 99-11
c. Explain and illustrate how the tilt of the Earth's axis and Earth's revolution around the Sun create the seasons.	This objective is addressed in the grade six module <u>Earth, Moon and Sun</u> .

## 8. Identify properties and changes of matter. (E, P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Observe and explore physical and chemical properties such as density, boiling/freezing point, and solubility of a substance.	This objective is addressed in the grade six module <u>Matter and Change</u> .
b. Explore, observe, discuss, and record physical and chemical changes using everyday substance.	This objective is addressed in the grade six module <u>Matter and Change</u> . See below also. <b>Rocks and Minerals</b> Activity 2, 6, 8, pp. 21-28, 47-54, 61-67 <b>Oceans</b> Activity 2, 5, pp. 23-30, 55-63
c. Recognize elements that combine	This objective is addressed in the grade six

chemically to produce compounds.	module Matter and Change.
d. Demonstrate the ability to use simple measuring devices using metric and English units.	<b>Simple Machines</b> Activity 1, 3-6, 8-10, pp. 13-18, 25-55, 65-81 <b>Flight and Rocketry</b> Activity 8-9, pp. 81-97 <b>Weather Forecasting</b> Activity 3, pp. 25-32 <b>You and Your Body</b> Activity 5, pp. 41-48 <b>Rocks and Minerals</b> Activity 10, Science and Math, p. 84

### 9. Investigate the effect motions and forces have on objects. (E, L, P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Explore, measure and graph the motion of an object.	DSM provides the opportunity to address this objective. See below: <b>Flight and Rocketry</b> Activity 8, pp. 81-89
b. Explore and measure the effect of force on an object.	<b>Flight and Rocketry</b> Activity 8-9, 11-12, pp. 81-97, 111-130 <b>Simple Machines</b> Activity 1-6, 8-12, pp. 13-56, 63-95

### 10. Examine the transformations of forms of energy. (P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Design and construct simple and compound machines.	<b>Simple Machines</b> Activity 2, 4-12, pp. 19-24, 33-91 Activity 12, Science Challenge, p. 95
b. Design and construct electrical circuits (open, closed, series, parallel).	<b>Electromagnetism</b> Activity 5, 8, pp. 37-42, 57-62
c. Design and construct an electromagnet.	<b>Electromagnetism</b> Activity 6, pp. 43-46

### Process Strands

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#### Process Strands:

<i>Unifying Concepts and Processes</i>	<i>Science as Inquiry</i>	<i>Science and Technology</i>	<i>Science in Personal and Social Perspectives</i>	<i>History and Nature of Science</i>
Systems, order and organization	Abilities necessary to do scientific inquiry	Abilities of technological design	Personal health	Science as a human endeavor
Evidence, models, and explanation	Understandings about scientific inquiry	Understandings about science and technology	Characteristics and changes in populations	
Change, constancy and measurement		Abilities to distinguish between natural objects and those made by humans	Types of resources	

Evolution and equilibrium			Changes in environments	
Form and function			Science and technology in local challenges	

The DSM program is an inquiry-based program and addresses these process strands through activities and information in the Readers. Examples are listed below:

**Unifying Concepts and Processes**

**You and Your Body**, Activity 9-11, pp. 67-89

**Erosion**, Activity 10-12, pp. 83-104

**Color and Light**, Activity 2-3, pp. 19-35

**Science as Inquiry**

**Flight and Rocketry**, Activity 8-9, pp. 81-97

**Pollution**, Activity 10, pp. 71-76

**Oceans**, Activity, 2-3, pp. 23-41

**Science and Technology**

**Flight and Rocketry**, Reader, pp. 7-13

**Pollution**, Reader, pp. 8, 12, 15

**Electromagnetism**, Activity, 6-7, pp. 43-56; Reader, pp. 10-15

**Science in Personal and Social Perspectives**

**You and Your Body**, Activity 12, pp. 85-89

**Pollution**, Activity 1-3, pp. 13-30; Reader, pp. 14-15

**Rocks and Minerals**, Activity 11, pp. 85-92

**History and Nature of Science**

**Flight and Rocketry**, Reader, pp. 6-15

**Simple Machines**, Reader, pp. 12-13

**Color and Light**, Activity, 1, Science and Social Studies, p. 18

## Grade Six

### 1. Investigate structure and function in living systems. (L, E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Identify, compare, and contrast levels of organization including cells.	<b>You and Your Body</b> Activity 1-2, 4, 6-7, pp. 13-26, 32-39, 42-60 Reader, pp. 2-11 <b>Plants in Our World</b> Activity 1-2, 4, pp. 13-33, 41-47 <b>DNA-From Genes to Proteins</b> Reader, pp. 2-7
b. Compare and contrast patterns and interactions of ecosystems and biomes.	

