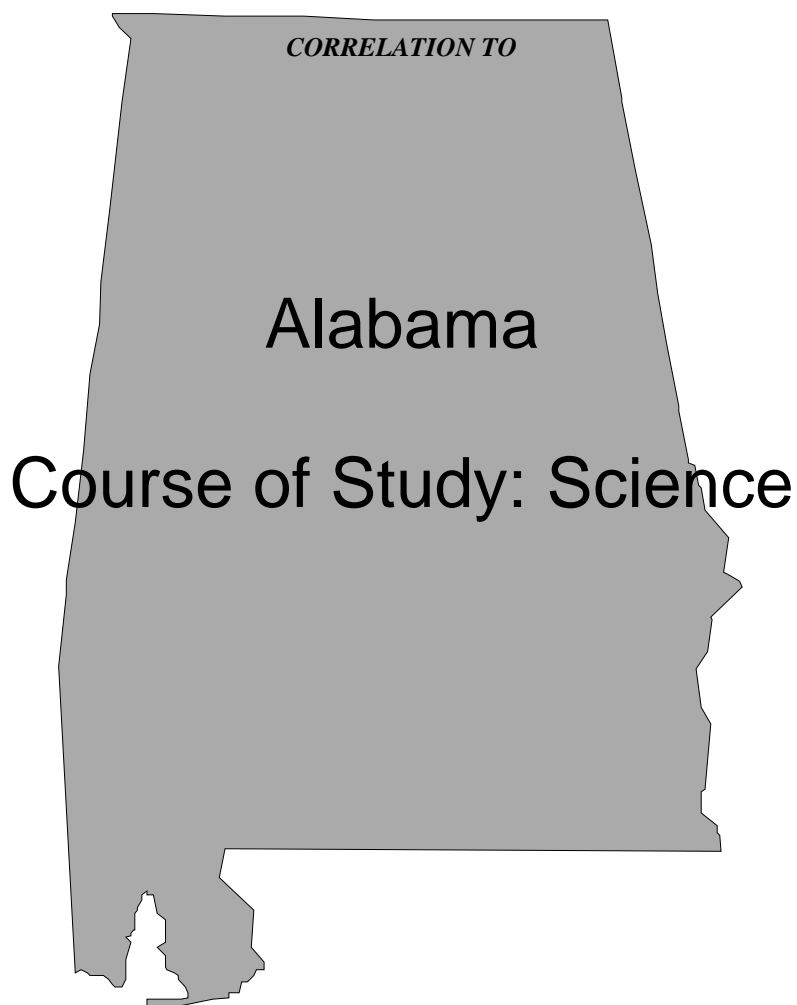


DELTA SCIENCE MODULES
(DSM)
Grades K-8



Alabama Course of Study: Science
Correlation
With
Delta Science Modules
(DSM)

Please note that this correlation includes *representative* examples of investigations and activities from the Delta Science Module Program that address the Alabama Science Standards. A *citation does not reflect all* of the investigations or activities from DSM that might address a particular indicator.

Scientific Processes Grade Kindergarten Content Standards

PROCESS AND APPLICATION

Process and Application

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
<p>1. Identify questions that can be answered through scientific investigations. Examples: Do bees sleep? What is rain made of?</p>	<p>Properties Activity 10, 11 Sunshine and Shadows Activity 3, 6 Investigating Water Activity 3, 5, 7, 10</p>
<p>2. Use appropriate tools and technology resources to gather, analyze, and interpret data. Examples: hand lenses, balances, droppers, computers, maps</p>	<p>Finding the Moon Activity 7, 8 From Seed to Plant Activity 1, 3, 5, 6 Observing an Aquarium Activity 3-6</p>
<p>3. Demonstrate the ability to perform safe and appropriate manipulation of materials, living organisms, scientific equipment, and technology. Examples: identifying ways to care properly for fish in an aquarium, wearing safety goggles</p>	<p><i>All DSM activities are designed with safety in mind. Caution warnings are used where appropriate.</i></p> <p>Observing an Aquarium Activity 3-5 Investigating Water Activity 4-7 Sunshine and Shadows Activity 8-11</p>
<p>4. Use appropriate skills to design and conduct a scientific investigation.</p> <ul style="list-style-type: none"> • Acquiring, processing, and interpreting data Example: identifying objects that make darkest shadows • Discussing cause and effect (dependent and independent variables) in experiments Example: explaining why thick objects cause darkest shadows 	<p><i>All DSM modules require students to scientific investigations.</i></p> <p>Properties Activity 10-12 Finding the Moon Activity 3-5</p> <p>Investigating Water Activity 8 Sunshine and Shadows Activity 9</p>
<ul style="list-style-type: none"> • Sorting and classifying Example: grouping objects according to darkness of shadows • Experimenting Example: determining objects that make darkest shadows • Analyzing investigations Example: drawing conclusions about objects that make dark shadows • Developing hypotheses Example: using experiences to guess which objects might make darkest shadows • Formulating models, tables, charts, and graphs Example: making a data chart • Observing 	<p>Properties Activity 2, 3, 5, 6 From Seed to Plant Activity 1</p> <p>Investigating Water Activity 5, 7, 8, 10 Sunshine and Shadows Activity 8-11</p> <p>Investigating Water Activity 5, 7, 8, 10 Sunshine and Shadows Activity 8-11</p> <p>Properties Activity 10, 11, 13 Finding the Moon Activity 7, 8</p> <p>Observing an Aquarium Activity 10 Finding the Moon Activity 9</p> <p>Properties Activity 3-6</p>

<p>Example: examining objects and their shadows</p> <ul style="list-style-type: none"> • Measuring Example: ranking shadows according to darkness • Defining operationally Example: deciding how to judge shadows as dark shadows • Communicating Examples: drawing pictures of shadows, describing or explaining observations • Predicting Example: predicting darkness of shadows of different objects • Collaborating Examples: sharing learning experiences, discussing ideas about shadows 	<p>Observing an Aquarium Activity 3-6</p> <p>From Seed to Plant Activity 7</p> <p>Properties Activity 6</p> <p>Investigating Water Activity 5, 7, 10</p> <p>Properties Activity 10, 11</p> <p>Observing an Aquarium Activity 9-11</p> <p>Finding the Moon Activity 7-10</p> <p>Properties Activity 6, 10, 11</p> <p>Sunshine and Shadows Activity 3, 7, 10</p> <p>Observing an Aquarium Activity 8-10</p> <p>Sunshine and Shadows Activity 7-12</p>
<p>5. Think critically and logically to make inferences and describe relationships between evidence and explanations.</p> <p>Example: basing conclusion that mealworms move toward dark areas instead of light areas on observations of mealworm behavior</p>	<p>Investigating Water Activity 8, 10, 11</p> <p>Finding the Moon Activity 4, 10</p>
<p>6. Investigate alternative explanations of experimental results.</p> <p>Example: conducting experiments to determine if size or thickness of certain objects affects the darkness of shadows</p>	<p>Investigating Water Activity 12</p> <p>Finding the Moon Activity 6</p>
<p>7. Use mathematics in scientific inquiry.</p> <p>Example: description of quantity using nonstandard units of measure such as paper clips, unifix cubes, pencils, straws, shoes</p>	<p>From Seed to Plant Activity 7</p> <p>Sunshine and Shadows Activity 6, 9</p> <p>Properties Activity 2 Science and Math Activity 6</p>
<p>8. Recognize that scientists use technology in scientific research.</p> <p>Example: using hand-lens to enhance the naked eye</p>	<p>Properties Activity 6</p> <p>From Seed to Plant Activity 1, 3, 5, 6</p> <p>Observing an Aquarium Activity 3-6</p>
<p>9. Recognize the importance of science and technology to many careers.</p> <p>Examples: doctors using stethoscopes, astronomers using telescopes</p>	<p>Observing an Aquarium Activity 4 Science and Careers</p> <p>From Seed to Plant Activity 14 Science and Careers</p> <p>Sunshine and Shadows Activity 7 Science and Careers</p>
<p>10. Demonstrate an understanding of the impact of society on human health and environmental conditions.</p> <p>Examples: cutting trees destroys animal homes, littering pollutes the soil/water</p>	<p>Observing an Aquarium Activity 11, 12 Activity 11 Science, Technology, and Society</p> <p>Investigating Water Activity 12 Activity 12 Science and Language Arts</p>
<p>11. Recognize the relationship among science, technology, and society.</p> <p>Examples: medicines used to prevent/cure illness, paying taxes to support research</p>	<p>Finding the Moon Activity 10 Science, Technology, and Society</p> <p>Investigating Water Activity 12 Science, Technology, and Society</p> <p>Properties</p>

PHYSICAL SCIENCE

Properties and Changes in Matter

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
12. Describe the observable states of matter. <ul style="list-style-type: none"> • Solid • Liquid 	Investigating Water Activity 1, 9-11 Properties Activity 7-9
13. Recognize physical changes of matter. <ul style="list-style-type: none"> • Melting • Freezing • Bending • Tearing 	Properties Activity 8 Science Challenge Activity 10, 11 Science Extension Investigating Water Activity 7, 9-12

Position and Motion of Matter

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
14. Describe motion. <ul style="list-style-type: none"> • Change of position Examples: playground swings, wagons, model rockets. • Change of speed. 	Finding the Moon Activity 2, 3, 9, 10 Sunshine and Shadows Activity 4-6 Properties Activity 10 Investigating Water Activity 3, 12

Energy

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
15. Recognize the sun as the earth's source of energy. <ul style="list-style-type: none"> • Light • Heat 	Sunshine and Shadows Activity 1 Science and Health Investigating Water Activity 10
16. Construct knowledge about shadows and the way they are formed.	Sunshine and Shadows Activity 1-12
17. Describe sources of sound. Examples: voices, drums, bells, strings	

LIFE SCIENCE

Structure and Function of Living Systems

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
18. Compare size, shape, and structure of living things. Examples: flower stem to tree trunk, front legs to wings, butterfly wings to bird wings	Observing an Aquarium Activity 3-6 From Seed to Plant Activity 1, 3-5, 9, 10, 12

Heredity and Reproduction

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
19. Describe how offspring resemble parents. <ul style="list-style-type: none"> • Plants Examples: seedling-oak tree, corn sprout-corn plant • Animals Examples: puppy-dog, kitten-cat 	From Seed to Plant Activity 13 Observing an Aquarium Activity 10

Organisms and Environments

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
20. Describe a variety of living things in the environment.	Observing an Aquarium Activity 3-6
21. Describe ways in which living and nonliving things react to changing conditions. Examples: persons wearing sweaters in the fall, animals' coats changing, ponds freezing	Observing an Aquarium Activity 8, 9 From Seed to Plant Activity 6, 8, 11
22. Describe a variety of habitats. Examples: classroom, fish tank, school ground	Observing an Aquarium Activity 2-12
23. Describe natural homes of animals. Examples: beaver lodge, woodland for deer, bird nest, bear den, prairie dog hole, anthill	Observing an Aquarium Activity 2, 4-6, 12

EARTH AND SPACE SCIENCE

Dynamic Earth

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
24. Identify the components of the earth's surface. <ul style="list-style-type: none"> • Soil • Rocks • Water • Sand 	Observing an Aquarium Activity 1 Properties Activity 5, 11 Science Extension Investigating Water Activity 12 Science and Language Arts
25. Describe daily and seasonal changes in weather.	Sunshine and Shadows Activity 9 Science Challenge
26. Recognize instruments used to observe weather. Examples: rain gauge, thermometer	

Earth in Space

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
27. Describe what can be observed in the day sky with the unaided eye. <ul style="list-style-type: none"> • Sun • Clouds • Moon • Stars 	Sunshine and Shadows Activity 1, 4, 8 Science Extension

