



LJ Group



Educational
Solutions

**Living with Science Supporting
Mississippi Science Standards**

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Section 1.

Mississippi Science Standards

KINDERGARTEN

Kindergarten is the foundation for all other formal learning experiences. Students will explore living/non-living things, the five senses, nutrition, magnets, matter, nonstandard units of measurement, graphs, the earth and environmental concerns. The focus of the K-4 frameworks is hands-on science, full inquiry, self-discovery, cooperative learning, communication and life-long learning.

The competencies are printed in bold face type and are required to be taught. Content strands include **Life Science**, **Physical Science** and **Earth and Space Science** competencies. Process Strands, which should be incorporated into all content strands are: **Unifying Concepts and Processes**, **Science as Inquiry**, **Science and Technology**, **Science in Personal and Social Perspectives**, and **the History and Nature of Science**. Emphasis is on developing the ability to ask questions, to observe, to experiment, to measure, to use computers and calculators, to problem solve/reason, to use tools of science, to gather data, and to communicate findings. The competencies may relate to one, many or all the science curriculum strands and may be combined and taught with other competencies throughout the school year. Competencies are not listed in order of importance, rather the sequence of competencies relates to the broader K-12 framework. Competencies provide a general guideline of ongoing instruction, not isolated units, activities or skills.

The suggested teaching objectives are optional. Objectives indicate concepts that enable the fulfillment of competencies, describe competencies in further detail, or show the progression of concepts throughout the grades. School districts may adopt or modify the objectives and are encouraged to write their own objectives to meet the needs of students in their school district. Through actively investigating and discussing scientific ideas using a variety of tools, students will become confident scientific thinkers.

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KINDERGARTEN

CONTENT STRANDS:

Life Science (L)

Earth and Space Science (E)

Physical Science (P)

COMPETENCIES and Suggested Teaching Objectives:

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

- a. Compare similarities between parents and offspring.
- b. Classify animals as farm, zoo, pet, wild (non-domesticated), or ocean (aquatic) according to appearance and action.
- c. Identify animals by habitat (land, air and water).
- d. Differentiate among humans, other animals, and plants.
- e. Classify objects as living or non-living based on characteristics.
- f. Illustrate parts of a plant.
- g. Identify major external parts of living organisms (human, insects, and plants).

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

- a. Identify the five senses.
- b. Select and describe objects by size, color, shape, texture, and use.
- c. Identify taste (sweet/sour).
- d. Identify smells (pleasant/unpleasant).
- e. Classify sounds (fast/slow, loud/soft).
- f. Classify materials by texture (smooth/rough, soft/hard).

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

- a. Classify foods by food groups.
- b. Recognize good dental hygiene.

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

- a. Classify objects according to color, shape, size, texture, and use.
- b. Identify a solid and a liquid.
- c. Identify objects that sink or float.
- d. Demonstrate the interactions between magnets and objects.
- e. Distinguish between warmer and cooler using a thermometer.
- f. Demonstrate knowledge of fire safety.

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

- a. Model and discuss terms of comparison such as more/less, taller/shorter, heavier/lighter, hotter/colder, and before/after. *
- b. Measure the length, weight and capacity of objects using non-standard units. *
- c. Investigate volume/capacity (holds more, less, or about the same) using different shape containers and materials. *

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

- a. Collect, model and construct graphs using real objects. *
- b. Interpret and analyze data in graphical form (bar graphs, pictographs, etc.). *

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

- a. Describe the Earth according to its shape.
- b. Describe the Earth according to its physical make-up (land, water, air).
- c. Distinguish the characteristics of the seasons.
- d. Describe weather safety and weather differences by using terms related to weather.
- e. Compare and contrast characteristics of day and night.
- f. Distinguish between continents as landforms and oceans as large bodies of water.

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

- a. Describe the appearance of the sun in the sky (very bright; visible only by day).
- b. Describe the appearance of the stars in the sky (faint; some brighter than others; visible only by night).
- c. Describe the appearance of the moon in the sky (visible by day; bright by night; different shapes).
- d. Describe the appearance of clouds in the sky (sometimes covering part or all of the sky; sometimes white or dark gray; sometimes bringing rain; sometimes colorful at sunset; sometimes hiding the sun, moon, and stars).

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

- a. Identify substances that can be recycled.
- b. Determine how environmental hazards can affect organisms living in specific areas.

*** Indicates a similar competency/objective found in the Mississippi Mathematics Framework as well.**

FIRST GRADE

The *First Grade* competencies and objectives are an extension of the Kindergarten concepts. Students will explore patterns and diversity of living organisms, the structure of the solar system, the diversity of Earth's surface, changes in the Earth's atmosphere, environmental concerns, changes in matter and measurement. The focus of the K-4 frameworks is hands-on science, full inquiry, self-discovery, cooperative learning, communication and life-long learning.

The competencies are printed in bold face type and are required to be taught. Content strands include **Life Science**, **Physical Science** and **Earth and Space Science** competencies. Process Strands, which should be incorporated into all content strands are: **Unifying Concepts and Processes**, **Science as Inquiry**, **Science and Technology**, **Science in Personal and Social Perspectives**, and **the History and Nature of Science**. Emphasis is on developing the ability to ask questions, to observe, to experiment, to measure, to use computers and calculators, to problem solve/reason, to use tools of science, to gather data, and to communicate findings. The competencies may relate to one, many or all the science curriculum strands and may be combined and taught with other competencies throughout the school year. Competencies are not listed in order of importance, rather the sequence of competencies relates to the broader K-12 framework. Competencies provide a general guideline of ongoing instruction, not isolated units, activities or skills.

The suggested teaching objectives are optional. Objectives indicate concepts that enable the fulfillment of competencies, describe competencies in further detail, or show the progression of concepts throughout the grades. School districts may adopt or modify the objectives and are encouraged to write their own objectives to meet the needs of students in their school district. Through actively investigating and discussing scientific ideas using a variety of tools, students will become confident scientific thinkers.

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FIRST GRADE

CONTENT STRANDS:

Life Science (L)

Earth and Space Science (E)

Physical Science (P)

COMPETENCIES and Suggested Teaching Objectives:

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

- a. Examine the function of plant parts.
- b. Illustrate the parts of a seed.
- c. Observe and sequence the life cycles of plants, insects, and animals.
- d. Identify major organs of the human body such as the heart, lungs, brain, intestines, and stomach.

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

- a. Classify plants and animals according to external features (scales, feathers, fur, etc.).
- b. Identify plants and animals indigenous to Mississippi.
- c. Compare plants and animals in Mississippi with those found in the jungle, desert and arctic regions.
- d. Explain the term "extinct" as related to animals.

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

- a. Describe the changing position of the sun in the daytime sky.
- b. Describe the changing position of the stars in the nighttime sky.
- c. Describe the changing position of the moon in the sky.
- d. Identify day and night as parts of a cycle of regular change.

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

- a. Name the nine planets.
- b. Identify the sun as the major source of energy.

5. Discover the diversity of the Earth's surface. (E)

- a. Identify features of the Earth's surface such as mountains, lakes, oceans, and rivers.
- b. Describe the difference between the oceans and the continents.

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

- a. Record, graph, and compare weather differences including sunshine, clouds, rain, wind, and snow.
- b. Identify the environmental changes that occur with the seasons.

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

- a. Examine pollution and how recycling helps the environment.
- b. Identify ways to reduce the amount of wastes thrown away.

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

- a. Observe and discuss the transformation of solids, liquids, and gases.
- b. Identify solids, liquids, and gases as states of matter.
- c. Compare/contrast objects according to size, shape, color, texture, and use.
- d. Manipulate magnets to demonstrate the interaction of magnets and other objects.

9. Explore the concepts of length, weight, temperature, and capacity/volume using nonstandard and standard (English and metric) units of measurement. *

- a. Use nonstandard (paper clips, unifix cubes) and standard (inches, centimeters) units to explore length. *
- b. Compare weight of objects (heavy/light). *
- c. Explore and estimate capacity/volume of various containers in nonstandard units. *
- d. Explore the concept of hot/cold using a non-mercury thermometer.

*** Indicates a similar competency/objective found in the Mississippi Mathematics Framework as well.**

SECOND GRADE

The *Second Grade* science competencies and objectives are an extension of concepts learned in Kindergarten and First Grade. Students will explore physical and behavioral characteristics of different species, the diversity of the solar system, changes in the Earth's atmosphere, and the characteristics of sound, light, color, and heat. The focus of the K-4 frameworks is hands-on science, full inquiry, self-discovery, cooperative learning, communication and life-long learning.

The competencies are printed in bold face type and are required to be taught. Content strands include **Life Science**, **Physical Science**, and **Earth and Space Science** competencies. Process Strands which should be incorporated into all content strands are: **Unifying Concepts and Processes**, **Science as Inquiry**, **Science and Technology**, **Science in Personal and Social Perspectives**, and **the History and Nature of Science**. Emphasis is on developing the ability to ask questions, to observe, to experiment, to measure, to use computers and calculators, to problem solve/reason, to use tools of science, to gather data and to communicate findings. The competencies may relate to one, many or all the science curriculum strands and may be combined and taught with other competencies throughout the school year. Competencies are not listed in order of importance, rather the sequence of competencies relates to the broader K-12 framework. Competencies provide a general guideline of ongoing instruction, not isolated units, activities or skills.

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SECOND GRADE

CONTENT STRANDS:

Life Science (L)

Earth and Space Science (E)

Physical Science (P)

COMPETENCIES and Suggested Teaching Objectives:

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

- a. Explain how plants are used as a food source by living organisms and relate this to the food chain.
- b. Dissect and explain the function of the parts of a seed.
- c. Describe the function of the major internal organs to include the heart, brain, lungs, liver, kidneys, and intestines.
- d. Investigate the digestive system.