### 2. Compare and classify the reproduction and heredity of organisms. (L)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Differentiate between sexual and asexual reproduction.	<b>Plants in Our World</b> Reader, pp. 6-8, 10, 12, 17, 19-20 <b>DNA-From Genes to Proteins</b> Reader, pp. 14, 18
b. Determine how traits are used to classify individual inherited patterns.	<b>DNA-From Genes to Proteins</b> Reader, pp. 15-17

### 3. Explore how changing resources will influence the regulation and behavior of organisms. (L, E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Evaluate the significance of resources required by organisms.	<b>Plants in Our World</b> Activity 9, pp. 81-86 Reader, pp. 3-4 <b>DNA-From Genes to Proteins</b> Reader, pp. 10-11
b. Investigate, compare/contrast ways organisms adapt to their environment.	<b>Plants in Our World</b> Reader, pp. 6-7, 22

### 4. Explore how different populations determine the formation of an ecosystem. (L, E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Compare/contrast the roles among producers, consumers, and decomposers in a food web.	
b. Manipulate resources and other factors (living and nonliving) that promote and limit growth of populations in an ecosystem.	

### 5. Explore the unique characteristics and adaptations of organisms. (L, E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Evaluate and chart the similarities of organisms.	<b>Plants in Our World</b> Reader, pp. 9-20
b. Propose and relate environmental changes	

and the adaptive characteristics that influence the extinction of a species.	
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## 6. Model the structure of the Earth system past and present. (E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Construct and explain the structure of the atmosphere (gas-air), hydrosphere (liquid-water), lithosphere (solid-land), and changes that occur within.	<b>Erosion</b> Reader, pp. 2-4 <b>Oceans</b> Activity 1, pp. 13-21 Reader, p. 2 <b>Weather Forecasting</b> Reader, p. 2 <b>Rocks and Minerals</b> Reader, p. 2 <b>Earth Processes</b> Activity 2, pp. 23-28 Reader, pp. 2-10
b. Examine the changes processes that alter the Earth's system.	<b>Erosion</b> Activity 1-2, 9-12, pp. 13-27, 75-104 Reader, pp. 2-13 <b>Oceans</b> Activity 9, pp. 99-111 Reader, pp. 4-6, 9 <b>Weather Forecasting</b> Activity 12, pp. 87-93 Reader, pp. 8, 12-13 <b>Earth Processes</b> Activity 3-8, pp. 29-79 Reader, pp. 4-20
c. Analyze fossils as indicators of how life and environmental conditions have changed.	<b>Rocks and Minerals</b> Activity 2, pp. 21-27 Reader, p. 15 <b>Earth Processes</b> Activity 4, pp. 39-46 Reader, p. 22

## 7. Investigate the Earth in relation to the solar system. (E, P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Demonstrate how the Earth's motion influences the day, year, phases of the moon, and eclipses.	<b>Earth, Moon and Sun</b> Activity, 6, 10-11, pp. 53-60, 93-109 Reader, pp. 8-10, 14-15, 18-19
b. Explore how gravity influences the motion of all celestial bodies.	<b>Astronomy</b> Reader, p. 3 <b>Earth, Moon and Sun</b> Reader, p. 5
c. Demonstrate how the tilt of the Earth's axis and Earth's revolution around the sun create the seasons.	<b>Astronomy</b> Activity 5, pp. 51-58 <b>Earth, Moon and Sun</b> Activity 9, pp. 81-92 Reader, pp. 11-12