Scientific Processes Grade One Content Standards

PROCESS AND APPLICATION

Process and Application

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
1. Identify questions that can be answered through scientific investigations. Example: questions about the relationship of amount of water and pitch of a jar/glass when struck	Properties Activity 10, 11 Sunshine and Shadows Activity 3, 6 Investigating Water Activity 3, 5, 7, 10
2. Use appropriate tools and technology resources to gather, analyze, and interpret data. Examples: hand lenses, clocks, computers, thermometers, balances	Finding the Moon Activity 7, 8 From Seed to Plant Activity 3, 5, 7, 10 Observing an Aquarium Activity 3-6
3. Demonstrate the ability to perform safe and appropriate manipulation of materials, living organisms, scientific equipment, and technology.	<i>All DSM modules are designed with safety in mind. Caution warnings are used where appropriate.</i> Observing an Aquarium Activity 3-5 Investigating Water Activity 4-7 Sunshine and Shadows Activity 8-11
4. Use appropriate skills to design and conduct a scientific investigation. <ul style="list-style-type: none"> • Acquiring, processing, and interpreting data Example: listening and deciding which is high pitch and which is low pitch • Discussing cause and effect (dependent and independent variables) in experiments Example: relating levels of water to different pitches • Sorting and classifying Examples: grouping jars of water into low and high pitches, arranging jars from lowest to highest pitch • Experimenting Example: determining which jar has the highest pitch using different amounts of water • Analyzing investigations Example: drawing conclusions about the effect of water amount on pitch • Developing Hypotheses Example: using reasons for guessing how different pitches will be heard 	<i>All DSM modules require students to do scientific investigations. Some examples are:</i> From Seed to Plant Activity 1, 3, 6, 12 Finding the Moon Activity 3-5 Investigating Water Activity 8 Sunshine and Shadows Activity 9 Properties Activity 2, 3, 5, 6 From Seed to Plant Activity 1 Investigating Water Activity 5,7,8,10 Sunshine and Shadows Activity 8-11 Investigating Water Activity 5,7,8,10 Sunshine and Shadows Activity 8-11 Properties Activity 10,11,13 Finding the Moon Activity 7,8
<ul style="list-style-type: none"> • Formulating models, tables, charts, and graphs Example: recording high/low pitch and amount of water in jars • Observing Example: listening to pitches created by striking jars containing different amounts of water 	Finding the Moon Activity 9 Observing an Aquarium Activity 10 Observing an Aquarium Activity 3-6 Properties Activity 3-6

<ul style="list-style-type: none"> • Measuring Example: using non-traditional units to quantify length of water columns in jars • Defining operationally Example: deciding how to distinguish low, medium, or high pitches • Communicating Example: describing the experiment and reasons for conclusions • Predicting Example: predicting pitch of jars with different shapes or liquids • Collaborating Example: working in groups to make and play a jar xylophone 	<p>From Seed to Plant Activity 7 Properties Activity 6</p> <p>Investigating Water Activity 5, 7, 10 Properties Activity 10, 11</p> <p>Observing an Aquarium Activity 9-11 Finding the Moon Activity 7-10</p> <p>Properties Activity 6, 10, 11 Sunshine and Shadows Activity 3, 7, 10</p> <p>Observing an Aquarium Activity 8-10 Sunshine and Shadows Activity 7-12</p>
<p>5. Think critically and logically to make inferences and relationships between evidence and explanations. Example: push and pull of magnets indicating force between them</p>	<p>Investigating Water Activity 8, 10, 11 Finding the Moon Activity 4, 10</p>
<p>6. Investigate alternative explanations of experimental results. Example: measured student growth resulting from amount or kind of food eaten</p>	<p>Investigating Water Activity 12 Finding the Moon Activity 6</p>
<p>7. Use mathematics in scientific inquiry.</p> <ul style="list-style-type: none"> • Applying standard whole units to measure an object or substance • Applying nonstandard whole units to measure an object or substance 	<p>Properties Activity 2 Science and Math Activity 6 Sunshine and Shadows Activity 6, 9 From Seed to Plant Activity 7</p>
<p>8. Recognize that scientists use technology in scientific research. Example: balances used to measure weight of an object</p>	<p>From Seed to Plant Activity 1, 3, 5, 6 Observing an Aquarium Activity 3-6 Properties Activity 6</p>
<p>9. Recognize the importance of science and technology to many careers. Example: teachers using computers in classrooms</p>	<p>Observing an Aquarium Activity 4 Science and Careers From Seed to Plant Activity 14 Science and Careers Sunshine and Shadows Activity 7 Science and Careers</p>
<p>10. Recognize the impact of the impact of society on human health and environmental conditions. Example: erosion resulting from removal of grass and trees during house construction</p>	<p>Observing an Aquarium Activity 11, 12 11 Science, Technology, and Society Investigating Water Activity 12 12 Science and Language Arts</p>
<p>11. Recognize the relationship among science, technology, and society. Example: airplanes making travel faster</p>	<p>Finding the Moon Activity 10 Science, Technology, and Society Investigating Water Activity 12 Science, Technology, and Society Properties Activity 9 Science, Technology, and Society</p>

PHYSICAL SCIENCE

Properties and Changes in Matter

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
12. Describe characteristics of objects. Examples: size, weight, shape, texture, color, taste, smell	Investigation Water Activity 1, 2, 4, 5 Properties Activity 2-9 From Seed to Plant Activity 1
13. Describe the effects of forces (push, pull, magnetism) on objects. <ul style="list-style-type: none"> • Change of speed Examples; fast, slow • Change of Direction Examples: straight, curved, zigzag • Change of Position Examples: up/down, forward/backward, inside/outside 	Investigation Water Activity 3, 5, 10 From Seed to Plant Activity 6 Properties Activity 10, 11

Energy

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
14. Describe characteristics of sound. <ul style="list-style-type: none"> • Vibration • Pitch • Volume 	

LIFE SCIENCE

Structure and Function of Living Systems

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
15. Describe characteristics of plants and animals that help them survive. Examples: protection-cactus spines, poison ivy sap, camouflage; predation-dinosaur teeth, claws, poison	Observing an Aquarium Activity 3-5 From Seed to Plant Activity 3, 9-11

Diversity and Adaptations

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
16. Classify plants and animals according to characteristics. Examples: color, shape, size, texture, covering	Observing an Aquarium Activity 4, 5 From Seed to Plant Activity 1, 10

Organisms and Environments

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
17. Describe the basic needs of plants and animals. <ul style="list-style-type: none"> • Food • Water 	Observing an Aquarium Activity 2 From Seed to Plant Activity 8, 14

<ul style="list-style-type: none"> • Shelter • Air • Space/Area • Light 	
<p>18. Describe interactions of organisms with their environments. Examples: butterflies with plants, snails with light</p>	<p>Observing an Aquarium Activity 8, 9, 11 From Seed to Plant Activity 4, 6, 8</p>
<p>19. Explain how organisms are dependent upon each other for survival. Examples: offspring upon parents for basic needs, flowering plants upon bees for pollination, bees upon plants for food.</p>	<p>Observing an Aquarium Activity 3-7 From Seed to Plant Activity 4 Science and Social Studies</p>

EARTH AND SPACE SCIENCE

Dynamic Earth

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
<p>20. Identify the earth's features in the local community. Examples: lakes, rivers, mountains, beaches, valleys, plains</p>	<p>Observing an Aquarium Activity 1, 2 Finding the Moon Activity 7 Science and Social Studies</p>
<p>21. Relate events in daily life to aspects of weather patterns. Examples: appropriate clothing, outdoor activities, safety procedures/precautions</p>	<p>Sunshine and Shadows Activity 3 Science Challenge</p>
<p>22. Describe the need to protect the Earth's resources.</p>	<p>Investigation Water Activity 12, Activity 12 Science and Language Arts</p>

Earth in Space

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
<p>23. Describe the night sky as observed with the unaided eye.</p> <ul style="list-style-type: none"> • Stars Examples: brightness, too many to count, color • Moon Example: change in appearance over time (phases) 	<p>Finding the Moon Activity 1, 3, 4 Sunshine and Shadows Activity 1</p>

Scientific Processes Grade Two Content Standards

PROCESS AND APPLICATION

Process and Application

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
1. Identify questions that can be answered through scientific investigations. Example: questions regarding light as it comes in contact with different materials	<i>All DSM modules have students do scientific investigations and students must identify questions. Some examples are:</i> Sink or Float Activity 7,9-11 Soil Science Activity 8,10 Using Your Senses Activity 2,4,7
2. Use appropriate tools and technology resources to gather, analyze, and interpret data. Examples: rulers, meter sticks, measuring cups, clocks, hand lenses, computers, thermometers, balances, maps	Length and Capacity Activity 5, 6, 10, 11 Plant and Animal Population Activity 1-7 Weather Watching Activity 2-4, 7
3. Demonstrate the ability to perform safe and appropriate manipulation of materials, living organisms, scientific equipment, and technology. Examples: explaining why students do not taste substances without the teacher's permission, wearing protective goggles when handling substances	<i>All DSM modules are designed with safety in mind. Caution warnings are used where appropriate. The Safety in the Classroom page in the overview section of the teacher guide gives specific guidelines. For example:</i> Plant and Animal Population Activity 4-7 Using Your Senses Activity 8,12 States of Matter Activity 7,12
4. Use appropriate skills to design and conduct a scientific investigation. <ul style="list-style-type: none"> • Acquiring, processing, and interpreting data Example: grouping materials that reflect, refract (bend), or absorb light • Discussing cause and effect (dependent and independent variables) in experiments Example: discussing how light's path is changed by aluminum foil • Sorting and classifying Example: sorting materials according to characteristics believed to favor reflection or absorption of light 	<i>All DSM modules require students to do scientific investigations. Some examples are:</i> Using Your Senses Activity 8-12 Classroom Plants Activity 2-4, 11 Sink or Float Activity 5, 7 Soil Science Activity 8, 11 Soil and Science Activity 7 Force and Motion Activity 12 Weather Watching Activity 6
<ul style="list-style-type: none"> • Experimenting Example: determining factors, one at a time, of materials that cause reflection of light • Analyzing investigations Example: drawing conclusions from observations about factors affecting light reflecting ability of objects • Developing Hypotheses Example: using observations and experiences to propose that smooth, shiny objects always reflect light 	Classroom Plants Activity 5 Soil Science Activity 8 Classroom Plants Activity 10, 11 States of Matter Activity 1-3 Sink or Float Activity 8, 9 States of Matter Activity 7