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

- a. Define and recognize “endangered” species.
- b. Compare and contrast physical and behavioral characteristics of different species.
- c. Analyze the suitability of different environments in meeting the needs of plants and animals.
- d. Classify animals in vertebrate categories (fish, bird, mammal, amphibian, and reptile).

3. Explore the structure of the Solar System. (E)

- a. List and describe the nine planets in order.
- b. Identify the sun as a star.

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

- a. Describe the apparent shapes of the moon from week to week.
- b. Identify the moon’s phases as parts of a cycle of regular change.

5. Recognize the diversity of the Earth’s composition. (E)

- a. Create a model depicting the major layers of the Earth.
- b. Discover and explore the characteristics of various earth materials such as clay, silt, sand, pebbles, and gravel.

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

- a. Introduce the water cycle.
- b. Describe the different types of clouds and the weather associated with each.

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

- a. Design and construct a compost pile.
- b. Observe the benefits of composting to the community.

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

- a. Introduce and discuss the concept that matter takes up space.
- b. Classify solids, liquids and gases as states of matter according to their characteristics.
- c. Determine the properties of the states of matter by experimenting.
- d. Manipulate magnets to show that they are only attracted to certain metals.

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

- a. Demonstrate light and heat as forms of energy.
- b. Identify the colors of the spectrum.
- c. Demonstrate how sound travels through different media (wood, plastics, water, air).

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

- a. Use appropriate tools and terms to explore measurement. *
- b. Estimate and measure length, mass, weight, and capacity/volume using standard units of measurement (inch, foot, yard, centimeter, meter, ounce, pound, gram, kilogram, cup, pint, quart, and liter). *
- c. Categorize measurement terms according to length, mass, weight, and capacity/volume. *
- d. Use convincing arguments to justify the selection of a specific unit of measure for a given item. *
- e. Collect and compare seasonal temperatures using a Fahrenheit thermometer. *

*** Indicates a similar competency/objective found in the Mississippi Mathematics Framework as well.**

THIRD GRADE

The *Third Grade* competencies and objectives are designed to be an extension of those concepts learned in Kindergarten through Second grade. Students will explore organisms and systems, changes in Earth's atmosphere and surface, changes in matter, and measurement skills. The focus of the K-4 frameworks is hands-on science, full inquiry, self-discovery, cooperative learning, communication, and life-long learning.

The competencies are printed in bold face type and are required to be taught. Content strands include **Life Science**, **Physical Science** and **Earth and Space Science** competencies. Process Strands which should be incorporated into all content strands are: **Unifying Concepts and Processes**, **Science as Inquiry**, **Science and Technology**, **Science in Personal and Social Perspectives**, and **the History and Nature of Science**. Emphasis is on developing the ability to ask questions, to observe, to experiment, to measure, to use computers and calculators, to problem solve/reason, to use tools of science, to gather data and to communicate findings. The competencies may relate to one, many or all the science curriculum strands and may be combined and taught with other competencies throughout the school year. Competencies are not listed in order of importance, rather the sequence of competencies relates to the broader K-12 framework. Competencies provide a general guideline of ongoing instruction, not isolated units, activities or skills.

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THIRD GRADE

CONTENT STRANDS:

Life Science (L)

Earth and Space Science (E)

Physical Science (P)

COMPETENCIES and Suggested Teaching Objectives:

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

- a. Identify major causes of endangerment and extinction.
- b. Distinguish between harmful and helpful human actions on the environment.
- c. Describe methods to prevent pollution of the environment.

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

- a. Classify and identify different types of seeds.
- b. Compare and contrast dicot and monocot seeds.
- c. Demonstrate photosynthesis.
- d. Show that plants grow from other parts and explain the germination of seeds.
- e. Label the parts and functions of a flower.
- f. Explain methods of pollination.
- g. Understand the functions of the skeletal system and label major bones of the human body.

3. Identify and describe the appearance of stars in the night sky. (E, P)

- a. Locate and identify constellations as imaginary patterns of stars that remain fixed in shape from night to night.
- b. Describe the actual nature of stars as distant suns that appear small and faint only because of their great distances.

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

- a. Describe the three major layers of the Earth.
- b. Examine and identify rocks of different types (metamorphic, sedimentary, and igneous).
- c. Discuss places fossils can be found.
- d. Relate how internal forces affect the Earth's surface including earthquakes and volcanoes.

5. Examine changes in matter. (P)

- a. Identify and demonstrate chemical changes.
- b. Identify and demonstrate physical changes.

6. Analyze changes in matter. (E)

- a. Label an illustration of the water cycle.
- b. Collect and graph weather data.

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

- a. Identify and compare differences among length, weight/mass, and capacity/volume using English and metric measures. *
- b. Choose appropriate units of measurement for length, weight/mass, and capacity/volume. *
- c. Convert between pints, quarts, and gallons. *
- d. Convert miles to feet and yards. *
- e. Compare metric measurements to English measurements. *
- f. Using various types of instruments measure: *
 - length in millimeters, meters, kilometers
 - mass in grams and kilograms
 - capacity/volume in milliliters and liters
 - time to nearest minute
 - temperature in Celsius and Fahrenheit
- g. Use manipulatives and gridded regions to determine area of shapes. *

*** Indicates a similar competency/objective found in the Mississippi Mathematics Framework as well.**

Process Strands:

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

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FOURTH GRADE

The *Fourth Grade* competencies and objectives are designed to build on concepts and processes learned in Kindergarten through Third grade. Students will explore and investigate electricity, measurement and related concepts, environmental concerns, matter, and energy. The focus of the K-4 frameworks is hands-on science, full inquiry, self-discovery, cooperative learning, communication, and life-long learning.

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FOURTH GRADE

CONTENT STRANDS:

Life Science (L)

Earth and Space Science (E)

Physical Science (P)

COMPETENCIES and Suggested Teaching Objectives:

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

- a. Compare food chains and food webs.
- b. Compare and contrast adaptations necessary for animals and plants to survive in different habitats.

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

- a. Identify parts and basic functions of various body systems (circulatory, respiratory, digestive, skeletal and nervous systems).
- b. Analyze the circulatory system.
- c. Group animals as invertebrates or vertebrates.
- d. Explore the four requirements necessary for photosynthesis.
- e. Compare and contrast flowering and non-flowering plants.

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

- a. Explain why the apparent size of an object depends on its distance from the observer.
- b. Describe the interaction between the Earth, Sun, Earth's moon, and planets of the solar system.
- c. Describe the apparent motion of constellations in the night sky (east to west throughout the night, east to west throughout the year).

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

- a. Locate and identify planets as bright, shining bodies that move in front of the background of constellations.
- b. Explain the nature of telescopes as devices that collect light and enlarge the apparent size of distant objects to reveal otherwise unseen features.
- c. Describe the physical features of the moon (craters, plains, mountains) and the planets.

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

- a. Describe how external forces including heat, wind and water affect the Earth's surface.
- b. Using maps, students identify watershed and run-off patterns of local areas.
- c. Group landform examples by the forces that may have created them.

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

- a. Analyze and predict the weather using the thermometer, anemometer, rain gauge, barometer and hygrometer.
- b. Recognize and collect data of extreme weather conditions.

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

- a. Describe ways to protect the air we breathe.
- b. Recognize the need for conservation of water resources.
- c. Discuss the ways man can protect and manage organisms in the environment.

8. Investigate the changes in the states of matter. (P)

- a. Observe that matter occupies space and has mass and volume.
- b. Demonstrate transformations of the states of matter.
- c. Explore and classify physical and chemical changes.

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

- a. Differentiate energy as potential or kinetic energy.
- b. Identify and explore forms of energy such as heat, sound, light, or electricity.
- c. Demonstrate the use of the sun as an energy source.

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

- a. Measure a given object using specified scientific measurement (English and/or metric).
- b. Select, use, compare and convert within the appropriate standard (English and metric) system of measurement. *
- c. Identify the attributes of length, weight, capacity/volume, mass, time and temperature using English and metric units of measurement. *
- d. Calculate and solve problems with elapsed time. *

*** Indicates a similar competency/objective found in the Mississippi Mathematics Framework as well.**

Section 2.

LWS Correlation at a Glance

	LWS Resource			
	ST20 - Physical Science	ST21 - Life Science	ST22 - Earth Science	ST23 - Scientific Reasoning
Grade K Science Standard Element				
Develop an understanding that living and non-living things have identifiable characteristics.				
Demonstrate an understanding of the five senses.				
Explore proper nutrition and the relationship to personal hygiene.				
Investigate the different types of observable and measurable characteristics of matter.				
Explore and use non-standard units of length, weight and capacity/volume.				
Collect, organize and interpret data.				
Develop an understanding of the Earth as a planet; its structure, and its processes.				
Describe the appearance of the sky by day and by night.				
Discover how environmental concerns relate to land, water, and air.				

	LWS Resource			
	ST20 - Physical Science	ST21 - Life Science	ST22 - Earth Science	ST23 - Scientific Reasoning
Grade 1 Science Standard Element				
Explore the basic patterns of living systems.				
Investigate the diversity of living things.				
Identify and describe daily changes in the sky.				
Examine the structure of the solar system.				
Discover the diversity of the Earth's surface.				
Explore changes that occur in the Earth's atmosphere.				
Investigate how environmental concerns relate to the quality of life.				
Examine the different types of observable and measurable changes that matter can undergo.				
Explore the concepts of length, weight, temperature, and capacity/volume using nonstandard and standard (English and metric) units of measurement.				

	LWS Resource			
	ST20 - Physical Science	ST21 - Life Science	ST22 - Earth Science	ST23 - Scientific Reasoning
Grade 2 Science Standard Element				
Explore the functions and systems of living things.				
Research the diversity and interaction of living things.				
Explore the structure of the Solar System.				
Identify and describe weekly and monthly changes in the sky.				
Recognize the diversity of the Earth' s composition.				
Analyze changes that occur in the Earth' s atmosphere.				
Investigate how environmental concerns relate to the quality of life.				
Predict and explore the effects of forces and energy on matter.				
Investigate the properties of color, heat, and light.				
Determine length, mass, weight, and capacity/volume using the appropriate standard (English and metric) units of measurement.				