## 8. Investigate structure, properties, and changes of matter. (E, P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Analyze properties such as density, boiling point, and solubility of a substance.	<b>Matter and Change</b> Activity 1, 3, pp. 13-19, 28-35 Reader, pp. 13-15
b. Record and interpret physical and chemical changes using everyday substances.	<b>Oceans</b> Activity 2, 5, pp. 23-30, 55-63 <b>Rocks and Minerals</b> Activity 2, 6, 8, pp. 21-28, 47-54, 61-67 <b>Matter and Change</b> Activity 2-3, 11-13, pp. 21-35, 93-109 Reader, pp. 13-20
c. Differentiate between common elements that combine chemically to produce compounds.	<b>Matter and Change</b> Activity 5, 7, 12, pp. 45-51, 63-68, 99-104 Reader, pp. 6-8, 18
d. Demonstrate the ability to use simple measuring devices using metric and English units.	<b>Simple Machines</b> Activity 1, 3-4, 8-10, pp. 13-18, 25-55, 65-81 <b>Flight and Rocketry</b> Activity 8-9, 81-97 <b>Rocks and Minerals</b> Activity 10, Science and Math, p. 84 <b>Weather Forecasting</b> Activity 3, pp. 25-32 <b>Matter and Change</b> Activity 1-2, pp. 13-27 <b>Newton's Toy Box</b> Activity 7-9, pp. 49-65 <b>Earth, Moon and Sun</b> Activity 3-4, pp. 29-44

## 9. Evaluate the effect of force on the motion of an object. (E, L, P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Analyze, measure, and graph the motion of an object.	DSM provides the opportunity to address this objective. See below: <b>Newton's Toy Box</b> Activity 7-9, pp. 49-65
b. Experiment and measure the effect of force on an object.	<b>Simple Machines</b> Activity 1-6, 8-12, pp. 13-56, 63-95 <b>Flight and Rocketry</b> Activity 8-9, pp. 81-97 <b>Newton's Toy Box</b> Activity 2, 8-9, pp. 19-23, 55-65

## 10. Examine the transfer of energy in many different forms. (E, L, P)

<i>OBJECTIVES</i>	<i>DSM /ACTIVITY</i>
a. Observe and manipulate energy as potential or kinetic.	DSM provides the opportunity to address this objective. See below: <b>Flight and Rocketry</b> Activity 8-9, 12, pp. 81-97, 121-130 Reader, p. 14 <b>Newton's Toy Box</b> Activity 8-10, pp. 55-72

b. Investigate forms of energy such as heat, sound, light, or electricity.	<b>Color and Light</b> Activity 1, pp. 13-18 Reader, pp. 2-9 <b>Electromagnetism</b> Activity 1-11, pp. 13-83 Reader, pp. 2-13 <b>Electrical Connections</b> Activity 1-13, pp. 13-106 Reader, pp. 2-20
c. Recognize the sun as a major source of energy.	<b>Weather Forecasting</b> Reader, p. 4 <b>Oceans</b> Activity 5, pp. 55-63 <b>Plants in Our World</b> Reader, p. 3 <b>DNA-From Genes to Proteins</b> Reader, p. 10

### Process Strands

The process strands listed below are to be incorporated into all content strands. Emphasis is on developing the ability to ask questions, to observe, to experiment, to measure, to use computers and calculators, to problem solve/reason, to use tools of science, to gather data, and to communicate findings.

#### Process Strands:

<i>Unifying Concepts and Processes</i>	<i>Science as Inquiry</i>	<i>Science and Technology</i>	<i>Science in Personal and Social Perspectives</i>	<i>History and Nature of Science</i>
Systems, order and organization	Abilities necessary to do scientific inquiry	Abilities of technological design	Personal health	Science as a human endeavor
Evidence, models, and explanation	Understandings about scientific inquiry	Understandings about science and technology	Characteristics and changes in populations	
Change, constancy and measurement		Abilities to distinguish between natural objects and those made by humans	Types of resources	
Evolution and equilibrium			Changes in environments	
Form and function			Science and technology in local challenges	

The DSM program is an inquiry-based program and addresses these process strands through activities and information in the Readers. Examples are listed below:

#### Unifying Concepts and Processes

**You and Your Body**, Activity 9-11, pp. 67-89

**Erosion**, Activity 10-12, pp. 83-104

**Color and Light**, Activity 2-3, pp. 19-35

**Newton's Toy Box**, Activity 7-9, pp. 49-65

**Electrical Connections**, Activity 8-10, pp. 67-88

### **Science as Inquiry**

**Flight and Rocketry**, Activity 8-9, pp. 81-07

**Pollution**, Activity 10, pp. 71-76

**Oceans**, Activity, 2-3, pp. 23-41

**Matter and Change**, Activity 12, pp. 99-104

**Plants in Our World**, Activity 3, pp. 35-40

### **Science and Technology**

**Flight and Rocketry**, Reader, pp. 7-13

**Pollution**, Reader, pp. 8, 12, 15

**Electromagnetism**, Activity, 6-7, pp. 43-56; Reader, pp. 10-15

**Electrical Connections**, Reader, pp. 13-22

**Astronomy**, Reader, pp. 16-19

### **Science in Personal and Social Perspectives**

**You and Your Body**, Activity 12, pp. 85-89

**Pollution**, Activity 1-3, pp. 13-30; Reader, pp. 14-15

**Rocks and Minerals**, Activity 11, pp. 85-92

**DNA-From Genes to Proteins**, Activity 12, pp. 101- 108; Reader, p. 22

**Earth Processes**, Reader, pp. 19-20

### **History and Nature of Science**

**Flight and Rocketry**, Reader, pp. 6-15

**Simple Machines**, Reader, pp. 12-13

**Color and Light**, Activity, 1, Science and Social Studies, p. 18

**Astronomy**, Activity 1, Science and Social Studies, p. 29; Reader, pp. 22-23

**Earth, Moon and Sun**, Reader, p. 20

**Matter and Change**, Reader, pp. 21-22

## Grade Seven

### 1. Compare and contrast structure and function in living systems. (L)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Compare and contrast plant and animal cells through investigation.	<b>Plants in Our World</b> Activity 1, pp. 13-25 Reader, p. 2 <b>DNA-From Genes to Proteins</b> Reader, pp. 6-7
b. Describe the process of respiration and the use of its products.	<b>Plants in Our World</b> Activity 10, pp. 87-94 Reader, p. 4 <b>DNA-From Genes to Proteins</b> Reader, p. 11
c. Illustrate the parts of the digestive system and the interaction of each part.	
d. Illustrate the parts of and interaction between the respiratory and circulatory system.	
e. Illustrate the parts of the excretory system and the interaction of each part.	

### 2. Explore the processes of the reproduction and heredity of organisms. (L)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Distinguish genes as sections of DNA molecules that carry the genetic code for inherited traits.	<b>DNA-From Genes to Proteins</b> Activity 10, pp. 87-94 Reader, pp. 5, 16-17
b. Examine the concepts of homozygous and heterozygous traits.	<b>DNA-From Genes to Proteins</b> Reader, pp. 16-17
c. Explain mitosis and relate it to an organism's growth and repair processes.	<b>DNA-From Genes to Proteins</b> Reader, p. 14

### 3. Determine how organisms co-exist in their environment. (L)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Demonstrate that cells interact with their environment.	<b>Plants in Our World</b> Activity 4, pp. 41-48
b. Investigate homeostasis as it relates to plants and animals.	

### 4. Explore how environmental factors of population influence the formation of an ecosystem. (L, E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Describe the process of photosynthesis and the use of its products.	<b>Plants in Our World</b> Activity 9, pp. 81-86 Reader, p. 3 <b>DNA-From Genes to Proteins</b> Reader, p. 10
b. Design an experiment in plant behavior to include responses to water, gravity, and light.	<b>Plants in Our World</b> Activity 3, pp. 35-40
c. Investigate and research environmental concerns of the land, water, and air.	<b>Plants in Our World</b> Activity 10, Science, Technology and Society,

	p. 93 <b>Electrical Connections</b> Activity 4, Science and Health, p. 42
d. Analyze the importance of biological diversity in communities and ecosystems.	

### 5. Examine survival strategies of organisms over many generations. (L)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Apply concepts of adaptation by analyzing how organisms are classified into groups and subgroups.	
b. Research animal adaptations and behaviors as related to survival strategies.	
c. Explain how natural and man-made pressures cause extinction.	

### 6. Explore the composition and changes of the Earth system. (E, P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Identify minerals by using any or all of the following tests: streak, cleavage, fracture, hardness, specific gravity, and special properties.	This objective is addressed in the grade six module <u>Rocks and Minerals</u> .
b. Research and explain how crustal movements result in earthquakes, volcanoes, mountain formation. etc.	<b>Earth Processes</b> Activity 7-8, 10, 12, pp. 63-79, 89-95, 121-129 Reader, pp. 4-10
c. Distinguish between chemical and physical weathering.	<b>Earth Processes</b> Activity 3, pp. 29-37
d. Identify how forces such as erosion and deposition create landforms.	
e. Research landforms and fossils specific to Mississippi.	Local Objective
f. Compare properties and composition of salt water, fresh water, and brackish water.	
g. Investigate the interactive forces that produce weather to include moisture, temperature, fronts, air masses, and cloud formations.	