<ul style="list-style-type: none"> • Formulating models, tables, charts, and graphs Example: drawing/dramatizing how light rays bounce off a mirror • Observing Example: examining effects of shining a light on different materials with similar/different characteristics • Measuring Example: measuring how far away light can illuminate an object • Define operationally Example: mixing all colors of light to make white light • Communicating Example: writing about procedures to investigate light and resulting conclusions 	<p>Weather Watching Activity 4-7, 10 Using Your Senses Activity 2, 3, 12</p> <p>Plant and Animal Population Activity 4-7 Amazing Air Activity 2-5</p> <p>Length and Capacity Activity 5-7, 10-12 Force and Motion Activity 1-4</p> <p>Amazing Air Activity 4,11 States of Matter Activity 7, 8, 10, 11</p> <p>Soil Science Activity 1, 6, 11 Plant and Animal Population Activity 1, 11, 12</p>
<ul style="list-style-type: none"> • Predicting Example: predicting whether a new material will reflect or absorb light • Collaborating Example: working in groups to explain experiments with light to others 	<p>Amazing Air Activity 3, 6 States of Matter Activity 4, 5</p> <p>Force and Motion Activity 4-7 Classroom Plants Activity 4. 5</p>
<p>5. Think critically and logically to make inferences and relationships between evidence and explanations Example: identifying weather conditions that might affect plant growth</p>	<p>Amazing Air Activity 2, 7, 9 Sink or Float Activity 2-4</p>
<p>6 Investigate alternative explanations of experimental results. Example: conducting experiments to determine if color of light and/or kind of substance used (water, glass) causes light rays to refract (bend)</p>	<p>Amazing Air Activity 12 Sink or Float Activity 9, 10</p>
<p>7. Use mathematics in scientific inquiry.</p> <ul style="list-style-type: none"> • Applying standard whole units (metric and English) to measure an object or substance • Applying nonstandard whole units to measure an object or substance 	<p>Force and Motion Activity 1-4, 7 Weather Watching Activity 2, 3, 5, 7 Length and Capacity Activity 4-6, 10, 11</p>
<p>8. Recognize that scientists use technology in scientific research. Example: paleontologists using picks, hand-lens, sonar, and brushes</p>	<p>Weather Watching Activity 2-5, 7, 12 Soil Science Activity 12 Science, Technology, and Society Length and Capacity Activity 7 Science, Technology, and Society</p>
<p>9. Recognize the importance of science and technology to many careers. Example: meteorologists using maps, data, and satellite imagery to predict long-range weather for crops</p>	<p>Classroom Plants Activity 12, 12 Science and Careers Soil Science Activity 10 Science and Careers Force and Motion Activity 7 Science and Careers</p>
<p>10. Recognize the impact of society on human health and environmental conditions. Example: government establishment of national park or wilderness area</p>	<p>Soil Science Activity 11 Science, Technology, and Society Weather Watching Activity 9 Science, Technology, and Society Force and Motion</p>

	Activity 9 Science and Health
11. Recognize the relationship among science, technology, and society. Example: aircraft flying faster and safer because of radar	Sink or Float Activity 10 Science, Technology, and Society Amazing Air Activity 12 Science, Technology, and Society Force and Motion Activity 8 Science, Technology, and Society, 12

PHYSICAL SCIENCE

Properties and Changes in Matter

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
12. Describe changes in states of matter. <ul style="list-style-type: none"> Solid to liquid Liquid to solid 	States of Matter Activity 4, 5, 7-12 Weather Watching Activity 6
13. Describe objects according to physical properties. <ul style="list-style-type: none"> Hardness Softness Color Flexibility 	Amazing Air Activity 1-7 Soil Science Activity 1-4 Sink or Float Activity 1, 7
14. Describe properties of objects when changes occur. Examples: changing water to ice, tearing paper, adding cornstarch to water	States of Matter Activity 4, 5, 7-12 Soil Science Activity 5, 6, 12 Sink or Float Activity 3, 5, 7

Position and Motion of Objects

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
15. Compare types of motion. <ul style="list-style-type: none"> Linear Periodic <p style="text-align: center;">Example: circular, Back and forth</p>	Force and Motion Activity 1, 2, 5-8 Amazing Air Activity 10-12 Weather Watching Activity 4, 5
16. Describe the observable effects of forces. <ul style="list-style-type: none"> Buoyancy–floating Gravity–falling Magnetism–repelling and attracting Friction–stopping or slowing 	Sink or Float Activity 1 Force and Motion Activity 1-12 Amazing Air Activity 10-12

Energy

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
17. Recognize sources of energy. <ul style="list-style-type: none"> Sun Wind Water (moving) Fossil fuels (burning) 	Weather Watching Activity 5, 6 States of Matter Activity 8 Soil Science Activity 12
18. Describe how light interacts with a variety of materials.	Using Your Senses Activity 3

Examples: mirror, water, clear plastic, tissue paper, solid wooden object, wax paper	
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LIFE SCIENCE

Structure and Function of Living Systems

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
19. Relate structure to function in plants and animals. Examples: stems, leaves, and roots for food production and storage in plants; plant roots for support; fish fins and bird wings for locomotion; claws, beaks, and coverings for protection and/or food acquisition	Classroom Plants Activity 6-9, 11 Butterflies and Moths Activity 1, 6, 9, 12 Plant and Animal Populations Activity 4-7

Diversity and Adaptations

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
20. Identify characteristics and behaviors of organisms that help them survive. <ul style="list-style-type: none"> Physical Examples: color, size, shape, covering Responsive Examples: migration, hibernation 	Classroom Plants Activity 6-8, 11 Plant and Animal Populations Activity 7, 11,12 Butterflies and Moths Activity 7, 8 Using Your Senses Activity 1, 5, 8, 10
21. Compare models of extinct animals to those that exist today. Example: stegosaurus and lizard, pterodactyl and bird	

Heredity and Reproduction

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
22. Describe how offspring produced by plants or animals are similar to the parent. <ul style="list-style-type: none"> Size Shape Color 	Classroom Plants Activity 9, 10 Plant and Animal Populations Activity 5-7 Butterflies and Moths Activity 1, 6, 9, 11

Organisms and Environments

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
23. Describe interdependence of plants and animals. Examples: animals use plants for shelter, food, and nests; insects or other animals pollinate plants or carrying seeds	Plant and Animal Population Activity 6, 7, 10-12 Classroom Plants Activity 9, 9 Science Extension
24. Identify factors that affect the environment. <ul style="list-style-type: none"> Natural 	Butterflies and Moths Activity 8 Science, Technology, and Society

Examples: weather, seasons, earthquake • Manmade Examples: pollution, conservation	Soil Science Activity 11, 12 Activity 11 Science Extension Weather Watching Activity 9, 10
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EARTH AND SPACE SCIENCE

Dynamic Earth

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
25. Recognize evidence of prior life (fossils).	
26. Differentiate among the properties of soil. Example: color, texture, water retention	Soil Science Activity 1-4, 7
27. Identify soil types. Example: sand, clay, humus	Soil Science Activity 3, 7
28. Recognize the role of soil to support plant growth.	Soil Science Activity 8, 20 Classroom Plants Activity 3, 5
29. Demonstrate an understanding of the process of composting.	
30. Describe features of the Earth. Examples: rivers, deserts, plains, valleys, oceans, deltas, mountains,	Soil Science Activity 12, Activity 12 Science Extension , Activity 12 Science, Technology, and Society
31. Recognize weather patterns. • Daily • Seasonal	Weather Watching Activity 3-7, 12
32. Recognize the impact of weather. • Drought • Flood • Structural damage	Weather Watching Activity 9, 10

Earth in Space

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
33. Recognize that the moon appears as different shapes (phases) at different times.	Finding the Moon* Activity 3, 4, 9, 10 * a grade 1 module
34. Identify the basic components of the solar system. • Sun • Planets • Moons	Solar System* Activity 1, 2, 10 * a grade 3 module

Scientific Processes Grade Three Content Standards

PROCESS AND APPLICATION

Process and Application

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
1. Identify questions that can be answered through scientific investigations.	<i>All DSM modules have students do scientific investigations and students must identify questions. Some examples are:</i> Electrical Circuits Activity 6, 7, 9 Water Cycle Activity 7, 12 Animal Behavior Activity 5, 6
2. Use appropriate tools and technology resources to gather, analyze, and interpret data. Examples: calculators, microscopes, cameras, sound recorders, clocks, computers, thermometers, hand lenses, meter sticks, rulers, balances, maps, star charts	Small Things and Microscopes Activity 3-11 Measuring Activity 5, 6, 10 Food Chains and Webs Activity 4-7
3. Demonstrate the ability to perform safe and appropriate manipulation of materials, living organisms, scientific equipment, and technology	<i>All DSM modules are designed with safety in mind. Caution warnings are used where appropriate.</i> Animal Behavior Activity 1-12 Magnets Activity 5,6, 10 Electrical Circuits Activity 10-12
4. Use appropriate skills to design and conduct a scientific investigation. <ul style="list-style-type: none"> • Acquiring, processing, and interpreting data • Identifying dependent and independent variables (cause and effect) and their relationships • Sorting and classifying • Experimenting • Analyzing • Developing Hypotheses • Formulating models, tables, charts, and graphs 	<i>All DSM modules require students to do scientific investigations. Some examples are:</i> Powders and Crystals Activity 5-10 Looking at Liquids Activity 6-8 Animal Behavior Activity 5, 6 Sink or Float Activity 5, 7 Insect Life Activity 6 Weather Instruments Activity 10 Electrical Circuits Activity 6, 7 Classroom Plants Activity 5 Sound Activity 8-11 States of Matter Activity 1-3 Earth Movements Activity 4 Sink or Float Activity 8, 9 Powders and Crystals Activity 2-12 Using Your Senses Activity 2, 3, 12
<ul style="list-style-type: none"> • Observing • Measuring • Define operationally • Communicating 	Food Chains and Webs Activity 1, 4-6 Amazing Air Activity 2-5 Measuring Activity 5, 6, 8, 10,12 Length and Capacity Activity 5-7,10-12 Looking at Liquids Activity 6-8 States of Matter Activity 7, 8, 10, 11 Plant and Animal Life Cycles Activity 4, 5

<ul style="list-style-type: none"> Predicting Collaborating Write lab reports/scientific journals 	Soil Science Activity 1, 6, 11 Looking at Liquids Activity 6-9 Amazing Air Activity 3, 6 Powders and Crystals Activity 5-10 Classroom Plants Activity 4, 5 Animal Behavior Activity 5, 6 Electrical Circuits Activity 7 Insect Life Activity 8
5. Think critically and logically to make inferences and relationships between evidence and explanations. Example: relating condensation in a terrarium to stages in the water cycle	Water Cycle Activity 9, 11-13 Sink or Float Activity 2-4
6. Investigate alternative explanations of results.	Animal Behavior Activity 9, 10 Amazing Air Activity 12
7. Use available technology to communicate scientific procedures and to defend explanations.	
8. Use mathematics in scientific inquiry.	Solar System Activity 4-8 Plant and Animal Life Cycles Activity 6, 7 Weather Instruments Activity 5, 6, 11
9. Demonstrate an understanding of the relationships among science, technology, and society past and present. <ul style="list-style-type: none"> Explain how scientists use technology in scientific research Recognize the importance of science and technology to many careers Demonstrating an understanding of the impact of society on human health and environmental conditions 	Earth Movements Activity 2 Science, Technology and Society Electrical Circuits Activity 2 Science and Careers Soil Science Activity 11 Science, Technology, and Society Food Chains and Webs Activity 12 Science, Technology, and Society
<ul style="list-style-type: none"> Recognizing contributions of science to development of technology and changes in society 	Magnets Activity 11 Science, Technology, and Society Amazing Air Activity 12 Force and Motion Activity 8 Science, Technology, and Society

PHYSICAL SCIENCE

Properties and Changes in Matter

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
10. Describe the states of matter. <ul style="list-style-type: none"> Solid Liquid Gas 	State of Matter Activity 1-3 Looking at Liquids Activity 11 Water Cycle Activity 12, 13
11. Recognize that matter occupies space and has mass.	Looking at Liquids Activity 8, 9 Amazing Air Activity 1-3, 6
12. Identify mixtures.	Powders and Crystals Activity 5, 6, 10, 12,

Examples: sugar and water, sand and water, powdered drink and water, salt and pepper	Looking at Liquids Activity 8 Science Challenge
13. Recognize that some substances dissolve in water and others do not.	Looking at Liquids Activity 9, Activity 8 Science Challenge Powders and Crystals Activity 5, 11