	LWS Resource			
	ST20 - Physical Science	ST21 - Life Science	ST22 - Earth Science	ST23 - Scientific Reasoning
Grade 3 Science Standard Element				
Investigate the interactions of objects and organisms.				
Explore the components of living systems.				
Identify and describe the appearance of stars in the night sky.				
Discover how internal and external forces affect the Earth surface.				
Examine changes in matter.				
Analyze changes in matter.				
Develop the process of measurement and related concepts.				

	LWS Resource			
	ST20 - Physical Science	ST21 - Life Science	ST22 - Earth Science	ST23 - Scientific Reasoning
Grade 4 Science Standard Element				
Investigate the ability of living things to adapt to their environment.				
Explore the interactions of components in living systems.				
Communicate an understanding of the interaction of bodies in the solar system.				
Identify and describe the visual and telescopic appearance of planets and moons.				
Discover the effects of external forces on the Earth surface.				
Explore changes that occur in the Earth atmosphere.				
Discover how environmental concerns relate to the hydrosphere, lithosphere, and atmosphere.				
Investigate the changes in the states of matter.				
Examine the different forms of energy.				
Develop the process of measurement and the concepts related to units of measurement.				

Section 3.

LWS Assignment Correlation

Grade K Science Standards Statement

Living with Science Resource							
Physical Science 1	Physical Science 2	Life Science 1	Life Science 2	Earth Science 1	Earth Science 2	Scientific Reasoning 1	Scientific Reasoning 2

Develop an understanding that living and non-living things have identifiable characteristics.

Compare similarities between parents and offspring.			21				
Classify animals as farm, zoo, pet, wild (non-domesticated), or ocean (aquatic) according to appearance and action.				3, 12			
Identify animals by habitat (land, air and water).					1, 11		
Differentiate among humans, other animals, and plants.			21	7, 13			
Classify objects as living or non-living based on characteristics.					1		
Illustrate parts of a plant.			2	13			
Identify major external parts of living organisms (human, insects, and plants).			1, 2, 5, 6	13			

Demonstrate an understanding of the five senses.

Classify materials by texture (smooth/rough, soft/hard).			7					
Identify the five senses.			7, 13					7
Select and describe objects by size, color, shape, texture, and use.			7					
Identify taste (sweet/sour).			7, 13					
Identify smells (pleasant/unpleasant).	3, 21	3, 21	7					
Classify sounds (fast/slow, loud/soft).			7,13					

Explore proper nutrition and the relationship to personal hygiene.

Classify foods by food groups.				5,13				
Recognize good dental hygiene.			21					

Investigate the different types of observable and measurable characteristics of matter.

Classify objects according to color, shape, size, texture, and use.	4, 13, 21						7	7
Identify a solid and a liquid.						7	21	
Identify objects that sink or float.								7
Demonstrate the interactions between magnets and objects.	2							
Distinguish between warmer and cooler using a thermometer.								1
Demonstrate knowledge of fire safety.								

Explore and use non-standard units of length, weight and capacity/volume.

Model and discuss terms of comparison such as more/less, taller/shorter, heavier/lighter, hotter/colder, and before/after.	5	1, 8					11, 21	21
Measure the length, weight and capacity of objects using non-standard units.	1, 11	8			13		1, 5, 11	1, 21
Investigate volume/capacity (holds more, less, or about the same) using different shape containers and materials.						8		

Collect, organize and interpret data.

Collect, model and construct graphs using real objects.		8						1
Interpret and analyze data in graphical form (bar graphs, pictographs, etc.).		2, 8		21	21			1

Develop an understanding of the Earth as a planet; its structure, and its processes.

Describe the Earth according to its shape.					6	2, 12		
Describe the Earth according to its physical make-up (land, water, air).						4, 11, 21		2
Distinguish the characteristics of the seasons.					3	21		
Describe weather safety and weather differences by using terms related to weather.					3, 7	21		
Compare and contrast characteristics of day and night.					2			
Distinguish between continents as landforms and oceans as large bodies of water.						21		

Describe the appearance of the sky by day and by night.

Describe the appearance of the sun in the sky (very bright; visible only by day).						6		
Describe the appearance of the stars in the sky (faint; some brighter than others; visible only by night).								
Describe the appearance of the moon in the sky (visible by day; bright by night; different shapes).					6, 13			
Describe the appearance of clouds in the sky (sometimes covering part or all of the sky; sometimes white or dark gray; sometimes bringing rain; sometimes colorful at sunset; sometimes hiding the sun, moon, and stars).						3		

Discover how environmental concerns relate to land, water, and air.

Identify substances that can be recycled.					5, 13			
Determine how environmental hazards can affect organisms living in specific areas.					1, 11			

Grade 1 Science Standards Statement

Living with Science Resource							
Physical Science 1	Physical Science 2	Life Science 1	Life Science 2	Earth Science 1	Earth Science 2	Scientific Reasoning 1	Scientific Reasoning 2

Explore the basic patterns of living systems.

Examine the function of plant parts.			6	2, 4, 6, 13				
Illustrate the parts of a seed.			2					
Observe and sequence the life cycles of plants, insects, and animals.			2, 11	2, 6, 7, 8, 13				
Identify major organs of the human body such as the heart, lungs, brain, intestines, and stomach.			5	1				

Investigate the diversity of living things.

Classify plants and animals according to external features (scales, feathers, fur, etc.).				3, 11, 12, 14				
Identify plants and animals indigenous to Mississippi.								
Compare plants and animals in Mississippi with those found in the jungle, desert and arctic regions.								
Explain the term "extinct" as related to animals.								

Identify and describe daily changes in the sky.

Describe the changing position of the sun in the daytime sky.					3			
Describe the changing position of the stars in the nighttime sky.								
Describe the changing position of the moon in the sky.					6, 13			
Identify day and night as parts of a cycle of regular change.					2, 11			

Examine the structure of the solar system.

Name the nine planets.						2		
Identify the sun as the major source of energy.				6	3	6		

Discover the diversity of the Earth' s surface.

Identify features of the Earth' s surface such as mountains, lakes, oceans, and rivers.						1, 4		
Describe the difference between the oceans and the continents.								

Explore changes that occur in the Earth' s atmosphere.

Record, graph, and compare weather differences including sunshine, clouds, rain, wind, and snow.					7, 3, 13			
Identify the environmental changes that occur with the seasons.					3, 11			

Investigate how environmental concerns relate to the quality of life.

Examine pollution and how recycling helps the environment.					1, 5, 11			
Identify ways to reduce the amount of wastes thrown away.					5			

Examine the different types of observable and measurable changes that matter can undergo.

Observe and discuss the transformation of solids, liquids, and gases.	11					7, 8, 13	21	
Identify solids, liquids, and gases as states of matter.	11					7, 8	21	
Compare/contrast objects according to size, shape, color, texture, and use.	4, 11, 13						3, 7	7, 13
Manipulate magnets to demonstrate the interaction of magnets and other objects.	2, 11						6, 13	

Explore the concepts of length, weight, temperature, and capacity/volume using nonstandard and standard (English and metric) units of measurement.

Use nonstandard (paper clips, unifix cubes) and standard (inches, centimeters) units to explore length.		3						5, 13
Compare weight of objects (heavy/light).		5					4, 11	5, 7, 14
Explore and estimate capacity/volume of various containers in nonstandard units.		3						
Explore the concept of hot/cold using a non-mercury thermometer.					7			1, 11

Grade 2 Science Standards Statement

Living with Science Resource							
Physical Science 1	Physical Science 2	Life Science 1	Life Science 2	Earth Science 1	Earth Science 2	Scientific Reasoning 1	Scientific Reasoning 2

Explore the functions and systems of living things.

Explain how plants are used as a food source by living organisms and relate this to the food chain.			4	7				
Dissect and explain the function of the parts of a seed.			2					
Describe the function of the major internal organs to include the heart, brain, lungs, liver, kidneys, and intestines.			5					
Investigate the digestive system.			5					

Research the diversity and interaction of living things.

Define and recognize "endangered" species.								
Compare and contrast physical and behavioral characteristics of different species.				3, 7		1		
Analyze the suitability of different environments in meeting the needs of plants and animals.			2, 3	2, 3, 4, 6, 8	1			
Classify animals in vertebrate categories (fish, bird, mammal, amphibian, and reptile).				3, 7				

Explore the structure of the Solar System.

List and describe the nine planets in order.						2		
Identify the sun as a star.						6		

Identify and describe weekly and monthly changes in the sky.

Describe the apparent shapes of the moon from week to week.						6		
Identify the moon's phases as parts of a cycle of regular change.						6		

Recognize the diversity of the Earth's composition.

Create a model depicting the major layers of the Earth.						4		
Discover and explore the characteristics of various earth materials such as clay, silt, sand, pebbles, and gravel.						4, 7, 8		

Analyze changes that occur in the Earth's atmosphere.

Introduce the water cycle.						7	3	
Describe the different types of clouds and the weather associated with each.							3	

Investigate how environmental concerns relate to the quality of life.

Design and construct a compost pile.								
Observe the benefits of composting to the community.						5		

Predict and explore the effects of forces and energy on matter.

Introduce and discuss the concept that matter takes up space.								7
Classify solids, liquids and gases as states of matter according to their characteristics.						4, 7, 8		
Determine the properties of the states of matter by experimenting.	2, 4, 6	1, 5				4, 7, 8	3, 6	
Manipulate magnets to show that they are only attracted to certain metals.	2							

Investigate the properties of color, heat, and light.