### 7. Explain the causes of lunar phases, eclipses, and Earth's seasons. (E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Distinguish between radiating objects (the sun and the stars) and reflecting objects (the planets and their moons).	DSM provides the opportunity to address this objective. See below: <b>Earth, Moon and Sun</b> Reader, pp. 3-4, 21-23 <b>Astronomy</b> Reader, pp. 2-8
b. Characterize lunar phases in terms of their appearance, their visibility at a given time of day or night, and their progression through time.	<b>Earth, Moon and Sun</b> Activity 10, pp. 93-101 Reader, pp. 14-15
c. Illustrate the relationship between lunar	DSM provides the opportunity to address this

phases and the phase angle between the sun and the moon as seen from Earth.	objective. See below: <b>Earth, Moon and Sun</b> Activity 10, pp. 93-101 Reader, pp. 14-15
d. Illustrate the alignments of the Earth, the moon, and the sun, which give rise to solar and lunar eclipses and explain why these eclipses do not occur every month.	<b>Earth, Moon and Sun</b> Activity 11, pp. 103-109 Reader, pp. 18-19
e. Explain how the position of the Earth in relation to the sun has an effect on seasonal weather changes.	<b>Earth, Moon and Sun</b> Activity 9, pp. 81-92 Reader, pp. 11-12 <b>Astronomy</b> Activity 5, pp. 51-60

## 8. Investigate chemical and physical properties of matter. (P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Determine and measure experimentally: boiling point, melting point, density, and solubility.	<b>Matter and Change</b> Activity 1, 3, pp. 13-19, 29-35 Reader, pp. 13-15
b. Demonstrate understanding that chemical and physical properties determine a substance's identity.	<b>Matter and Change</b> Activity 10, pp. 85-89 Reader, p. 20
c. Compare common metals, nonmetals, and metalloids by name, symbol, and characteristics.	<b>Matter and Change</b> Reader, pp. 4-5
d. Recognize elements that will combine to form compounds.	<b>Matter and Change</b> Activity 5, 7, 12, pp. 45-51, 63-68, 99-104 Reader, pp. 4-8
e. Relate density to mass and volume.	<b>Matter and Change</b> Activity 1, pp. 13-19 Reader, pp. 13-14

## 9. Investigate motion and forces. (P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Using SI units, measure and graph the motion of an object by its position, direction of motion, and speed.	DSM provides the opportunity to address this objective. See below: <b>Newton's Toy Box</b> Activity 7-9, pp. 49-65
b. Investigate Newton's Laws of Motion.	<b>Newton's Toy Box</b> Activity 1, 3, 7, 10-13, pp. 13-17, 25-31, 49-54, 67-90 Reader, pp. 10-12
c. Using the scientific method, design an experiment to test how different types of surfaces affect friction.	<b>Newton's Toy Box</b> Activity 7, pp. 49-54

## 10. Investigate the sources of energy. (P, E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Investigate the sun as a major source of energy.	<b>Plants in Our World</b> Activity 9, pp. 81-86 Reader, p. 3 <b>DNA-From Genes to Proteins</b> Reader, p. 10
b. Compare and contrast the three forms of thermal energy flow.	<b>Earth Processes</b> Activity 12, pp. 105-110 Activity 12, Science Challenge, p. 110
c. Research one or more of the sources of energy (nuclear, solar, wind, geothermal, hydro).	

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#### Process Strands:

<i>Unifying Concepts and Processes</i>	<i>Science as Inquiry</i>	<i>Science and Technology</i>	<i>Science in Personal and Social Perspectives</i>	<i>History and Nature of Science</i>
Systems, order and organization	Abilities necessary to do scientific inquiry	Abilities of technological design	Personal health	Science as a human endeavor
Evidence, models, and explanation	Understandings about scientific inquiry	Understandings about science and technology	Characteristics and changes in populations	
Change, constancy and measurement		Abilities to distinguish between natural objects and those made by humans	Types of resources	
Evolution and equilibrium			Changes in environments	
Form and function			Science and technology in local challenges	

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#### Unifying Concepts and Processes