Forces and Motion

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
14. Demonstrate that change in motion is a result of applying unequal forces. <ul style="list-style-type: none"> • Speed • Direction Examples: tug-of-war, seesaw	Force and Motion Activity 1-3, 6-8 Weather Instruments Activity 4, 5
15. Recognize that forces can act from a distance. Examples: ball falling to earth, magnet picking up nails, comb attracting bits of paper	Magnets Activity 1-4 Solar System Activity 2 Electrical Circuits Activity 2 Science Extension
16. Recognize that gravity is a force that pulls objects toward the Earth's center.	Solar System Activity 2 Amazing Air Activity 9
17. Identify simple tools. Examples: scissors, hammer, knife, screwdriver	Force and Motion Activity 6-12
18. Compare the amount of force required to do work with and without the use of tools.	Force and Motion Activity 8-11

Energy

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
19. Explain ways that energy is useful. Examples: to do work, to heat water	Sound Activity 6, 12 Electrical Circuits Activity 1, 3, 4, 10, 11 Magnets Activity 8, 11, Activity 11 Science, Technology, and Society
20. Recognize sources and processes that produce heat. <ul style="list-style-type: none"> • Fossil fuels Examples: coal, oil, gas • Electricity • Nuclear power • Decaying compost • Friction 	Powders and Crystals Activity 9 Electrical Circuits Activity 10 States of Matter Activity 8
21. Recognize the effects of heat on matter. Examples: ice melts, water boils, water evaporates	States of Matter Activity 4, 5, 8 Electrical Circuits Activity 10 Water Cycle Activity 11-13
22. Identify conductors and insulators of heat.	States of Matter Activity 5
23. Explain how energy from the sun is used. <ul style="list-style-type: none"> • Producing food in plants (photosynthesis) • Heating the Earth's surface • Generating electricity in solar panels 	Classroom Plants Activity 8 Weather Watching Activity 2, 3 Weather Instruments Activity 1, 6

LIFE SCIENCE

Structure and Function of Living Systems

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
24. Relate plant structures to their function(s). <ul style="list-style-type: none"> • Leaves • Stems • Roots • Flowers 	Classroom Plants Activity 6-9 Plant and Animal Life Cycles Activity 3, 8 Activity 6 Science Extension
25. Classify plants according to their features. Examples: evergreen or deciduous, flowering or non-flowering	Classroom Plants Activity 10 Science Challenge Plant and Animal Life Cycles Activity 9 Science Challenge

Diversity and Adaptations

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
26. Identify basic needs of plants. <ul style="list-style-type: none"> • Space • Light • Nutrients • Water • Air 	Classroom Plants Activity 5, 12 Plant and Animal Life Cycle Activity 2 Food Chains and Webs Activity 3
27. Explain how fossils provide evidence of prehistoric plant life. Examples: fern fossil in coal or shale	Dinosaur Classification Activity 2, 3 Earth Movements Activity 3
28. Recognize helpful and harmful effects of plants. Examples: helpful-make food, control erosion; Harmful-cause allergies, produce poisons	Classroom Plants Activity 1, 2, 12, Activity 12 Science and Careers Plant and Animals Life Cycles Activity 11 Science and Health, Activity 9 Science and Language Arts

Heredity and Reproduction

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
29. Describe the life cycle of plants. <ul style="list-style-type: none"> • Germination • Growth • Reproduction Examples: seeds, bulbs, tubers, cuttings, spores • Decomposition 	Plant and Animal Life Cycle Activity 8, 9, 12 Classroom Plants Activity 9, 10 Activity 9 Science and Language Arts

Organisms and Environments

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
30. Explain the ways that environmental conditions can determine how well plants grow and survive in a particular habitat.	Classroom Plants Activity 3, 4 Activity 12 Science and the Arts Plant and Animal Life Cycles Activity 3 Science Challenge Activity 2 Science Extension

	Food Chains and Webs Activity 3
31. Identify useful products that are the result s of recycling plants. Examples: mulch, compost piles, manufactured wood (from wood products), fish habitat (created from sinking trees in water)	Plants and Animals Life Cycles Activity 12, 12 Science Extension

EARTH AND SPACE SCIENCE

Dynamic Earth

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
32. Classify rocks and minerals by characteristics. Examples: streak, color, hardness, magnetism, luster, texture, uses	Earth and Movement Activity 3
33. Describe the water cycle.	Water Cycle Activity 9, 11, 13 Weather Instruments Activity 11 Science Extension
34. Recognize the positive and negative aspects of weather.	Weather Watching Activity 1, 9, 10 Weather Instruments Activity 12 Science and Health
35. Recognize geographic weather patterns.	Weather Watching Activity 1, 12, Activity 12 Science, Technology, and Society Weather Instruments Activity 12 Science, Technology, and Society, Activity 6 Science and Social Studies
36. Recognize effects of weather. <ul style="list-style-type: none"> Erosion Examples: wind-caused, water caused Changes to man-made objects Examples: scouring, cracking, rotting, rusting Natural disasters 	Weather Watching Activity 9, 10 Weather Instruments Activity 12 Science and Health
37. Use weather instruments and other resources to record and predict weather. Examples thermometer, barometer, rain gauge, anemometer, weather maps and symbols, radar, satellite, Internet, cloud charts	Weather Watching Activity 2-7, 12 Weather Instruments Activity 1-5, 10-12

Earth in Space

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
38. Relate predictable patterns to regular movement of objects in the solar system Examples: day and night, month and year, phases of the moon	Solar System Activity 9
39. Associate the Earth’s revolution with the seasons.	Weather Instruments Activity 6 Science Challenge Solar System Activity 9 Science Challenge
40. Describe star patterns and constellations.	Solar System Activity 12

<p>41. Identify purposes of artificial satellites that orbit the earth. Examples: weather, communication, remote sensing</p>	<p>Solar System Activity 2 Science, Technology, and Society</p>
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Ordered Universe

<p><i>CONTENT STANDARDS</i> <i>Students will:</i></p>	<p><i>DSM</i> <i>ACTIVITY</i></p>
<p>42. Recognize that telescopes are used to study distant objects.</p>	<p>Solar System Activity 3 Science and Challenge, Activity 2 Science, Technology, and Society</p>
<p>43. Recognize that the Earth's solar system is a star-centered system.</p>	<p>Solar System Activity 1, 8</p>

Scientific Processes Grade Four Content Standards

PROCESS AND APPLICATION

Process and Application

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
1. Identify questions that can be answered through scientific investigations.	<i>All DSM modules have students do scientific investigations and students must identify questions. Some examples are:</i> Electrical Circuits Activity 6, 7, 9 Water Cycle Activity 7, 12 Animal Behavior Activity 5, 6
2. Use appropriate tools and technology resources to gather, analyze, and interpret data. Examples: calculators, microscopes, cameras, sound recorders, computers, hand lenses, rulers, thermometers, meter sticks, timing devices, balances, compasses, maps	Small Things and Microscopes Activity 3-11 Measuring Activity 5, 6, 10 Food Chains and Webs Activity 4-7
3. Demonstrate the ability to perform safe and appropriate manipulation of materials, living organisms, scientific equipment, and technology.	<i>All DSM modules are designed with safety in mind. Caution warnings are used where appropriate.</i> Animal Behavior 1-12 Magnets 11 Electrical Circuits 10-12
4. Use appropriate skills to design and conduct a scientific investigation. <ul style="list-style-type: none"> • Acquiring, processing, and interpreting data • Identifying dependent and independent variables (cause and effect) and their relationships • Sorting and classifying • Experimenting • Analyzing • Developing hypotheses 	<i>All DSM modules require students to do scientific investigations. Some examples are:</i> Powders and Crystals Activity 5-12 Looking At Liquids 6-8 Animal Behavior Activity 5, 6 Insect Life Activity 8 Insect Life Activity 6 Electrical Circuit Activity 6, 7 Electrical Circuit Activity 6, 7 Small Things and Microscopes Activity 13 Sound Activity 8-11 Magnets Activity 11 Earth Movements Activity 4 Sound Activity 11
<ul style="list-style-type: none"> • Formulating models, tables, charts, and graphs • Observing • Measuring 	Powders and Crystals Activity 2-12 Weather Instruments Activity 5-8 Food Chains and Webs Activity 4-6 Dinosaur Classification Activity 5, 11 Measuring Activity 5, 6, 8, 10, 12 Solar Systems Activity 4-6

<ul style="list-style-type: none"> Defining operationally Communicating Predicting Collaborating Writing lab reports/scientific journals 	<p>Looking at Liquids Activity 6-8 Measuring Activity 1-4</p> <p>Plant and Animal Life Cycles Activity 4,5 Food Chains and Webs Activity 11,12</p> <p>Looking at Liquids Activity 6-9 Water Cycles Activity 5, 13</p> <p>Powders and Crystals 5-10 Magnets Activity 3, 4</p> <p>Animal Behavior Activity 5, 6 Insect Life Activity 8</p>
<p>5. Thinks critically and logically to make inferences and relationships between evidence and explanations. Example: relating sinking and floating to weight and size</p>	<p>Earth Movements Activity 12 Water Cycle Activity 9, 11-13 Powders and Crystals Activity 10, 12</p>
<p>6. Investigate alternative explanations of results.</p>	<p>Animal Behavior Activity 9, 10 Powers and Crystals Activity 10, 12</p>
<p>7. Use available technology to communicate scientific procedures and to defend explanations.</p>	
<p>8. Apply mathematical knowledge and skills to scientific investigations.</p> <ul style="list-style-type: none"> Computation Probability (most/least likely outcomes) Graphing (bar, line, circle, pictograph) Fractions and decimal Arithmetic mean Measurement (metric) 	<p>Measuring Activity 4, 8 Plant and Animal Life Cycles Activity 7</p> <p>Animal Behavior Activity 9, 10 Plant and Animal Life Cycle Activity 7</p> <p>Weather Instruments Activity 6 Looking at Liquids Activity 11</p> <p>Earth in Movements Activity 12 Science, Technology and Society Solar System Activity 11</p> <p>Dinosaur Classification Activity 6</p> <p>Dinosaur Classification Activity 6 Solar System Activity 5,6</p>
<p>9. Demonstrate an understanding of the relationships among science, technology, and society past and present.</p> <ul style="list-style-type: none"> Explaining how scientists use technology in scientific research Recognizing the importance of science and technology to many careers Demonstrating an understanding of the 	<p>Earth Movements Activity 2 Science, Technology, and Society Solar System Activity 11 Science, Technology, and Society</p> <p>Electrical Circuit Activity 2 Science and Careers</p>

<p>impact of society on human health and environmental conditions</p> <ul style="list-style-type: none"> Identifying contributions of Alabama scientists 	<p>Magnets Activity 8 Science and Careers</p> <p>Food Chains and Webs Activity 12 Science, Technology, and Society</p> <p>Insect Life Activity 4 Science and Social Studies</p>
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PHYSICAL SCIENCE

Properties and Changes in Matter

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
<p>10. Recognize properties of matter.</p> <ul style="list-style-type: none"> State Density Examples: sinks in water Solubility Transparency 	<p>Looking at Liquids 1-3, 6-9</p> <p>Magnets Activity 2</p> <p>Powders and Crystals Activity 1-3, 5-9</p>
<p>11. Demonstrate that physical changes in matter do not result in new substances. Examples: melting ice, breaking a pencil, cutting paper, freezing water</p>	<p>Powders and Crystals Activity 5</p> <p>Looking At Liquid Activity 11</p> <p>Electrical Circuits Activity 10</p> <p>Magnets Activity 9</p>
<p>12. Demonstrate that chemical changes result in new substances. Examples: rusting nails, baking a cake, combining vinegar and baking soda, tarnishing silver</p>	<p>Powders and Crystals Activity 6-9</p> <p>Looking at Liquids Activity 12</p>