Demonstrate light and heat as forms of energy.	4, 7, 8							
Identify the colors of the spectrum.		4, 11, 12						
Demonstrate how sound travels through different media (wood, plastics, water, air).	3, 7, 11	3, 7, 11, 12						

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

Use appropriate tools and terms to explore measurement.	1, 5, 11	8			13		1, 5, 11, 13	1, 11
Estimate and measure length, mass, weight, and capacity/volume using standard units of measurement (inch, foot, yard, centimeter, meter, ounce, pound, gram, kilogram, cup, pint, quart, and liter).		3, 5					4, 11	5, 7, 13, 14
Categorize measurement terms according to length, mass, weight, and capacity/volume.	1, 5	8			13		1, 5, 11	1, 11
Use convincing arguments to justify the selection of a specific unit of measure for a given item.	11				13		11, 14	11
Collect and compare seasonal temperatures using a Fahrenheit thermometer.					7			1, 11

Grade 3 Science Standards Statement

Living with Science Resource							
Physical Science 1	Physical Science 2	Life Science 1	Life Science 2	Earth Science 1	Earth Science 2	Scientific Reasoning 1	Scientific Reasoning 2

Investigate the interactions of objects and organisms.

Identify major causes of endangerment and extinction.			21	6, 7		1		
Distinguish between harmful and helpful human actions on the environment.					1, 5, 21			
Describe methods to prevent pollution of the environment.					1, 5, 11, 13			

Explore the components of living systems.

Classify and identify different types of seeds.			2					
Compare and contrast dicot and monocot seeds.								
Demonstrate photosynthesis.				6				
Show that plants grow from other parts and explain the germination of seeds.			2, 11, 21	2				
Label the parts and functions of a flower.				13				
Explain methods of pollination.				2, 11				
Understand the functions of the skeletal system and label major bones of the human body.			1, 11					

Identify and describe the appearance of stars in the night sky.

Locate and identify constellations as imaginary patterns of stars that remain fixed in shape from night to night.									
Describe the actual nature of stars as distant suns that appear small and faint only because of their great distances.									

Discover how internal and external forces affect the Earth surface.

Describe the three major layers of the Earth.						4		
Examine and identify rocks of different types (metamorphic, sedimentary, and igneous).						4		
Discuss places fossils can be found.					4, 8			
Relate how internal forces affect the Earth surface including earthquakes and volcanoes.						21		

Examine changes in matter.

Identify and demonstrate chemical changes.		2						1, 3, 21
Identify and demonstrate physical changes.		2, 7, 11, 12					8	2, 21

Analyze changes in matter.

Label an illustration of the water cycle.						3, 11, 21		
Collect and graph weather data.					3, 7, 13	21		

Develop the process of measurement and related concepts.

Identify and compare differences among length, weight/mass, and capacity/volume using English and metric measures.	21	3, 5					4, 11	5, 7, 14
Choose appropriate units of measurement for length, weight/mass, and capacity/volume.	11, 21				13		1, 21	21
Convert between pints, quarts, and gallons.								
Convert miles to feet and yards.								
Compare metric measurements to English measurements.	21							21
Using various types of instruments measure: length in millimeters, meters, kilometers - mass in grams and kilograms - capacity/volume in milliliters and liters - time to nearest minute - temperature in Celsius and Fahrenheit.	1, 5	8			13		1, 5, 11, 21	1, 21
Use manipulatives and gridded regions to determine area of shapes.								

Grade 4 Science Standards Statement

Living with Science Resource							
Physical Science 1	Physical Science 2	Life Science 1	Life Science 2	Earth Science 1	Earth Science 2	Scientific Reasoning 1	Scientific Reasoning 2

Investigate the ability of living things to adapt to their environment.

Compare food chains and food webs.				7, 13, 21				
Compare and contrast adaptations necessary for animals and plants to survive in different habitats.				21		1, 11, 21		

Explore the interactions of components in living systems.

Identify parts and basic functions of various body systems (circulatory, respiratory, digestive, skeletal and nervous systems).			1, 5, 7, 11, 13	11				12
Analyze the circulatory system.			5, 13	1, 11				
Group animals as invertebrates or vertebrates.								
Explore the four requirements necessary for photosynthesis.				6				
Compare and contrast flowering and non-flowering plants.								

Communicate an understanding of the interaction of bodies in the solar system.

Explain why the apparent size of an object depends on its distance from the observer.								
Describe the interaction between the Earth, Sun, Earth moon, and planets of the solar system.					6	2, 6		
Describe the apparent motion of constellations in the night sky (east to west throughout the night, east to west throughout the year).								

Identify and describe the visual and telescopic appearance of planets and moons.

Locate and identify planets as bright, shining bodies that move in front of the background of constellations.								
Explain the nature of telescopes as devices that collect light and enlarge the apparent size of distant objects to reveal otherwise unseen features.								
Describe the physical features of the moon (craters, plains, mountains) and the planets.					6	2		

Discover the effects of external forces on the Earth surface.

Describe how external forces including heat, wind and water affect the Earth's surface.						21		
Using maps, students identify watershed and run-off patterns of local areas.								
Group landform examples by the forces that may have created them.						21		

Explore changes that occur in the Earth atmosphere.

Analyze and predict the weather using the thermometer, anemometer, rain gauge, barometer and hygrometer.					3, 7, 13			
Recognize and collect data of extreme weather conditions.					7, 13			

Discover how environmental concerns relate to the hydrosphere, lithosphere, and atmosphere.

Describe ways to protect the air we breathe.								
Recognize the need for conservation of water resources.								
Discuss the ways man can protect and manage organisms in the environment.								

Investigate the changes in the states of matter.

Observe that matter occupies space and has mass and volume.								
Demonstrate transformations of the states of matter.								3, 11
Explore and classify physical and chemical changes.	21	2, 7						3, 21

Examine the different forms of energy.

Differentiate energy as potential or kinetic energy.	7, 13	7						
Identify and explore forms of energy such as heat, sound, light, or electricity.	7	7, 13						
Demonstrate the use of the sun as an energy source.				6		6		

Develop the process of measurement and the concepts related to units of measurement.

Measure a given object using specified scientific measurement (English and/or metric).	1				13		1, 5, 11	21
Select, use, compare and convert within the appropriate standard (English and metric) system of measurement.								
Identify the attributes of length, weight, capacity/volume, mass, time and temperature using English and metric units of measurement.	1				13		1, 5, 11, 21	1, 21
Calculate and solve problems with elapsed time.								5, 13

Section 4.

LWS Objectives Correlation

Mississippi K Grade Science

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| <p>1 Develop an understanding that living and non-living things have identifiable characteristics.</p> | <p>1 Compare similarities between parents and offspring.
<i>Students identify the differences between learnt and inherited traits.</i>
<i>Students identify that heredity traits are those that are passed between parent and offspring.</i></p> <p>2 Classify animals as farm, zoo, pet, wild (non-domesticated), or ocean (aquatic) according to appearance and action.
<i>Creates questions in a classification key to sort a group of farmyard animals.</i>
<i>Uses classification keys to sort animals.</i>
<i>Identifies questions that can be asked to sort different animals.</i></p> <p>3 Identify animals by habitat (land, air and water).
<i>Describes characteristics of animals habitats.</i>
<i>Discovers the habitats of different animals.</i>
<i>Discovers the characteristics of animals that allow them to survive in their natural habitats.</i></p> <p>4 Differentiate among humans, other animals, and plants.
<i>Compares the life cycles of animals and identifies similarities and differences between them.</i>
<i>Determines the placement of animals and plants in food chains.</i>
<i>Identifies if everyday foods come from plants or animals.</i>
<i>States the energy transfer that occurs between plants to animals and animals to animals in food chains.</i>
<i>Compares the life cycles of plants and identifies similarities and differences between them.</i>
<i>Classifies animals as carnivores, herbivores or omnivores.</i></p> <p>5 Classify objects as living or non-living based on characteristics.
<i>Uses a checklist of the seven life processes to identify if things are living or not living.</i></p> <p>6 Illustrate parts of a plant.
<i>Identifies the parts of plants that help them to make their own food.</i></p> <p>7 Identify major external parts of living organisms (human, insects, and plants).
<i>Identifies the parts of plants that help them to make their own food.</i>
<i>Uses a microscope to view the cells of plants.</i>
<i>Investigates the stomach of the human body.</i>
<i>Uses software to discover methods of seeds dispersal from different plants.</i>
<i>Investigates the lungs of the human body.</i>
<i>Investigates the joints of the human body.</i>
<i>Investigates the bones of the human body.</i>
<i>Investigates the heart of the human body.</i></p> |
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| <p>2 Demonstrate an understanding of the five senses.</p> | <p>6</p> | <p>Classify materials by texture (smooth/rough, soft/hard).
 <i>Specifies what senses can be used to identify different things.</i>
 <i>Uses software to find what parts of the human body give each of the five senses.</i>
 <i>Identifies senses of the human body.</i></p> |
| | <p>1</p> | <p>Identify the five senses.
 <i>Uses software to find what parts of the human body give each of the five senses.</i>
 <i>Specifies what senses can be used to identify different things.</i></p> |
| | <p>2</p> | <p>Select and describe objects by size, color, shape, texture, and use.
 <i>Specifies what senses can be used to identify different things.</i>
 <i>Uses software to find what parts of the human body give each of the five senses.</i>
 <i>Identifies senses of the human body.</i>
 <i>Relates the weight, shape and size of a material to its density.</i></p> |
| | <p>3</p> | <p>Identify taste (sweet/sour).
 <i>Uses software to find what parts of the human body give each of the five senses.</i>
 <i>Specifies what senses can be used to identify different things.</i></p> |
| | <p>4</p> | <p>Identify smells (pleasant/unpleasant).
 <i>Identifies senses of the human body.</i>
 <i>Specifies what senses can be used to identify different things.</i>
 <i>Uses software to find what parts of the human body give each of the five senses.</i></p> |
| | <p>5</p> | <p>Classify sounds (fast/slow, loud/soft).
 <i>Identifies that sound travels through string as a vibration by using a string telephone.</i>
 <i>Specifies what senses can be used to identify different things.</i>
 <i>Identifies that the volume of a sound changes as the distance from the source of the sound is increased.</i>
 <i>Identifies that sound travels as a vibration by speaking into a balloon.</i>
 <i>Observes the relationship between length of rubber band and pitch of sound made by a stringed instrument.</i>
 <i>Uses software to find what parts of the human body give each of the five senses.</i>
 <i>Identifies how the size of a vibration can effect the loudness of a sound.</i></p> |
| <p>3 Explore proper nutrition and the relationship to personal hygiene.</p> | <p>1</p> | <p>Classify foods by food groups.
 <i>Discovers the food groups necessary for a healthy balanced diet.</i>
 <i>Associates various nutrients with food groups.</i>
 <i>Identifies the nutrients contained in different foods.</i></p> |
| | <p>2</p> | <p>Recognize good dental hygiene.
 <i>Interprets text to identify the parts of a tooth and things that are considered as good or bad for teeth.</i></p> |