**Newton's Toy Box**, Activity 7-9, pp. 49-65

**Electrical Connections**, Activity 8-10, pp. 67-88

**Matter and Change**, Activity 4-5, pp. 45-51

#### Science as Inquiry

**Matter and Change**, Activity 12, pp. 99-104

**Plants in Our World**, Activity 3, pp. 35-40

**Electrical Connections**, Activity 8-10, pp. 67-88

### **Science and Technology**

**Electrical Connections**, Reader, pp, 13-22

**Astronomy**, Reader, pp. 16-19

**DNA-From Genes to Proteins**, Activity 13, Science, Technology and Society, p. 115

### **Science in Personal and Social Perspectives**

**DNA-From Genes to Proteins**, Activity 12, pp. 101- 108; Reader, p. 22

**Earth Processes**, Reader, pp. 19-20

**Plants in Our World**, Activity 10, Science, Technology and Society, p. 83

### **History and Nature of Science**

**Astronomy**, Activity 1, Science and Social Studies, p. 29; Reader, pp. 22-23

**Earth, Moon and Sun**, Reader, p. 20

**Matter and Change**, Reader, pp. 21-22

## Grade Eight

### 1. Analyze and relate structure and function in living systems. (L)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Analyze body systems and their functions.	
b. Relate interactions among body systems.	
c. Identify the parts of and show the interaction between the reproductive and endocrine systems.	
d. Examine diseases that are the result of body system failures or infection by other organisms	

### 2. Analyze genetic continuity of organisms. (L)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Define meiosis by relating the process to genetic continuity.	<b>DNA-From Genes to Proteins</b> Reader, p. 18
b. Compare and contrast genotype and phenotype.	<b>DNA-From Genes to Proteins</b> Reader, pp. 16-17
c. Explain the advantages and disadvantages of both hybrid and purebred species of plants and animals.	
d. Examine genes as a section of a DNA molecule that carries the genetic code for inherited traits.	<b>DNA-From Genes to Proteins</b> Activity 10, pp. 87-94 Reader, pp. 5, 16-17

### 3. Determine the economic factors that influence the regulation and behavior of organisms.(L, E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Appraise the economic factors associated with regulations and protection of the environment.	
b. Explain environmental degradation to include overpopulation, biodiversity, sea-level rise, and enhanced greenhouse effect.	

### 4. Examine the physical factors of populations as they relate to the formation of ecosystems. (L, E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Analyze the adaptation of representative organisms to aquatic or terrestrial environments.	
b. Evaluate the effects of urbanization on aquatic or terrestrial ecosystems.	
c. Analyze how predation and food webs help structure communities.	

5. Investigate atmospheric movements that affect the Earth's systems. (E, P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Analyze the cycles including nitrogen, water, carbon dioxide, and oxygen.	<b>Plants in Our World</b> Activity 5-6, pp. 49-62 Reader, pp. 3-4 <b>DNA-From Genes to Proteins</b> Reader, p. 10-11
b. Use weather maps for analyzing and predicting weather.	
c. Construct a weather map to forecast the weather over a region, giving temperature in degrees Celsius.	

6. Investigate the Earth's geological past. (E, L)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Identify the components/stages of a geological timetable and discuss how the environment (including animals and landforms) has changed in each period.	<b>Earth Processes</b> Reader, p. 22
b. Describe methods and tools used in dating rocks and fossils.	<b>Earth Processes</b> Reader, p. 22
c. Discuss Mississippi's geologic areas.	<u>Local Objective</u>

7. Describe the appearance and nature of our galaxy and the universe. (E)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Explain the relationship between distance and light-travel time (light year).	<b>Earth, Moon and Sun</b> Reader, p. 4 <b>Astronomy</b> Activity 8, pp. 77-84 Reader, p. 9
b. Identify and describe deep-sky objects visible from Earth (diffuse nebulae, galactic and globular clusters, planetary nebulae, supernova remnants, "spiral nebulae").	<b>Earth, Moon and Sun</b> Reader, p. 4 <b>Astronomy</b> Activity 11, pp. 101-108 Reader, pp. 14-15
c. Identify and describe the Milky Way as the galaxy to which we belong.	<b>Earth, Moon and Sun</b> Reader, p. 4 <b>Astronomy</b> Activity 11, pp. 101-108 Reader, p. 9
d. Identify and describe our galaxy in terms of its components (core of older stars, spiral arms of gas and dust with younger stars, halo, and "dark matter") and our location within it.	<b>Earth, Moon and Sun</b> Reader, p. 4 <b>Astronomy</b> Activity 11, pp. 101-108 Reader, p. 9
e. Identify and describe "spiral nebulae" as distant galaxies.	
f. Identify and describe different types of galaxies in terms of their shape (spiral, barred spiral, elliptical, irregular) and level of activity.	<b>Earth, Moon and Sun</b> Reader, p. 4 <b>Astronomy</b> Activity 11, pp. 101-108