Forces and Motions

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
<p>13. Recognize that distance affects the strength of force between objects. Example: the closer a magnet gets to iron filings, the quicker the iron filings are attracted to the magnet</p>	<p>Magnets Activity 1, 4</p>
<p>14. Explain how force affects speed and direction. Examples: a push on a moving skater makes the skater go faster, a moving car hit from the side changes direction, friction slows an object</p>	<p>Measuring Activity 10</p>

Energy

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
<p>15. Demonstrate that light travels from one place to another.</p> <ul style="list-style-type: none"> Illuminating objects Forming shadows Reflecting images and light 	<p>Lenses and Mirrors* Activity 1-7</p> <p>Color and Light* Activity 1</p> <p>* a grade 5 module</p>
<p>16. Describe interactions of light and matter.</p> <ul style="list-style-type: none"> Reflection 	<p>Lenses and Mirrors* Activity 1-9</p> <p>Color and Light* Activity 4, 5, 7</p>

<ul style="list-style-type: none"> • Refraction • Translucency • Transparency • Opacity 	* a grade 5 module
17. Describe a closed circuit and an open circuit.	Electrical Circuits Activity 1, 2
18. Compare series circuits and parallel circuits.	Electrical Circuits Activity 3, 4
19. Identify conductors and nonconductors of electricity.	Electrical Circuits Activity 6, 7
20. Recognize that electric circuits can be used to produce light, heat, sound, and magnetic effects.	Electrical Circuits Activity 1, 9, 10 Magnets Activity 11
21. Describe the production, transmission, and characteristics of sound waves.	Sound Activity 1-12

LIFE SCIENCE

Structure and Function of Living Systems

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
22. Relate structural characteristics and behavior of various animals to their roles within an ecosystem. <ul style="list-style-type: none"> • Predator • Prey • Consumer • Decomposer 	Food Chains and Webs Activity 4-6 Insect Life Activity 9, 12
23. Relate structures to functions in animals. Examples: coverings, feet, beaks, eyes	Dinosaur Classification Activity 8 Food Chains and Webs Activity 4-6 Insect Life Activity 1, 5, 9, 12

Diversity and Adaptations

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
24. Classify animals into groups according to specific characteristics. <ul style="list-style-type: none"> • Vertebrates • Invertebrates • Warm-blooded • Cold-blooded • Body coverings • Locomotion 	Dinosaur Classification Activity 9, 10 Insect Life Activity 6

Heredity and Reproduction

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
25. Describe life cycles of various animals. Examples: frogs, butterflies	Animal Behavior Activity 1, 12 Insect Life Activity 2, 7 Plant and Animal Life Cycles Activity 10
26. Recognize that offspring tend to resemble parents.	Plant and Animal Life Cycles Activity 4, 5, 10 Insect Life Activity 2, 7
27. Recognize that individuals of the same species may have variations.	Insect Life Activity 2, 7 Animal Behavior Activity 1

Examples: hair, eye color, size, beak size and shape	Plant and Animal Life Cycles Activity 4, 5
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Organisms and Environments

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
28. Identify behaviors and body structures that help animals survive in a particular habitat Examples: behaviors-migration, hibernation; body structures-quills, fangs, stingers, webbed feet	Food Chains and Webs Activity 4-7 Insect Life Activity 9, 11, 12
29. Identify living (biotic) and nonliving (abiotic) factors that affect animal life: <ul style="list-style-type: none"> • Other animals • Plants • Climate • Water • Air • Location (topography) 	Food Chains and Webs Activity 2, 10-12 Insect Life Activity 4, 10 Plant and Animal Life Cycles Activity 4-7
30. Identify environmental problems created by waste disposal. <ul style="list-style-type: none"> • Water contamination • Air pollution • Land contamination 	Water Cycle Activity 11 Science and Health Insect Life Activity 11 Science and Social Studies Food Chains and Webs Activity 12 Science, Technology, and Society

EARTH AND SPACE SCIENCE

Dynamic Earth

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
31. Recognize evidence of the sun as the Earth's major source of energy. <ul style="list-style-type: none"> • Plant growth • Creation of winds • Water cycle 	Water Cycle Activity 9, 13 Solar System Activity 1 Weather Instruments Activity 1, 6
32. Identify processes that require time for changes to be noticeable. Examples: growth, erosion, weathering, flowing (water, lava), deposition	Earth Movements Activity 5-7, 9 Water Cycle Activity 9, 13 Weather Instruments Activity 3, 6, 11
33. Identify geological features of the earth. Examples: valleys, mountains, bodies of water, sand dunes, ice caps, folds, faults, continental shelf, ocean ridge, plains, plateaus, canyons	Earth Movements Activity 2, 7-10
34. Describe changes to the earth's surface caused by natural and manmade forces. Examples: <ul style="list-style-type: none"> • natural-earthquakes, volcanoes, weathering, rock cycle, erosion; glacial scouring/deposition • manmade-mining/reclamation, deforestation/reforestation 	Earth Movements Activity 3, 6-11

Earth in Space

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
35. Describe the basic components of the solar system. Examples: planets, moons, asteroids, comets, sun, meteors	Solar System Activity 1, 10
36. Compare the relative scale of the Earth to other components of the solar system. <ul style="list-style-type: none"> • Planets • Moons • Sun 	Solar System Activity 2, 6, 8
37. Describe the apparent movement of objects across the sky. Examples: stationary sun appearing to rise and set, movement of the constellations in relation to the Earth	Solar System Activity 2, 9, 12
38. Identify technological advances and other benefits that result from space exploration Examples: laser, pacemaker, dehydrated food, flame retardant clothing, global positioning system (GPS)	

Ordered Universe

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
39. Describe the characteristics of the sun	Solar System Activity 1
40. Compare stars, planets, and moons <ul style="list-style-type: none"> • Appearance • Movement • Size • Distance • Composition 	Solar System Activity 1, 2, 11, 12

Scientific Processes Grade Five Content Standards

PROCESS AND APPLICATION

Process and Application

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
1. Identify questions that can be answered through scientific investigations.	<p><i>All DSM modules have students do scientific investigations and students must identify questions. Some examples are:</i></p> <p>Animal Behavior Activity 5, 6 Lenses and Mirrors Activity 4-6 Erosion Activity 5, 10-12</p>
2. Use appropriate tools and technology resources to gather, analyze, and interpret data. Examples: calculators, microscopes, cameras, sound recorders, computers, hand lenses, rulers, thermometers, balances, meter sticks, timing devices, collecting nets, maps	<p>Small Things and Microscopes Activity 3-11 Solar Energy Activity 10, 12 Pollution Activity 8, 12</p>
3. Demonstrate the ability to perform safe and appropriate manipulation of materials, living organisms, scientific equipment, and technology.	<p><i>All DSM modules are designed with safety in mind. Caution warnings are used where appropriate.</i></p> <p>Electrical Circuits Activity 10-12 Fungi-Small Wonders Activity 10, 11 Electromagnetism Activity 6-10</p>
<p>4. Use appropriate skills to design and conduct a scientific investigation.</p> <ul style="list-style-type: none"> • Acquiring, processing, and interpreting data • Identifying dependent and independent variables (cause and effect) and their relationships • Sorting and classifying • Experimenting • Analyzing investigations • Developing hypotheses • Formulating models, tables, charts, and graphs 	<p><i>All DSM modules require students to do scientific investigations. Some examples are:</i></p> <p>Powders and Crystals Activity 5-10 Color and Light Activity 2-5</p> <p>Animal Behavior Activity 5, 6 Solar Energy Activity 6</p> <p>Insect Life Activity 6 Weather Instruments Activity 10</p> <p>Small Things and Microscopes Activity 13 Pond Life Activity 12</p> <p>You and Your Body Activity 3, 9-11 Sound Activity 8-11</p> <p>Earth Movements Activity 4 Pond Life Activity 12</p> <p>Powders and Crystals Activity 2-12 Oceans Activity 3, 4</p>
<ul style="list-style-type: none"> • Observing • Measuring 	<p>Lenses and Mirrors Activity 3, 5, 7 Food Chains and Webs Activity 1, 4-6</p> <p>Flight and Rocketry Activity 8, 9 Measuring Activity 5, 6, 8, 10, 12</p>

<ul style="list-style-type: none"> • Defining operationally • Communicating • Predicting • Collaborating • Writing lab reports/scientific journals 	<p>Looking at Liquids Activity 6-8 Flight and Rocketry Activity 2</p> <p>Plant and Animal Life Cycles Activity 4, 5 Weather Forecasting Activity 9, 11</p> <p>Rocks and Minerals Activity 10 Looking at Liquids Activity 6-9</p> <p>Powders and Crystals Activity 5-10 Pollution Activity 9</p> <p>Animal Behavior Activity 5, 6 Solar Energy Activity 8</p>
<p>5. Think critically and logically to make inferences and relationships between evidence and explanations. Example: relating length of string to frequency of pendulum swings</p>	<p>Water Cycle Activity 9, 11-13 Color and Light Activity 3-6</p>
<p>6. Investigate alternative explanations of results.</p>	<p>Fungi-Small Wonders Activity 7 Animal Behavior Activity 9, 10</p>
<p>7. Use available technology to communicate scientific procedures and to defend explanations.</p>	
<p>8. Apply mathematical knowledge and skills to scientific investigations.</p> <ul style="list-style-type: none"> • Computation • Probability • Graphing (bar, line, circle and pictograph) • Variables • Fractions and decimals • Arithmetic mean, mode, median and range • Measurement (metric) 	<p>Measuring Activity 4, 8 Oceans Activity 1</p> <p>Animal Behavior Activity 9, 10 Plant and Animal Life Cycles Activity 7</p> <p>Electromagnetism Activity 6 Weather Instruments Activity 6</p> <p>Solar Energy Activity 6 Pond Life Activity 12</p> <p>Oceans Activity 2, 4 Solar System Activity 11</p> <p>Dinosaur Classification Activity 6</p> <p>Simple Machines Activity 1, 3 Solar System Activity 5, 6</p>
<p>9. Demonstrate an understanding of the relationships among science, technology, and society past and present.</p> <ul style="list-style-type: none"> • Explaining how scientists use technology in scientific research • Recognizing the importance of science and technology to many careers 	<p>Earth Movements Activity 2 Science, Technology, and Society Oceans Activity 4, 4 Science and Math</p> <p>Rocks and Minerals Activity 11 Science and Careers Magnets Activity 8 Science and Careers</p>

<ul style="list-style-type: none"> • Demonstrating an understanding of the impact of society on human health and environmental conditions • Recognizing contributions of science to development and design of technology 	<p>You and Your Body Activity 6 Science and Health Food Chains and Webs Activity 12 Science, Technology, and Society</p> <p>Electromagnetism Activity 6 Science, Technology, and Society</p>
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PHYSICAL SCIENCE

Properties and Changes in Matter

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
10. Describe the evidence of chemical changes. <ul style="list-style-type: none"> • Color change • Gas formation • Solid formation 	<p>Looking at Liquids Activity 12 Powders and Crystals Activity 6-9 Rocks and Minerals Activity 6</p>

Forces and Motion

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
11. Recognize that gravity is a force that pulls every mass toward every other center of mass Examples: Objects falling when released, objects rolling down ramps, objects orbiting planets and the sun	<p>Flight and Rocketry Activity 2 Solar System Activity 1</p>
12. Describe how simple machines make work easier. <ul style="list-style-type: none"> • Lever • Wedge • Inclined plane • Wheel and axle • Pulley • Screw 	<p>Simple Machines Activity 1, 2, 4-12</p>