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| <p>4 Investigate the different types of observable and measurable characteristics of matter.</p> | <p>1</p> | <p>Classify objects according to color, shape, size, texture, and use.
 <i>Determines if objects are transparent or opaque using a light ray box.</i>
 <i>Relates the weight, shape and size of a material to its density.</i>
 <i>Describes how density of an object can effect if it floats or sinks in water.</i>
 <i>Identifies if objects are electrical conductors or electrical insulators.</i>
 <i>Uses non-standard measurements, such as paper clips and hands, to measure different objects.</i>
 <i>Identifies the weight of objects in units of newtons and places them in order of their weight.</i>
 <i>Identifies what natural materials have been used to make a series of sample objects.</i></p> |
| | <p>2</p> | <p>Identify a solid and a liquid.
 <i>Separates solids and liquids using filter paper.</i>
 <i>States if everyday items are solids, liquids or gases.</i></p> |
| | <p>3</p> | <p>Identify objects that sink or float.
 <i>Describes how density of an object can effect if it floats or sinks in water.</i></p> |
| | <p>4</p> | <p>Demonstrate the interactions between magnets and objects.
 <i>Observes the magnetic attraction and repulsion forces between the poles of magnets.</i></p> |
| | <p>5</p> | <p>Distinguish between warmer and cooler using a thermometer.
 <i>Uses graphs to plot the change of temperature over periods of time.</i>
 <i>Measures temperature using thermometers.</i></p> |
| | <p>6</p> | <p>Demonstrate knowledge of fire safety.
 <i>N/A</i></p> |
| <p>5 Explore and use non-standard units of length, weight and capacity/volume.</p> | <p>1</p> | <p>Model and discuss terms of comparison such as more/less, taller/shorter, heavier/lighter, hotter/colder, and before/after.
 <i>Identifies units of measurement that would be most suitable for measuring a series of different items.</i>
 <i>Measures the effect that the force of gravity has on a mass placed on an inclined plane.</i>
 <i>Students identify tools that could be used in measurement of physical phenomena.</i>
 <i>Uses non-standard measurements, such as paper clips and hands, to measure different objects.</i>
 <i>Measures and compares the heat insulation properties of different materials.</i>
 <i>Compares the force of friction between different materials.</i>
 <i>Identifies different ways to measure things.</i>
 <i>Compares the heat loss in different materials using graphs.</i></p> |

	2	<p>Measure the length, weight and capacity of objects using non-standard units.</p> <p><i>Identifies units of measurement that would be most suitable for measuring a series of different items.</i></p> <p><i>Uses a motion sensor to measure distances.</i></p> <p><i>Uses non-standard measurements, such as paper clips and hands, to measure different objects.</i></p> <p><i>Measures and compares the heat insulation properties of different materials.</i></p> <p><i>Uses an analogue light meter to measure light levels in a room.</i></p> <p><i>Uses a ruler and a motion sensor to measure height.</i></p> <p><i>Identifies symbols and instruments which can be used to represent and measure the weather.</i></p> <p><i>Measures pulling forces using a newton meter.</i></p> <p><i>Identifies different ways to measure things.</i></p> <p><i>Students identify tools that could be used in measurement of physical phenomena.</i></p> <p><i>Measures temperature using thermometers.</i></p> <p><i>Identifies that pushes and pulls are forces that can be measured in newtons.</i></p>	
	3	<p>Investigate volume/capacity (holds more, less, or about the same) using different shape containers and materials.</p> <p><i>Tests if materials are soluble or insoluble.</i></p> <p><i>Observes the effect of adding an insoluble material to a liquid.</i></p>	
6	Collect, organize and interpret data.	<p>1</p>	<p>Collect, model and construct graphs using real objects.</p> <p><i>Compares the heat loss in different materials using graphs.</i></p> <p><i>Uses graphs to plot the change of temperature over periods of time.</i></p>
	2	<p>Interpret and analyze data in graphical form (bar graphs, pictographs, etc.).</p> <p><i>Records rainfall information into a table and constructs a bar chart of the results.</i></p> <p><i>Displays results from a friction experiment in a series of bar charts.</i></p> <p><i>Identifies a bar chart from a diagram.</i></p> <p><i>Compares the heat loss in different materials using graphs.</i></p> <p><i>Experiments with actions that effect heart rate and creates a table to record their results.</i></p> <p><i>Uses graphs to plot the change of temperature over periods of time.</i></p>	
7	Develop an understanding of the Earth as a planet; its structure, and its processes.	<p>1</p>	<p>Describe the Earth according to its shape.</p> <p><i>Uses software to discover facts about the Moon and its relation to the Earth.</i></p> <p><i>Recognises planets in the solar system.</i></p> <p><i>Identifies planets in the solar system.</i></p>

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| 8 | Describe the appearance of the sky by day and by night. | <p>2 Describe the Earth according to its physical make-up (land, water, air).
 <i>Interprets text and diagrams to identify natural sources of water, such as rivers, lakes and oceans.</i>
 <i>Uses wing flaps and rudders to control the direction of aeroplanes in the air.</i>
 <i>Sorts rocks into sedimentary, metamorphic and igneous rock types.</i>
 <i>Interprets text and diagrams to identify physical, chemical and biological forms of weathering.</i>
 <i>States how different rocks are formed.</i>
 <i>Describes the different conditions for the formation of various rocks.</i></p> <p>3 Distinguish the characteristics of the seasons.
 <i>Uses a model of the Earth to identify how the position of the Earth during different seasons effects the hours of daylight.</i>
 <i>Observes the weather during different seasons in a virtual representation of New York.</i>
 <i>Uses a software simulation to find out how seasons are linked to the position of the Earth in relation to the Sun.</i></p> <p>4 Describe weather safety and weather differences by using terms related to weather.
 <i>Uses a virtual weather station to record temperature and rainfall.</i>
 <i>Discovers symbols that are used to represent the weather.</i>
 <i>Interprets text and diagrams to identify physical, chemical and biological forms of weathering.</i>
 <i>Observes the weather during different seasons in a virtual representation of New York.</i></p> <p>5 Compare and contrast characteristics of day and night.
 <i>Uses a shadow trainer to find out why shadows change shape during the day.</i>
 <i>Uses software to find out why there is day and night.</i></p> <p>6 Distinguish between continents as landforms and oceans as large bodies of water.
 <i>Interprets text and diagrams to identify natural sources of water, such as rivers, lakes and oceans.</i></p> |
| | | <p>1 Describe the appearance of the sun in the sky (very bright; visible only by day).
 <i>States the effects that the Sun has on the light levels on the planets of the solar system.</i>
 <i>Observes the effect that distance has on light levels.</i></p> <p>2 Describe the appearance of the stars in the sky (faint; some brighter than others; visible only by night).
 <i>N/A</i></p> |

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- 9 Discover how environmental concerns relate to land, water, and air.
- 3 Describe the appearance of the moon in the sky (visible by day; bright by night; different shapes).
Identifies characteristics of the Moon and its phases.
Uses software to discover facts about the Moon and its relation to the Earth.
Uses software to discover the different phases of the Moon.
- 4 Describe the appearance of clouds in the sky (sometimes covering part or all of the sky; sometimes white or dark gray; sometimes bringing rain; sometimes colorful at sunset; sometimes hiding the sun, moon, and stars).
States the necessary conditions for the formation of clouds and precipitation.
- 1 Identify substances that can be recycled.
Identifies processes by which different materials can be recycled.
Identifies how different materials can be recycled.
- 2 Determine how environmental hazards can affect organisms living in specific areas.
Identifies if things are alive or not alive and how they can be affected by pollution.
Identifies what effect pollution can have on rivers and ponds.