## 8. Analyze the properties of matter. (P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Determine experimentally physical and chemical properties including density, conductivity, and reactions with water, acids and bases.	<b>Matter and Change</b> Activity 1, 3, 10, pp. 13-19, 29-35, 85-92
b. Interpret information given on the periodic table to predict reactions between elements.	<b>Matter and Change</b> Activity 4-5, pp. 37-51 Reader, pp. 4-8
c. Write simple formulas for compounds.	<b>Matter and Change</b> Activity 5, 12-13, pp. 45-51, 99-109
d. Distinguish among atoms, ions, and molecules.	<b>Matter and Change</b> Activity 4-6, pp. 37-61 Reader, pp. 2-3, 6
e. Determine the density of regular and irregular objects.	<b>Matter and Change</b> Activity 1, pp. 13-19
f. Determine experimentally how acidic or basic a substance is using a pH scale indicator.	<b>Matter and Change</b> Activity 10-11, pp. 85-97
g. Introduce the factor label method for unit conversions in the metric system.	

## 9. Explore the application of simple and complex machines. (P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Apply and demonstrate Newton's Three Laws of Motion using simple machines.	<b>Newton's Toy Box</b> Activity 1, 3, 7, 10-13, pp. 13-17, 25-31, 49-54, 67-90 Reader, pp. 10-12
b. Design and construct simple and complex machines.	<b>Newton's Toy Box</b> Activity 7-10, pp. 49-72

## 10. Investigate the transfer of energy. (P)

<i>OBJECTIVES</i>	<i>DSM ACTIVITY</i>
a. Measure the transfer of heat between two objects using the Celsius scale.	
b. Illustrate wave motion in different media.	<b>Earth Processes</b> Activity 8, pp. 71-79
c. Research and discuss energy transformation.	<b>Electrical Connections</b> Activity 2, 11, pp. 21-26, 89-94 Reader, pp. 13-16 <b>Newton's Toy Box</b> Activity 7-10, pp. 49-72 Reader, p. 14 <b>Plants in Our World</b> Activity 9-10, pp. 81-94 Reader, p. 3-4 <b>DNA-From Genes to Proteins</b> Reader, pp. 10-11
d. Convert on energy form to another.	<b>Electrical Connections</b> Activity 2, 11, pp. 21-26, 89-94

	Reader, pp. 13-16 <b>Newton's Toy Box</b> Activity 7-10, pp. 49-72 Reader, p. 14 <b>Plants in Our World</b> Activity 9-10, pp. 81-94 Reader, p. 3-4 <b>DNA-From Genes to Proteins</b> Reader, pp. 10-11
e. Analyze mechanical waves (sound waves, water waves, earthquake waves, etc.) and electromagnetic waves (light, infrared, x-rays, etc.).	<b>Earth Processes</b> Activity 8, pp. 71-79

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Evolution and equilibrium			Changes in environments	
Form and function			Science and technology in local challenges	

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#### Unifying Concepts and Processes

**Newton's Toy Box**, Activity 7-9, pp. 49-65

**Electrical Connections**, Activity 8-10, pp. 67-88

**Matter and Change**, Activity 4-5, pp. 45-51

#### Science as Inquiry

**Matter and Change**, Activity 12, pp. 99-104

**Plants in Our World**, Activity 3, pp. 35-40

**Electrical Connections**, Activity 8-10, pp. 67-88

### **Science and Technology**

**Electrical Connections**, Reader, pp, 13-22

**Astronomy**, Reader, pp. 16-19

**DNA-From Genes to Proteins**, Activity 13, Science, Technology and Society, p. 115

### **Science in Personal and Social Perspectives**

**DNA-From Genes to Proteins**, Activity 12, pp. 101- 108; Reader, p. 22

**Earth Processes**, Reader, pp. 19-20

**Plants in Our World**, Activity 10, Science, Technology and Society, p. 83

### **History and Nature of Science**

**Astronomy**, Activity 1, Science and Social Studies, p. 29; Reader, pp. 22-23

**Earth, Moon and Sun**, Reader, p. 20

**Matter and Change**, Reader, pp. 21-22