Energy

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
13. Describe various forms of energy. <ul style="list-style-type: none"> • Chemical • Electrical • Heat • Light • Magnetic • Mechanical • Nuclear • Sound 	<p>Electrical Circuits Activity 1, 10 Sound Activity 2, 3 Electromagnetism Activity 1, 6</p>
14. Describe a variety of sources for producing and conserving different forms of energy.	<p>Rocks and Minerals Activity 10 Science and Social Studies</p>

Examples: sun–solar; atomic–nuclear; Earth–geothermal, fossil fuels; atmosphere–wind; water–hydromechanical, hydroelectric; plants and animals–biomass	Oceans Activity 9 Science, Technology, and Society Solar Energy Activity 9, 10 9 Science, Technology, and Society
15. Recognize transformation of energy. Examples: chemical to electrical, electrical to sound, mechanical to heat	Electrical Circuits Activity 1, 10 Solar Energy Activity 9, 10 Electromagnetism Activity 6-10
16. Recognize that heat flows from hot materials to cold materials. Example: melting of ice cubes at room temperature	Solar Energy Activity 2, 3 Powders and Crystals Activity 9
17. Describe methods of energy transfer. <ul style="list-style-type: none"> • Conduction • Convection • Radiation 	Solar Energy Activity 1, 2, 9, 10 Powders and Crystals Activity 9

LIFE SCIENCE

Structure and Function of Living Systems

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
18. Recognize cumulative change over time by comparing similarities and differences of fossils to living organisms.	Dinosaur Classification Activity 2, 3 Earth Movements Activity 3
19. Identify the components and functions of human body systems. <ul style="list-style-type: none"> • Digestive • Skeletal • Muscular • Immune 	You and Your Body Activity 1, 2, 4-8, 13, 14

Diversity and Adaptations

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
20. Develop classification systems for specific purposes.	Insect Life Activity 6 Dinosaur Classification Activity 9, 10
21. Recognize that living things are made of one or more cells	Small Things and Microscopes Activity 7-9 Fungi-Small Wonders Activity 4
22. Describe cells as observed with the aid of various technologies.	Small Things and Microscopes Activity 7-9 Fungi-Small Wonders Activity 4

Organisms and Environments

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
23. Relate populations within a habitat to communities, ecosystems, and biomes.	Pond Life Activity 11, 11 Science Extension Food Chains and Webs Activity 11, 12 Insect Life Activity 10
24. Describe a variety of ecosystems.	Pond Life Activity 1, 3 Insect Life Activity 4
25. Identify the effects of biotic (living) and abiotic (nonliving) components on ecosystems. <ul style="list-style-type: none"> • Biotic–plants, animals (including 	Food Chains and Webs Activity 10 Science, Technology, and Society Activity 12 Science, Technology, and Society

<ul style="list-style-type: none"> humans) Abiotic—light, temperature ranges, soil composition 	Insect Life Activity 13 Science and Social Studies Pond Life Activity 12
26. Trace energy transfer within terrestrial and aquatic ecosystems. <ul style="list-style-type: none"> Food chains Food webs 	Food Chains and Webs Activity 11, 12 Activity 12 Science Extension Insect Life Activity 10 Pond Life Activity 11, 11 Science Challenge

EARTH AND SPACE SCIENCE

Dynamic Earth

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
27. Identify and describe spheres of the Earth. <ul style="list-style-type: none"> Lithosphere Atmosphere Hydrosphere Biosphere 	Earth Movements Activity 1, 2 Water Cycle Activity 1 Oceans Activity 1-3
28. Describe the features of the oceans. <ul style="list-style-type: none"> Ocean floor: valley, trench, ocean ridge, mountain, continental shelf, continental slope Currents Composition 	Oceans Activity 4, 6-9 Earth Movements Activity 2, 7, 8

Earth in Space

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
29. Relate the tides to the movements of the moon and the earth.	Oceans Activity 9
30. Analyze effects of the sun on the earth. Examples: plant growth, winds, ocean currents, water cycle, seasons	Solar Energy Activity 1, 3 Science Challenge Water Cycle Activity 13 Weather Instruments Activity 6 Science Challenge
31. Describe technology used to investigate the earth. Examples: sonar, radar, seismograph, laser, satellite sensors	Oceans Activity 4, 4 Science and Math Earth Movements Activity 6 Science and Math Weather Instruments Activity 12 Science, Technology, and Society
32. Identify technology used to update knowledge about the earth/solar system. Examples: orbiting spacecraft, aircraft, weather balloons, remote sensing systems	Solar System Activity 2 Science, Technology, and Society Weather Instruments Activity 12 Science Technology, and Society Weather Forecasting Activity 9 Science, technology, and Society

Ordered Universe

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
33. Describe the components of the universe. Examples: star systems, galaxies, black holes, nebulae	Solar System Activity 1, 10-12

34. Describe how instruments are used to observe the universe.

Examples: telescopes (Hubble, radio, light, x-ray); space probes

Solar System

Activity 1 Science, Technology, and Society

Activity 2 Science and Social Studies

Activity 3 Science, Technology and Society

Scientific Processes Grade Six Content Standards

PROCESS AND APPLICATION

Process and Application

<i>CONTENT STANDARDS</i>	<i>DSM ACTIVITY</i>
<p><i>Students will:</i></p> <p>1. Identify questions that can be answered through scientific investigations.</p>	<p>Lenses and Mirrors Activity 4-6 Erosion Activity 5, 10-12 Plants in Our World Activity 3</p>
<p>2. Design experiments and use appropriate tools and technology to gather, analyze, and interpret data. Examples: thermometers, microscopes, balances, computers, electronic probeware</p>	<p>Solar Energy Activity 10, 12 Pollution Activity 10, 12 Chemical Interaction Activity 11-13</p>
<p>3. Demonstrate the ability to perform safe and appropriate manipulation of materials, living organisms, scientific equipment, and technology.</p>	<p>Electromagnetism Activity 6-10 Electrical Connections Activity 7, 11, 13 Famous Scientists Activity 5, 6</p>
<p>4. Use proper procedures in the handling and care of living organisms and specimens derived from living things.</p>	<p>Pond Life Activity 8, 9 Fungi-Small Wonders Activity 10, 11 Plants in Our World Activity 5, 6</p>
<p>5. Use appropriate skills to design and conduct a scientific investigation.</p> <ul style="list-style-type: none"> • Acquiring, processing, and interpreting data • Identifying dependent and independent variables and their relationships experiments • Identifying cause and effect • Sorting and classifying • Controlling and manipulating variables • Designing and analyzing investigations • Developing hypotheses • Formulating models, tables, charts and graphs • Keeping accurate records • Analyzing investigations • Observing • Measuring 	<p>Color and Light Activity 2-5 DNA-From Genes to Protein Activity 7, 8 Solar Energy Activity 6 Plants in Our World Activity 3 Astronomy Activity 10 Weather Forecasting Activity 10 Pond Life Activity 12 You and Your Body Activity 9-11 Newton's Toy Box Activity 8, 9 Oceans Activity 3, 4 If Shipwrecks Could Talk Activity 4, 5 Famous Scientists Activity 7, 10 Lenses and Mirrors Activity 3, 5-7 Flight and Rocketry Activity 8, 9</p>
<p>6. Express measurements in appropriate <i>Systeme International (SI)</i> units.</p>	<p>Newton's Toy Box Activity 7-9 Earth, Moon, and Sun Activity 4 Chemical Interactions Activity 1, 2</p>
<p>7. Use scientific evidence to develop descriptions, explanations, predictions, and models.</p>	<p>Famous Scientists Activity 11, 12 Electrical Connections Activity 9, 10 Earth Processes Activity 10-12</p>
<p>8. Explain relationships between evidence and explanations.</p>	<p>Color and Light Activity 3-6 Earth Processes Activity 10, 12 If Shipwrecks Could Talk Activity 7, 8</p>
<p>9. Evaluate explanations and scientific theories of natural phenomena.</p>	<p>Oceans Activity 7-8 Newton's Toy Box Activity 2, 3 Earth Processes Activity 10, 12, 14</p>
<p>10. Communicate orally and in writing scientific</p>	<p>Famous Scientists Activity 3, 7</p>

procedures and explanations. Examples: Laboratory reports, science projects, PowerPoint presentations, science journals	Chemical Interactions activity 10-12 Pond Life Activity 12
11. Use appropriate mathematics in all aspects of scientific inquiry.	Oceans Activity 1 Solar Energy Activity 6 Chemical Interactions Activity 1, 2
12. Explain the use of technology in scientific research.	Oceans Activity 4, 4 Science and Math Astronomy Activity 9, Science, Technology, and Society DNA-From Genes to Proteins Activity 4 Science, Technology, and Society
13. Explain the importance of science and technology to many careers.	Rocks and Minerals Activity 11 Science and Careers Electrical Connections Activity 3 Science and Careers Plants in Our World Activity 5 Science and Careers
14. Exhibit legal and ethical behaviors necessary for responsible scientific investigations. Examples: avoiding plagiarism; altering data, hypotheses, or results; proper care of animals	Pond Life Activity 8, 9 DNA-From Genes to Proteins Activity 12 Science, Technology, and Society Famous Scientists Activity 10, 10 Science, Technology, and Society
15. Demonstrate the use of computer skills in scientific investigations. Examples: electronic reference sources; data management and analysis; preparation, presentation, and communication of results	
16. Explain how scientific discoveries have been influenced by historical events and cultures, including technological advances.	Famous Scientists Activity 1-4 Astronomy Activity 2 Science and Social Studies DNA-From Genes to Proteins Activity 1 Science Challenge

PHYSICAL SCIENCE

Properties and Changes in Matter

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
17. Distinguish between physical and chemical changes in matter.	Chemical Interactions Activity 2, 3, 10-13 Oceans Activity 2
18. Differentiate between homogeneous mixtures (solutions) and heterogeneous mixtures. Examples: homogeneous – salt and water, air; heterogeneous – salt and sand, iron filings and sulfur, nonhomogenized milk	Chemical Interactions Activity 3 Oceans Activity 2, 3

Forces and Motions

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
19. Describe the relationship of magnitude of force	Famous Scientists Activity 3

to distance between two objects. <ul style="list-style-type: none"> • Magnets (magnetic force) • Charged objects (electrical force) • Masses (gravitational force) 	Newton's Toy Box Activity 3 Electrical Connections Activity 1, 1 Science Challenge
20. Relate force and motion to work.	Simple Machines Activity 1
21. Describe the ways simple machines can change force.	Simple Machines Activity 2, 5-12 Famous Scientists Activity 2
22. Distinguish between potential energy and kinetic energy.	Newton's Toy Box Activity 5, 8, 10

Energy Transformation

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
23. Describe the relationship between electricity and magnetism.	Electromagnetism Activity 5-11 Electrical Connections Activity 4
24. Explain the law of conservation of energy and its relation to energy transformation. Examples: chemical to electrical, chemical to heat, electrical to heat, electrical to mechanical, electrical to sound	Solar Energy Activity 2, 10 Electromagnetism Activity 6, 9, Activity 9 Science Extension
25. Describe methods of heat transfer. <ul style="list-style-type: none"> • Conduction • Radiation • Convection 	Solar Energy Activity 2, 3, 9 Science Challenge, 11 Science and Careers Electrical Connections Activity 7, 7 Science Extension

LIFE SCIENCE

Structure and Function of Living Systems

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
26. Explain the cell theory.	Plants in Our World Activity 1 DNA-From Genes to Proteins Activity 3, 4
27. Identify different types of single-cell organisms. <ul style="list-style-type: none"> • Protists • Bacteria 	Pond Life Activity 6, 7 Fungi-Small Wonders Activity 4
28. Explain the basic life functions of single-cell organisms. <ul style="list-style-type: none"> • Movement • Growth and repair • Reproduction • Ingestion • Digestion • Respiration • Excretion 	Pond Life Activity 7, 7 Science and Language Arts Fungi-Small Wonders Activity 4