Mississippi 1st Grade Science

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| <p>1 Explore the basic patterns of living systems.</p> | <p>1 Examine the function of plant parts.
 <i>Uses a microscope to view the cells of plants.</i>
 <i>Determines the nutrients that plants need to grow.</i>
 <i>Describes different forms of climate control used to grow plants.</i>
 <i>Discovers how insects aid pollination in the life cycle of a plant.</i>
 <i>Observes the growth of a plant when grown under different watering conditions.</i>
 <i>Observes the growth of a plant when grown under different temperature conditions.</i>
 <i>Recognises the purpose of photosynthesis in plants.</i>
 <i>Discovers that plants require carbon dioxide and produce oxygen as a waste product.</i>
 <i>Identifies the parts of plants that help them to make their own food.</i></p> <p>2 Illustrate the parts of a seed.
 <i>Uses software to discover methods of seeds dispersal from different plants.</i></p> <p>3 Observe and sequence the life cycles of plants, insects, and animals.
 <i>Identifies the stages in the life cycle of a plant.</i>
 <i>Discovers the effects that sunlight and water have on the growth of plants.</i>
 <i>Recognises the purpose of photosynthesis in plants.</i>
 <i>Uses a board-game to discover the stages in the life cycle of a plant.</i>
 <i>Uses software to discover methods of seeds dispersal from different plants.</i>
 <i>Discovers how insects aid pollination in the life cycle of a plant.</i>
 <i>Discovers that plants require carbon dioxide and produce oxygen as a waste product.</i>
 <i>States the energy transfer that occurs between plants to animals and animals to animals in food chains.</i>
 <i>Determines the nutrients that plants need to grow.</i>
 <i>Identifies the parts of plants that help them to make their own food.</i>
 <i>Observes the effects of tap water, salt water and fertiliser on the growth of plants in a nine day period.</i></p> <p>4 Identify major organs of the human body such as the heart, lungs, brain, intestines, and stomach.
 <i>Investigates the stomach of the human body.</i>
 <i>Determines the effect of exercise on heart rate.</i>
 <i>Investigates the heart of the human body.</i>
 <i>Discovers the relationship between heartbeat and pulse.</i>
 <i>Investigates the lungs of the human body.</i></p> |
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2	Investigate the diversity of living things.	<p>1 Classify plants and animals according to external features (scales, feathers, fur, etc.). <i>Identifies questions that can be asked to sort different animals.</i> <i>Creates questions in a classification key to sort a group of farmyard animals.</i> <i>States the appropriate climate to grow different plants.</i> <i>Identifies the parts of plants that help them to make their own food.</i> <i>Uses classification keys to sort animals.</i></p>
		<p>2 Identify plants and animals indigenous to Mississippi. <i>N/A</i></p>
		<p>3 Compare plants and animals in Mississippi with those found in the jungle, desert and arctic regions. <i>N/A</i></p>
		<p>4 Explain the term "extinct" as related to animals. <i>N/A</i></p>
3	Identify and describe daily changes in the sky.	<p>1 Describe the changing position of the sun in the daytime sky. <i>Uses a software simulation to find out how seasons are linked to the position of the Earth in relation to the Sun.</i></p>
		<p>2 Describe the changing position of the stars in the nighttime sky. <i>N/A</i></p>
		<p>3 Describe the changing position of the moon in the sky. <i>Identifies characteristics of the Moon and its phases.</i> <i>Uses software to discover facts about the Moon and its relation to the Earth.</i> <i>Uses software to discover the different phases of the Moon.</i></p>
		<p>4 Identify day and night as parts of a cycle of regular change. <i>Describes what causes day and night and what happens to shadows during the day.</i> <i>Uses software to find out why there is day and night.</i> <i>Uses a shadow trainer to find out why shadows change shape during the day.</i></p>
4	Examine the structure of the solar system.	<p>1 Name the nine planets. <i>States the position of the planets in the solar system.</i> <i>Recognises planets in the solar system.</i></p>
		<p>2 Identify the sun as the major source of energy. <i>States the effects that the Sun has on the light levels on the planets of the solar system.</i> <i>Discovers the effects that sunlight and water have on the growth of plants.</i> <i>Uses a software simulation to find out how seasons are linked to the position of the Earth in relation to the Sun.</i></p>

5	Discover the diversity of the Earth's surface.	1	<p>Identify features of the Earth's surface such as mountains, lakes, oceans, and rivers. <i>Discovers the habitats of different animals.</i> <i>Discovers the characteristics of animals that allow them to survive in their natural habitats.</i> <i>Describes the different conditions for the formation of various rocks.</i> <i>Sorts rocks into sedimentary, metamorphic and igneous rock types.</i></p>
		2	<p>Describe the difference between the oceans and the continents. <i>N/A</i></p>
6	Explore changes that occur in the Earth's atmosphere.	1	<p>Record, graph, and compare weather differences including sunshine, clouds, rain, wind, and snow. <i>Observes the weather during different seasons in a virtual representation of New York.</i> <i>Identifies symbols and instruments which can be used to represent and measure the weather.</i> <i>Uses a virtual weather station to record temperature and rainfall.</i> <i>Discovers symbols that are used to represent the weather.</i></p>
		2	<p>Identify the environmental changes that occur with the seasons. <i>Observes the weather during different seasons in a virtual representation of New York.</i> <i>Uses a software simulation to find out how seasons are linked to the position of the Earth in relation to the Sun.</i> <i>Identifies the seasons at different places on the Earth.</i></p>
7	Investigate how environmental concerns relate to the quality of life.	1	<p>Examine pollution and how recycling helps the environment. <i>Identifies if things are alive or not alive and how they can be affected by pollution.</i> <i>Uses a simple classification key to sort three different types of metal.</i> <i>Identifies how different materials can be recycled.</i> <i>Identifies what effect pollution can have on rivers and ponds.</i></p>
		2	<p>Identify ways to reduce the amount of wastes thrown away. <i>Identifies how different materials can be recycled.</i> <i>Uses a simple classification key to sort three different types of metal.</i></p>
8	Examine the different types of observable and measurable changes that matter can undergo.	1	<p>Observe and discuss the transformation of solids, liquids, and gases. <i>Separates solids and liquids using filter paper.</i> <i>Observes the effect of adding an insoluble material to a liquid.</i> <i>Describes what happens to soluble and insoluble materials when they are added to a liquid.</i> <i>Identifies that sound travels as a vibration and so can travel through solids.</i></p>
		2	<p>Identify solids, liquids, and gases as states of matter. <i>N/A</i></p>

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| <p>9 Explore the concepts of length, weight, temperature, and capacity/volume using nonstandard and standard (English and metric) units of measurement.</p> | <p>3 Compare/contrast objects according to size, shape, color, texture, and use.
 <i>Determines if objects are transparent or opaque using a light ray box.</i>
 <i>Identifies the attraction and repulsion between magnets and other objects.</i>
 <i>Identifies what natural materials have been used to make a series of sample objects.</i>
 <i>Identifies if different objects should be flexible, inflexible or elastic in order to do their jobs.</i>
 <i>Tests a series of different objects to find if they are flexible, inflexible or elastic.</i>
 <i>Identifies if objects are electrical conductors or electrical insulators.</i></p> <p>4 Manipulate magnets to demonstrate the interaction of magnets and other objects.
 <i>Determines which materials stick to a magnet.</i>
 <i>Increases the strength of an electromagnet.</i>
 <i>Uses a bar magnet and an electromagnet to find the differences and similarities between them.</i>
 <i>Identifies the attraction and repulsion between magnets and other objects.</i>
 <i>Discovers that materials containing iron stick to magnets.</i>
 <i>Identifies the behaviour of temporary and permanent magnets.</i>
 <i>Observes the magnetic attraction and repulsion forces between the poles of magnets.</i></p> <p>1 Use nonstandard (paper clips, unifix cubes) and standard (inches, centimeters) units to explore length.
 <i>Observes the effect of changing the length of a pendulum on the time of its swing.</i>
 <i>Observes the relationship between length of rubber band and pitch of sound made by a stringed instrument.</i>
 <i>Constructs a pendulum to observe the relationship between pendulum weight and length with its swing time.</i>
 <i>Relates the swing time of a pendulum with its length.</i>
 <i>Observes the relationship between length of tube and pitch of sound made by a wind instrument.</i></p> <p>2 Compare weight of objects (heavy/light).
 <i>Uses a lever to balance weights.</i>
 <i>Indicates how levers can be used to balance weights.</i>
 <i>Discovers that the stretch of spring is proportional to the weight placed on it.</i>
 <i>Observes the effect of the changing the weight of a pendulum on the time of its swing.</i>
 <i>Constructs a pendulum to observe the relationship between pendulum weight and length with its swing time.</i>
 <i>States the relationship between weight, size and density of a material.</i>
 <i>Relates the weight, shape and size of a material to its density.</i></p> |
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- 3 Explore and estimate capacity/volume of various containers in nonstandard units.**
Observes the relationship between volume of air and pitch of sound made by a percussion instrument.
- 4 Explore the concept of hot/cold using a non-mercury thermometer.**
*Uses a virtual weather station to record temperature and rainfall.
Uses graphs to plot the change of temperature over periods of time.
States how temperature can be measured and identifies the temperature of the human body.
Measures temperature using thermometers.*

Mississippi 2nd Grade Science

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| <p>1 Explore the functions and systems of living things.</p> | <p>1 Explain how plants are used as a food source by living organisms and relate this to the food chain.
<i>States the energy transfer that occurs between plants to animals and animals to animals in food chains.</i>
<i>Identifies the producers primary consumers and secondary consumers in food chains.</i>
<i>Classifies animals as carnivores, herbivores or omnivores.</i>
<i>Uses a matching game to find what foods humans can obtain from plants.</i></p> <p>2 Dissect and explain the function of the parts of a seed.
<i>Uses a board-game to discover the stages in the life cycle of a plant.</i>
<i>Uses software to discover methods of seeds dispersal from different plants.</i></p> <p>3 Describe the function of the major internal organs to include the heart, brain, lungs, liver, kidneys, and intestines.
<i>Investigates the heart of the human body.</i>
<i>Investigates the stomach of the human body.</i>
<i>Investigates the lungs of the human body.</i></p> <p>4 Investigate the digestive system.
<i>Investigates the stomach of the human body.</i></p> |
| <p>2 Research the diversity and interaction of living things.</p> | <p>1 Define and recognize "endangered" species.
<i>N/A</i></p> <p>2 Compare and contrast physical and behavioral characteristics of different species.
<i>Identifies the producers primary consumers and secondary consumers in food chains.</i>
<i>Discovers the characteristics of animals that allow them to survive in their natural habitats.</i>
<i>Discovers the habitats of different animals.</i>
<i>Creates questions in a classification key to sort a group of farmyard animals.</i>
<i>States the energy transfer that occurs between plants to animals and animals to animals in food chains.</i>
<i>Classifies animals as carnivores, herbivores or omnivores.</i>
<i>Uses classification keys to sort animals.</i></p> |