Diversity and Adaptations

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
29. Analyze criteria used to develop the biological classification system. <ul style="list-style-type: none"> • Internal structures • External structures • Chemical processes • Common ancestry 	Pond Life Activity 8 Science Extension Activity 9 Science Challenge Fungi-Small Wonders Activity 1, 2, 4
30. Compare distinguishing characteristics of organisms. <ul style="list-style-type: none"> • Anatomical features • Methods of locomotion • Methods of reproduction • Patterns of development 	Pond Life Activity 4-7, 9 Science Challenge Fungi-Small Wonders Activity 1, 2, 4 Plants in Our World Activity 1, 8, 9
31. Distinguish the major differences between plants and animals and explain why some organisms do not fit into either classification.	Pond Life Activity 3, 6 Fungi-Small Wonders Activity 1, 2, 4 Plants in Our World Activity 1

Organisms and Environments

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
32. Analyze how geographic features cause diversity of flora and fauna. Examples: elevation, location, climate	Pond Life Activity 1, 3, 4 Plants in Our World Activity 1 Science and Social Studies
33. Describe the earth's biomes and the interdependence among their populations. Examples: rainforest, grassland, tundra, desert, chaparral	
34. Explain the impact of society on human health and environmental conditions.	Pond Life Activity 7 Science, Technology, and Society Pollution Activity 1, 4 Science and Health Activity 9 Science, Technology, and Society Social
35. Explain the need for management and conservation of natural resources.	Pond Life Activity 9 Science, Technology, and Society Plants in Our World Activity 10 Science Extension Pollution Activity 5 Science and Math Activity 7 Science and Math

EARTH AND SPACE SCIENCE

Dynamic Earth

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
36. Describe the atmosphere of the Earth. <ul style="list-style-type: none"> • Formation • Composition • Layers • Weather 	Weather Forecasting Activity 1 Science Challenge

<ul style="list-style-type: none"> • Climate 	
<p>37. Analyze the connection between the spheres of the earth and its natural cycles. .</p> <ul style="list-style-type: none"> • Water • Nitrogen • Oxygen-Carbon Dioxide • Carbon 	<p>Oceans Activity 1, 5 Weather Forecasting Activity 1 Science Extension</p>
<p>38. Analyze factors producing global patterns of atmospheric movement that influence local weather. Examples: heating of the atmosphere, oceans, and land masses; wind and ocean current systems; Coriolis effect</p>	<p>Oceans Activity 1 Science Challenge Activity 8 Science Challenge Weather Forecasting Activity 6 Science Challenge</p>
<p>39 Describe technology that monitors the Earth and outer space. Examples: weather satellites used to monitor storms and other weather systems, radio telescopes</p>	<p>Weather Forecasting Activity 7 Science, Technology, and Society Activity 12 Science, Technology, and Society Astronomy Activity 9 Science, Technology, and Society</p>
<p>40. Describe the lithosphere of the earth.</p> <ul style="list-style-type: none"> • Composition • Structure of the Earth’s interior • Rock cycles • Weathering and erosion • Soil characteristics 	<p>Rocks and Minerals Activity 1, 10 Activity 1 Science and Math Earth Processes Activity 2-7, 13, 14</p>
<p>41. Identify structural features of the Earth and locations of these features using topographic maps.</p>	
<p>42. Identify locations on maps and globes using a latitude/longitude coordinate system.</p>	<p>Earth Processes Activity 10 If Shipwrecks Could Talk Activity 3</p>

Earth in Space

<i>CONTENT STANDARDS</i>	<i>DSM</i>
<i>Students will:</i>	<i>ACTIVITY</i>
<p>43. Compare the biological and geological features of the Earth and other bodies in the solar system.</p> <ul style="list-style-type: none"> • Composition • Relative size and position • Ability to support life 	<p>Earth Processes Activity 5, 7, 13, 14 Earth, Moon, and Sun Activity 3, 4 Activity 1 Science Challenge</p>

Scientific Processes Grade Seven Content Standards

PROCESS AND APPLICATION

Process and Application

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
1. Identify questions that can be answered through scientific investigations.	Plants in Our World Activity 3 Electrical Connections Activity 9, 10 Earth, Moon, and Sun Activity 3, 4
2. Design experiments and use appropriate tools and technology to gather, analyze, and interpret data. Examples: thermometers, microscopes, balances, computers, electronic probeware	Chemical Interactions Activity 11-13 Newton's Toy Box Activity 8, 9 If Shipwrecks Could Talk Activity 4
3. Demonstrate the ability to perform safe and appropriate manipulation of materials, living organisms, scientific equipment, and technology.	Electrical Connections Activity 7, 11, 13 Famous Scientists Activity 5, 6 Astronomy Activity 9
4. Use proper procedures in the handling and care of living organisms and specimens derived from living things.	Plants in Our World Activity 6 Famous Scientists Activity 10
5. Use appropriate skills to design and conduct a scientific investigation. <ul style="list-style-type: none"> Acquiring, processing, and interpreting data Identifying dependent and independent variables and their relationships experiments Identifying cause and effect Sorting and classifying Controlling and manipulating variables Designing and analyzing investigations Developing hypotheses Formulating models, tables, charts and graphs Keeping accurate records Observing /Measuring 	DNA-From Genes to Proteins Activity 7, 8 Plants in Our World Activity 3 Astronomy Activity 10 Earth, Moon, and Sun Activity 10, 11 Newton's Toy Box Activity 8, 9 Earth Processes Activity 11, 12 If Shipwrecks Could Talk Activity 4, 5 Famous Scientists Activity 7, 10 Chemical Interactions Activity 1, 2 Electrical Connections Activity 7-9
6. Express measurements in appropriate <i>Systeme International</i> (SI) units.	Newton's Toy Box Activity 7-9 Chemical Interactions Activity 1, 2 Earth, Moon, and Sun Activity 4
7. Use scientific evidence to develop descriptions, explanations, predictions, and models.	Famous Scientists Activity 11, 12 Electrical Connections Activity 9, 10 Earth Processes Activity 10-12
8. Explain relationships between evidence and explanations.	Earth Processes Activity 10, 12 If Shipwrecks Could Talk Activity 7, 8 Newton's Toy Box Activity 8, 9
9. Evaluate explanations and scientific theories of natural phenomena.	Newton's Toy Box Activity 2, 3 Earth Processes Activity 10, 12, 14 Famous Scientists Activity 11, 12

10. Communicate orally and in writing scientific procedures and explanations. Examples: Laboratory reports, science projects, PowerPoint presentations, science journals	Famous Scientists Activity 3, 7 Chemical Interactions Activity 10-12 Plants in Our World Activity 3, 10, 11
11. Use appropriate mathematics in all aspects of scientific inquiry. Examples: graphs, ratios and proportions, estimation, fractions, percents	Chemical Interactions Activity 1, 2 Newton's Toy Box Activity 7-9 Electrical Connections Activity 7-10
12. Explain the use of technology in scientific research.	Astronomy Activity 9 Science, Technology, and Society DNA-From Genes to Proteins Activity 4 Science, Technology, and Society Newton's Toy Box Activity 11 Science, Technology, and Society
13. Explain the importance of science and technology to many careers.	Electrical Connections Activity 3 Science and Careers Plants in Our World Activity 5 Science and Careers Earth Processes Activity 1 Science and Careers
14. Exhibit legal and ethical behaviors necessary for responsible scientific investigations. Examples: avoiding plagiarism; altering data, hypotheses, or results; caring properly for animals	DNA-From Genes to Proteins Activity 12 Science, Technology, and Society Famous Scientists Activity 10 Activity 10 Science, Technology, and Society
15. 15. Demonstrate the use of computer skills in scientific investigations. Examples: electronic reference sources; data management and analysis; preparation, presentation, and communication of results	
16. 16. Explain how scientific discoveries have been influenced by historical events and cultures, including technological advances.	Famous Scientists Activity 1-4 Astronomy Activity 2 Science and Social Studies Activity 6 Science, Technology, and Society DNA-From Genes to Proteins Activity 1 Science Challenge

PHYSICAL SCIENCE

Properties and Changes in Matter

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
17. Identify independent and dependent physical properties of matter. <ul style="list-style-type: none"> Independent – solubility, boiling/melting point, density Dependent – mass and weight, volume 	Chemical Interactions Activity 1, 2, 10 Earth Processes Activity 3
18. Compare particle motion in solids, liquids, gases, and plasma.	
19. Classify substances based on their properties. <ul style="list-style-type: none"> Elements Compounds Mixtures 	Chemical Interactions Activity 4-6

<p>20. Explain the development of the general concept of atoms.</p> <ul style="list-style-type: none"> • Democritus model • Bohr model • Modern atomic model 	<p>Chemical Interactions 4 Science Extension</p>
<p>21. Identify the number of protons, electrons, and neutrons in atoms of common elements using the atomic number and mass number.</p>	<p>Chemical Interactions Activity 4</p>

Energy Transfer and Transformation

<p style="text-align: center;"><i>CONTENT STANDARDS</i></p> <p><i>Students will:</i></p>	<p style="text-align: center;"><i>DSM</i> <i>ACTIVITY</i></p>
<p>22. Describe the characteristics of a wave.</p> <ul style="list-style-type: none"> • Wavelength • Frequency • Speed • Amplitude 	<p>Oceans* Activity 6</p> <p>*a grade six module</p>
<p>23. Describe how waves travel through different kinds of media.</p>	<p>Earth Processes Activity 8</p>
<p>24. Explain how energy is transferred through waves.</p> <ul style="list-style-type: none"> • Earthquake waves • Sound waves • Water waves • Electromagnetic waves 	<p>Oceans* Activity 6 Science Challenge Earth Processes Activity 8</p> <p>*a grade six module</p>
<p>25. Explain physical interactions of light and matter and their effect on color perception.</p> <ul style="list-style-type: none"> • Refraction example: rainbow • Absorption examples: reflection from a colored object, transmission through a colored liquid • Transmission examples: scattering, absorption, or refraction as light passes through a material • Scattering examples: red sky at sunset, blue sky 	<p>Color and Light* Activity 1-7</p> <p>*a grade six module</p>
<p>26. Differentiate among reflection, refraction, and diffraction of waves.</p>	<p>Lenses and Mirrors* Activity 1, 8</p> <p>*a grade six module</p>
<p>27. Compare the uses of sound, light, radio and microwave energy to transfer information.</p>	<p>Electromagnetism* Activity 7 Activity 7 Science, Technology, and Society</p> <p>* a grade six module</p>

LIFE SCIENCE

Structure and Function of Living Systems

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
28. Describe the two types of cells. <ul style="list-style-type: none"> • Prokaryotic cells • Eukaryotic cells 	DNA-From Genes to Proteins Activity 11
29. Compare structures and functions of plant and animal cells.	DNA-From Genes to Proteins Activity 3, 4 Plants in Our World* Activity 1 * a grade six module
30. Relate needs to structures within cells of plants and animals. <ul style="list-style-type: none"> • Energy capture and release • Transport of materials • Information feedback • Waste disposal • Reproduction • Movement 	DNA-From Genes to Proteins Activity 3 Plants in Our World* Activity 1 * a grade six module
31. Compare cells, tissues, organs, and systems.	Plants in Our World* Activity 1, 2 * a grade six module
32. Identify the components and functions of the respiratory and excretory systems.	You and Your Body* Activity 5-7 * a grade six module

Heredity and Reproduction

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
33. Explain that mitosis results in more cells for growth and repair.	DNA-From Genes to Proteins Activity 5 Science Extension
34. Describe reproduction in plants and animals. <ul style="list-style-type: none"> • Asexual • Sexual 	Pond Life* Activity 10 Fungi-Small Wonders* Activity 4 * a grade six module
35. Identify the components and functions of the human reproductive system.	
36. Explain that heredity is the passage of specific traits from one generation to another.	DNA-From Genes to Proteins Activity 3 Science Challenge Activity 3 Science Extension

Organisms and Environments

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
37. Identify the sun as the source of energy for all organisms.	Plants in Our World Activity 3, 8, 9
38. Analyze ways by which matter and energy flow	Plants in Our World Activity 8-10

<p>through an ecosystem.</p> <ul style="list-style-type: none"> • Photosynthesis • Cellular respiration • Food chain • Food web • Energy pyramid 	<p>Pond Life* Activity 11, 11 Science Challenge</p> <p>* a grade six module</p>
<p>39. Explain different relationships among living organisms.</p> <ul style="list-style-type: none"> • Competition • Producer/consumer/decomposer • Predator/prey 	<p>Pond Life* Activity 11</p> <p>* a grade six module</p>
<p>40. Describe factors that affect the growth and survival of organisms in an ecosystem. Examples: food, shelter, water, climate, nutrients, physical space, other populations, disease, pollution, natural disasters</p>	<p>Pond Life* Activity 11 Science, Technology, and Society Pollution* Activity 9 Science, Technology, and Society Activity 10 Science and Social Studies</p> <p>* a grade six module</p>
<p>41. Describe responses in organisms produced by environmental stimuli.</p> <ul style="list-style-type: none"> • Migration/hibernation • Fight or flight • Homeostasis 	<p>Plants in Our World Activity 3</p>

EARTH AND SPACE SCIENCE

Dynamic Earth

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
<p>42. Trace the scientific development of the idea of continental drift and the resulting plate tectonics theory.</p> <ul style="list-style-type: none"> • Plate motion and interactions • Volcanic activity • Earthquakes 	<p>Earth Processes Activity 1, 8, 10-14</p>

Earth in Space

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
<p>43. Describe how gravity is a force pulling toward an object's center of mass.</p>	<p>Famous Scientists Activity 3 Newton's Toy Box Activity 2, 3 Earth, Moon, and Sun Activity 12</p>
<p>44. Identify regular movements of the Earth, moon, and sun that determine patterns.</p> <ul style="list-style-type: none"> • Day, month, year • Phases of the moon • Eclipses • Tides • Seasons 	<p>Earth, Moon, and Sun Activity 9-12 Astronomy Activity 5</p>

Scientific Processes Grade Eight Content Standards

PROCESS AND APPLICATION

Process and Application

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
1. Identify questions that can be answered through scientific investigations.	Plants in Our World Activity 3 Earth, Moon, and Sun Activity 3, 4 Electrical Connections Activity 9, 10
2. Design experiments and use appropriate tools and technology to gather, analyze, and interpret data. Examples: thermometers, microscopes, balances, computers, electronic probeware	Chemical Interactions Activity 11-13 Newton's Toy Box Activity 8, 9 If Shipwrecks Could Talk Activity 9, 10
3. Demonstrate the ability to perform safe and appropriate manipulation of materials, living organisms, scientific equipment, and technology.	Electrical Connections Activity 7, 11, 13 Famous Scientists Activity 5, 6 Astronomy Activity 9
4. Use proper procedures in the handling and care of living organisms and specimens derived from living things.	Plants in Our World Activity 5, 6 Famous Scientists Activity 10
5. Use appropriate skills to design and conduct a scientific investigation. <ul style="list-style-type: none"> • Acquiring, processing, and interpreting data • Identifying dependent and independent variables and their relationships • Identifying cause and effect • Sorting and classifying • Controlling and manipulating variables • Designing and analyzing investigations • Developing hypotheses • Formulating models, tables, charts and graphs • Keeping accurate records • Observing • Measuring 	DNA - From the Genes to Protein Activity 7, 8 Plants in Our World Activity 3 Astronomy Activity 10 Earth, Moon, and Sun Activity 10, 11 Newton's Toy Box Activity 8, 9 Earth Processes Activity 11, 12 If Shipwrecks Could Talk Activity 4, 5 Famous Scientists Activity 7, 10 Chemical Interactions Activity 1, 2 Electrical Connections Activity 7-9
6. Express measurements in appropriate <i>Systeme International</i> (SI) units.	Newton's Toy Box Activity 7-9 Chemical Interactions Activity 1, 2 Earth, Moon, and Sun Activity 4
7. Use scientific evidence to develop descriptions, explanations, predictions, and models.	Famous Scientists Activity 11, 12 Electrical Connections Activity 9, 10 Earth Processes Activity 10-12
8. Explain relationships between evidence and explanations.	Earth Processes Activity 10, 12 If Shipwrecks Could Talk Activity 7, 8 Newton's Toy Box Activity 8, 9
9. Evaluate how observation, experimentation, and data analysis lead to the development of	Newton's Toy Box Activity 2, 3 Earth Processes Activity 10, 12, 14

scientific theories.	Famous Scientists Activity 11, 12
10. Communicate orally and in writing scientific procedures and explanations. Examples: Laboratory reports, science projects, PowerPoint presentations, science journals	Famous Scientists Activity 3, 7 Chemical Interactions Activity 10-12 Plants in Our World Activity 3, 10, 11
11. Use appropriate mathematics in all aspects of scientific inquiry.	Chemical Interactions Activity 1, 2 Newton's Toy Box Activity 7-9 Electrical Connections Activity 7-10
12. Explain the use of technology in scientific research.	Astronomy Activity 9, Activity 9 Science, Technology, and Society DNA - From Genes to Protein Activity 4, Science, Technology, and Society Newton's Toy Box Activity 11 Science, Technology and Society
13. Explain the importance of science and technology to many careers.	Plants in Our World Activity 5 Science and Careers Electrical Connections Activity 3 Science, Technology, and Society Earth Processes Activity 1 Science and Careers
14. Exhibit legal and ethical behaviors necessary for responsible scientific investigations. Examples: avoiding plagiarism or altering data, hypotheses, or results; proper care of animals	DNA - From Genes to Protein Activity 12 Science, Technology, and Society Famous Scientists Activity 10, Activity 10 Science, Technology, and Society
15. Demonstrate the use of computer skills in scientific investigations. Examples: electronic reference sources; data management and analysis; preparation, presentation, and communication of results	
16. Explain how scientific discoveries have been influenced by historical events and cultures, including technological advances.	DNA - From Genes to Protein Activity 1 Science Challenge Famous Scientists Activity 1-4 Astronomy Activity 2 Science and Social Studies, Activity 6 Science, Technology, and Society

PHYSICAL SCIENCE

Properties and Changes in Matter

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
17. Analyze the organizational patterns and predictive nature of the periodic table. <ul style="list-style-type: none"> • Periods and families • Atomic number and mass of an element • Reactivity • Electron configuration of common elements • Metals, metalloids, nonmetals, noble gases 	Chemical Interactions Activity 4-6
18. Identify the roles of electrons in covalent, ionic and metallic bonding.	Chemical Interactions Activity 5, 6

19. Describe chemical reactions as they relate to the law of conservation of matter. Example: balancing simple equations	Chemical Interactions Activity 7, 11 13 Science Challenge
20. Identify factors that affect rates of reaction. <ul style="list-style-type: none"> • Temperature • Nature of reactants • Catalysts • Surface area 	Chemical Interactions Activity 12

Forces and Motions

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
21. Apply Newton's laws of motion to real-world situations. <ul style="list-style-type: none"> • Inertia • Force, mass, acceleration relationships • Action/reaction 	Newton's Toy Box Activity 4-13
22. Describe the motion of an object in terms of position, direction, and speed.	Newton's Toy Box Activity 3, 7-10 Earth, Moon and Sun Activity 8 Famous Scientists Activity 3
23. Relate pressure, force, and area.	Chemical Interactions Activity 2
24. Relate force to pressure in fluids. Examples: mechanical – hydraulics, Boyle's law, Pascal's law; biological – strokes, the bends, turgor pressure, blood pressure	Chemical Interactions Activity 2 Activity 2 Science and Social Studies

LIFE SCIENCE

Structure and Function of Living Systems

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
25. Identify the components and functions of the circulatory and nervous systems.	

Diversity and Adaptations

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
26. Evaluate fossils for evidence of how life and environmental conditions have changed.	Earth Processes Activity 4 Science Challenge, Activity 4 Science Extension
27. Analyze scientific models of evolution. Examples: gradualism, natural selection, genetic drift	Plants in Our World Activity 1 Science Challenge DNA - From Genes to Protein Activity 1 Science Challenge
28. Describe the impact of selective breeding, natural selection, genetic defects, and	DNA - From Genes to Protein Activity 1 Science Challenge

environmental adaptations on the development and survival of species.	
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Heredity and Reproduction

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
29. Explain the importance of the reduction of chromosome number in the production of sperm and egg cells during meiosis.	DNA - From Genes to Protein Activity 5 Science Extension
30. Explain the relationships among genes, chromosomes, and DNA (genetic code).	DNA - From Genes to Protein Activity 5, 6
31. Describe the role of DNA in the transmission of traits and characteristics of organisms.	DNA - From Genes to Protein Activity 5-9
32. Identify lineage of organisms through traits and features. Examples: family genealogy, bloodline of registered pet	
33. Interpret the role of probability in the study of heredity. <ul style="list-style-type: none"> Experiments of Gregor Mendel Punnett Squares 	DNA - From Genes to Protein Activity 3 Science Challenge, Activity 3 Science Extension
34. Describe major factors affecting human health. <ul style="list-style-type: none"> Genetics Behavior Environment 	DNA - From Genes to Protein Activity 3 Science and Health, Activity 7 Science and Health

Organisms and Environments

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
35. Explain the impact of human activity and natural causes on long-range changes in the surface and climate of the Earth. <ul style="list-style-type: none"> Deforestation Ozone depletion Point and non-point sources of pollution Management and conservation of the Earth's wildlife and natural resources Volcanic eruption 	Plants in Our World Activity 10 Science Extension Activity 10 Science, Technology, and Society
36. Describe reasons for monitoring soil, air and water for dangerous levels of harmful substances.	Plants in Our World Activity 10 Science, Technology and Society

EARTH AND SPACE SCIENCE

Ordered Universe

<i>CONTENT STANDARDS</i> <i>Students will:</i>	<i>DSM</i> <i>ACTIVITY</i>
37. Describe scientific evidence for the origin and evolution of the universe.	Famous Scientists Activity 11, 12 Activity 11 Science Extension
38. Explain the use of the speed of light to measure distances in the universe.	Astronomy Activity 8, 8 Science and Math
39. Identify the components of the universe and their relationships. <ul style="list-style-type: none"> • Components: constellations, black holes, galaxies, stars, solar systems, asteroids, comets, meteoroids, nebulae, supernovae, quasars • Relationships: relative size, mass, distance, motion 	Astronomy Activity 1, 3, 5, 6, 10-11 Earth, Moon and Sun Activity 1-5
40. Explain the general life cycle of a star. <ul style="list-style-type: none"> • Formation • Transitions • Death • Hertzsprung-Russell Diagram 	Astronomy Activity 10
41. Identify technology used to investigate the universe. Examples: probes, rockets, telescopes, spectroscopes, computer models	Astronomy Activity 9, Activity 9 Science, Technology, and Society Earth, Moon, and Sun Activity 13 Science, Technology and Society
42. Recognize the impact of space exploration on society. Examples: microwaves, solar panels, fiber optics, satellite communications	Earth, Moon, and Sun Activity 13 Science, Technology and Society