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| 3 | Explore the structure of the Solar System. | <p>3 Analyze the suitability of different environments in meeting the needs of plants and animals.
 <i>Discovers how insects aid pollination in the life cycle of a plant.</i>
 <i>Uses classification keys to sort animals.</i>
 <i>Observes the growth of a plant when grown under different watering conditions.</i>
 <i>Creates questions in a classification key to sort a group of farmyard animals.</i>
 <i>Uses software to discover methods of seeds dispersal from different plants.</i>
 <i>Using software, discovers the different stages in the life cycle of butterflies and frogs.</i>
 <i>Uses a checklist of the seven life processes to identify if things are living or not living.</i>
 <i>Identifies what effect pollution can have on rivers and ponds.</i>
 <i>Uses a board-game to discover the stages in the life cycle of a plant.</i>
 <i>Observes the effects of tap water, salt water and fertiliser on the growth of plants in a nine day period.</i>
 <i>Observes the growth of a plant when grown under different temperature conditions.</i>
 <i>Describes different forms of climate control used to grow plants.</i>
 <i>Recognises the purpose of photosynthesis in plants.</i>
 <i>Discovers the effects that sunlight and water have on the growth of plants.</i>
 <i>Determines the nutrients that plants need to grow.</i>
 <i>Discovers that plants require carbon dioxide and produce oxygen as a waste product.</i></p> |
| 3 | Identify and describe weekly and monthly changes in the sky. | <p>4 Classify animals in vertebrate categories (fish, bird, mammal, amphibian, and reptile).
 <i>Creates questions in a classification key to sort a group of farmyard animals.</i>
 <i>Classifies animals as carnivores, herbivores or omnivores.</i>
 <i>Identifies the producers primary consumers and secondary consumers in food chains.</i>
 <i>Uses classification keys to sort animals.</i></p> <p>1 List and describe the nine planets in order.
 <i>Recognises planets in the solar system.</i>
 <i>States the position of the planets in the solar system.</i></p> <p>2 Identify the sun as a star.
 <i>States the effects that the Sun has on the light levels on the planets of the solar system.</i>
 <i>Observes the effect that distance has on light levels.</i></p> <p>1 Describe the apparent shapes of the moon from week to week.
 <i>Uses software to discover facts about the Moon and its relation to the Earth.</i>
 <i>Uses software to discover the different phases of the Moon.</i></p> |

		2	Identify the moon's phases as parts of a cycle of regular change. <i>Uses software to discover facts about the Moon and its relation to the Earth.</i> <i>Uses software to discover the different phases of the Moon.</i>
5	Recognize the diversity of the Earth's composition.	1	Create a model depicting the major layers of the Earth. <i>Sorts rocks into sedimentary, metamorphic and igneous rock types.</i> <i>Describes the different conditions for the formation of various rocks.</i>
		2	Discover and explore the characteristics of various earth materials such as clay, silt, sand, pebbles, and gravel. <i>Observes the effect of adding an insoluble material to a liquid.</i> <i>Separates solids and liquids using filter paper.</i> <i>Sorts rocks into sedimentary, metamorphic and igneous rock types.</i> <i>Describes the different conditions for the formation of various rocks.</i> <i>Tests if materials are soluble or insoluble.</i> <i>Separates mixtures using a sieve.</i>
6	Analyze changes that occur in the Earth's atmosphere.	1	Introduce the water cycle. <i>Replicates and observes the stages of the water cycle.</i> <i>States the different forms of water in the water cycle.</i> <i>Uses a virtual weather station to record temperature and rainfall.</i> <i>States the necessary conditions for the formation of clouds and precipitation.</i>
		2	Describe the different types of clouds and the weather associated with each. <i>States the necessary conditions for the formation of clouds and precipitation.</i> <i>Replicates and observes the stages of the water cycle.</i>
7	Investigate how environmental concerns relate to the quality of life.	1	Design and construct a compost pile. <i>N/A</i>
		2	Observe the benefits of composting to the community. <i>Uses a simple classification key to sort three different types of metal.</i> <i>Identifies how different materials can be recycled.</i>
8	Predict and explore the effects of forces and energy on matter.	1	Introduce and discuss the concept that matter takes up space. <i>Describes how density of an object can effect if it floats or sinks in water.</i> <i>Relates the weight, shape and size of a material to its density.</i>

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| 9 | Investigate the properties of color, heat, and light. | <p>2 Classify solids, liquids and gases as states of matter according to their characteristics.
 <i>Tests if materials are soluble or insoluble.</i>
 <i>Sorts rocks into sedimentary, metamorphic and igneous rock types.</i>
 <i>Describes the different conditions for the formation of various rocks.</i>
 <i>Separates mixtures using a sieve.</i>
 <i>Observes the effect of adding an insoluble material to a liquid.</i>
 <i>Separates solids and liquids using filter paper.</i></p> <p>3 Determine the properties of the states of matter by experimenting.
 <i>Separates mixtures using a sieve.</i>
 <i>Compares the force of friction between different materials.</i>
 <i>Observes the effect of adding an insoluble material to a liquid.</i>
 <i>Tests if materials are soluble or insoluble.</i>
 <i>Sorts rocks into sedimentary, metamorphic and igneous rock types.</i>
 <i>Determines if objects are transparent or opaque using a light ray box.</i>
 <i>Separates solids and liquids using filter paper.</i>
 <i>Uses a bar magnet and an electromagnet to find the differences and similarities between them.</i>
 <i>Observes the magnetic attraction and repulsion forces between the poles of magnets.</i>
 <i>Determines which materials stick to a magnet.</i>
 <i>Determines if materials are electrical conductors or electrical insulators using a simple lamp circuit.</i>
 <i>Identifies how different materials can be recycled.</i>
 <i>Tests a series of different objects to find if they are flexible, inflexible or elastic.</i>
 <i>Discovers that materials containing iron stick to magnets.</i>
 <i>Discovers the elastic properties of metal springs.</i></p> <p>4 Manipulate magnets to show that they are only attracted to certain metals.
 <i>Discovers that materials containing iron stick to magnets.</i>
 <i>Observes the magnetic attraction and repulsion forces between the poles of magnets.</i>
 <i>Determines which materials stick to a magnet.</i></p> <p>1 Demonstrate light and heat as forms of energy.
 <i>Identifies objects around the classroom that are light sources.</i>
 <i>Determines if objects are transparent or opaque using a light ray box.</i>
 <i>Discovers where kinetic, potential, chemical, light, heat and sound energy can occur.</i>
 <i>Identifies how shadows are formed and how they change depending on their distance from a light source.</i></p> <p>2 Identify the colors of the spectrum.
 <i>Describes the behaviour of light.</i>
 <i>Observes the mixing of coloured light to make other colours, including the making of white light.</i>
 <i>Recognises the lenses that bend light rays.</i></p> |
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| <p>10 Determine length, mass, weight, and capacity/volume using the appropriate standard (English and metric) units of measurement.</p> | <p>3 Demonstrate how sound travels through different media (wood, plastics, water, air).
 <i>Identifies that sound travels as a vibration and so can travel through solids.</i>
 <i>Predicts how the pitch of sound produced by a vibrating object changes with object size.</i>
 <i>Discovers where kinetic, potential, chemical, light, heat and sound energy can occur.</i>
 <i>Observes the relationship between length of rubber band and pitch of sound made by a stringed instrument.</i>
 <i>Observes the relationship between length of tube and pitch of sound made by a wind instrument.</i>
 <i>Observes the change from kinetic energy into heat and sound energy when rubbing hands together.</i>
 <i>Identifies that sound travels as a vibration by speaking into a balloon.</i>
 <i>Predicts how the pitch of sound produced by a vibrating object changes with object size.</i>
 <i>Observes the relationship between volume of air and pitch of sound made by a percussion instrument.</i>
 <i>Identifies that sound travels through string as a vibration by using a string telephone.</i></p> <p>1 Use appropriate tools and terms to explore measurement.
 <i>Measures pulling forces using a newton meter.</i>
 <i>Uses an analogue light meter to measure light levels in a room.</i>
 <i>Uses a digital light meter to measure light levels in a room.</i>
 <i>Measures the effect that the force of gravity has on a mass placed on an inclined plane.</i>
 <i>Uses a motion sensor to measure distances.</i>
 <i>Identifies symbols and instruments which can be used to represent and measure the weather.</i>
 <i>Identifies that pushes and pulls are forces that can be measured in newtons.</i>
 <i>Measures and compares the heat insulation properties of different materials.</i>
 <i>Measures temperature using thermometers.</i>
 <i>States how temperature can be measured and identifies the temperature of the human body.</i>
 <i>Identifies different ways to measure things.</i>
 <i>Uses a ruler and a motion sensor to measure height.</i>
 <i>Identifies how the level of light can be measured.</i></p> |
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- 2 Estimate and measure length, mass, weight, and capacity/volume using standard units of measurement (inch, foot, yard, centimeter, meter, ounce, pound, gram, kilogram, cup, pint, quart, and liter).**
Discovers that the stretch of spring is proportional to the weight placed on it.
Uses a lever to balance weights.
Observes the relationship between length of rubber band and pitch of sound made by a stringed instrument.
Observes the relationship between length of tube and pitch of sound made by a wind instrument.
Observes the effect of changing the length of a pendulum on the time of its swing.
Constructs a pendulum to observe the relationship between pendulum weight and length with its swing time.
Indicates how levers can be used to balance weights.
Relates the weight, shape and size of a material to its density.
Constructs a pendulum to observe the relationship between pendulum weight and length with its swing time.
States the relationship between weight, size and density of a material.
Observes the relationship between volume of air and pitch of sound made by a percussion instrument.
Observes the effect of the changing the weight of a pendulum on the time of its swing.
Relates the swing time of a pendulum with its length.
- 3 Categorize measurement terms according to length, mass, weight, and capacity/volume.**
Uses a motion sensor to measure distances.
States how temperature can be measured and identifies the temperature of the human body.
Uses a ruler and a motion sensor to measure height.
Measures pulling forces using a newton meter.
Measures the effect that the force of gravity has on a mass placed on an inclined plane.
Uses an analogue light meter to measure light levels in a room.
Uses a digital light meter to measure light levels in a room.
Identifies different ways to measure things.
Measures and compares the heat insulation properties of different materials.
Identifies symbols and instruments which can be used to represent and measure the weather.
Measures temperature using thermometers.
- 4 Use convincing arguments to justify the selection of a specific unit of measure for a given item.**
Identifies how the level of light can be measured.
States how temperature can be measured and identifies the temperature of the human body.
Identifies symbols and instruments which can be used to represent and measure the weather.
Identifies that pushes and pulls are forces that can be measured in newtons.
Identifies different ways to measure things.

5 Collect and compare seasonal temperatures using a Fahrenheit thermometer.

States how temperature can be measured and identifies the temperature of the human body.

Measures temperature using thermometers.

Uses a virtual weather station to record temperature and rainfall.

Uses graphs to plot the change of temperature over periods of time.

Mississippi 3rd Grade Science

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| <p>1 Investigate the interactions of objects and organisms.</p> | <p>1 Identify major causes of endangerment and extinction.
<i>Discovers the characteristics of animals that allow them to survive in their natural habitats.</i>
<i>Identifies the producers primary consumers and secondary consumers in food chains.</i>
<i>States the energy transfer that occurs between plants to animals and animals to animals in food chains.</i>
<i>Students identify how living organisms have adapted to become suited to the environment in which they grow.</i>
<i>Discovers the effects that sunlight and water have on the growth of plants.</i>
<i>Students identify how populations can be affected by changes in a food chain.</i></p> <p>2 Distinguish between harmful and helpful human actions on the environment.
<i>Uses a checklist of the seven life processes to identify if things are living or not living.</i>
<i>Uses a simple classification key to sort three different types of metal.</i>
<i>Identifies what effect pollution can have on rivers and ponds.</i>
<i>Interprets text to identify things that harm, preserve or protect the environment.</i>
<i>Identifies how different materials can be recycled.</i></p> <p>3 Describe methods to prevent pollution of the environment.
<i>Identifies how different materials can be recycled.</i>
<i>Identifies if things are alive or not alive and how they can be affected by pollution.</i>
<i>Identifies processes by which different materials can be recycled.</i>
<i>Identifies what effect pollution can have on rivers and ponds.</i></p> |
| <p>2 Explore the components of living systems.</p> | <p>1 Classify and identify different types of seeds.
<i>Uses software to discover methods of seeds dispersal from different plants.</i></p> <p>2 Compare and contrast dicot and monocot seeds.
<i>N/A</i></p> <p>3 Demonstrate photosynthesis.
<i>Discovers that plants require carbon dioxide and produce oxygen as a waste product.</i>
<i>Discovers the effects that sunlight and water have on the growth of plants.</i>
<i>Recognises the purpose of photosynthesis in plants.</i></p> |

	<p>4 Show that plants grow from other parts and explain the germination of seeds. <i>Identifies the stages in the life cycle of a plant.</i> <i>Compares the life cycles of plants and identifies similarities and differences between them.</i> <i>Uses a board-game to discover the stages in the life cycle of a plant.</i> <i>Discovers how insects aid pollination in the life cycle of a plant.</i></p> <p>5 Label the parts and functions of a flower. <i>Identifies the parts of plants that help them to make their own food.</i></p> <p>6 Explain methods of pollination. <i>Observes flower pollen magnified by a microscope.</i> <i>Discovers how insects aid pollination in the life cycle of a plant.</i> <i>Describes the relationship between a honeybee and a flower for pollination to occur.</i></p> <p>7 Understand the functions of the skeletal system and label major bones of the human body. <i>Investigates the bones of the human body.</i> <i>Investigates the joints of the human body.</i> <i>Identifies bones and joints of the human body.</i></p>
3 Identify and describe the appearance of stars in the night sky.	<p>1 Locate and identify constellations as imaginary patterns of stars that remain fixed in shape from night to night. <i>N/A</i></p> <p>2 Describe the actual nature of stars as distant suns that appear small and faint only because of their great distances. <i>N/A</i></p>
4 Discover how internal and external forces affect the Earth surface.	<p>1 Describe the three major layers of the Earth. <i>Sorts rocks into sedimentary, metamorphic and igneous rock types.</i> <i>Describes the different conditions for the formation of various rocks.</i></p> <p>2 Examine and identify rocks of different types (metamorphic, sedimentary, and igneous). <i>Sorts rocks into sedimentary, metamorphic and igneous rock types.</i> <i>Describes the different conditions for the formation of various rocks.</i></p> <p>3 Discuss places fossils can be found. <i>Identifies how fossil fuels are made and where they come from.</i> <i>Uses software to find out how different types of fossils are formed.</i> <i>Identifies what fossils fuels can be used for.</i> <i>Uses a virtual excavation to find different fossils.</i></p> <p>4 Relate how internal forces affect the Earth surface including earthquakes and volcanoes. <i>Interprets text and diagrams to identify physical, chemical and biological forms of weathering.</i></p>

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| 5 | Examine changes in matter. | 1 | <p>Identify and demonstrate chemical changes.
 <i>Interprets text and diagrams to identify changes that are physical or chemical and useful things that can result from those changes.</i>
 <i>Uses components, like lamps and buzzers, to discover that electrical energy can be changed into different energies.</i>
 <i>Uses graphs to plot the change of temperature over periods of time.</i>
 <i>Describes the changes that occur in different materials when they are heated.</i>
 <i>Describes the changes that occur in different materials when they are cooled.</i>
 <i>States if changes in different materials, caused by heating and cooling, can be reversed.</i></p> |
| | | 2 | <p>Identify and demonstrate physical changes.
 <i>Observes the change from kinetic energy into heat and sound energy when rubbing hands together.</i>
 <i>Uses components, like lamps and buzzers, to discover that electrical energy can be changed into different energies.</i>
 <i>Interprets text and diagrams to identify changes that are physical or chemical and useful things that can result from those changes.</i>
 <i>Predicts how the pitch of sound produced by a vibrating object changes with object size.</i>
 <i>Changes the size and shape of a wing of a model aeroplane to see the effect in the lift given.</i>
 <i>Predicts how the pitch of sound produced by a vibrating object changes with object size.</i>
 <i>Modifies a crawler to change the direction it moves in.</i></p> |
| 6 | Analyze changes in matter. | 1 | <p>Label an illustration of the water cycle.
 <i>Interprets text and diagrams to identify natural sources of water, such as rivers, lakes and oceans.</i>
 <i>Replicates and observes the stages of the water cycle.</i>
 <i>States the different forms of water in the water cycle.</i>
 <i>Describes the states and processes of the water cycle.</i></p> |
| | | 2 | <p>Collect and graph weather data.
 <i>Observes the weather during different seasons in a virtual representation of New York.</i>
 <i>Uses a virtual weather station to record temperature and rainfall.</i>
 <i>Interprets text and diagrams to identify physical, chemical and biological forms of weathering.</i>
 <i>Identifies symbols and instruments which can be used to represent and measure the weather.</i>
 <i>Discovers symbols that are used to represent the weather.</i></p> |

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| 7 | Develop the process of measurement and related concepts. | <p>1 Identify and compare differences among length, weight/mass, and capacity/volume using English and metric measures.
 <i>Uses a lever to balance weights.
 Identifies that the volume of a sound changes as the distance from the source of the sound is increased.
 Discovers that the stretch of spring is proportional to the weight placed on it.
 Observes the relationship between volume of air and pitch of sound made by a percussion instrument.
 Observes the effect of the changing the weight of a pendulum on the time of its swing.
 Indicates how levers can be used to balance weights.
 Constructs a pendulum to observe the relationship between pendulum weight and length with its swing time.
 Observes the effect of changing the length of a pendulum on the time of its swing.
 Observes the relationship between length of rubber band and pitch of sound made by a stringed instrument.
 Relates the weight, shape and size of a material to its density.
 States the relationship between weight, size and density of a material.
 Identifies the weight of objects in units of newtons and places them in order of their weight.</i></p> <p>2 Choose appropriate units of measurement for length, weight/mass, and capacity/volume.
 <i>Identifies symbols and instruments which can be used to represent and measure the weather.
 Uses a ruler and a motion sensor to measure height.
 Identifies the weight of objects in units of newtons and places them in order of their weight.
 Identifies units of measurement that would be most suitable for measuring a series of different items.
 Uses non-standard measurements, such as paper clips and hands, to measure different objects.
 Students identify tools that could be used in measurement of physical phenomena.
 Identifies that pushes and pulls are forces that can be measured in newtons.</i></p> <p>3 Convert between pints, quarts, and gallons.
 <i>N/A</i></p> <p>4 Convert miles to feet and yards.
 <i>N/A</i></p> <p>5 Compare metric measurements to English measurements.
 <i>Identifies units of measurement that would be most suitable for measuring a series of different items.
 Identifies the weight of objects in units of newtons and places them in order of their weight.</i></p> |
|---|---|--|

6 Using various types of instruments measure: length in millimeters, meters, kilometers - mass in grams and kilograms - capacity/volume in milliliters and liters - time to nearest minute - temperature in Celsius and Fahrenheit

Measures the effect that the force of gravity has on a mass placed on an inclined plane.

Uses a motion sensor to measure distances.

Measures temperature using thermometers.

Measures and compares the heat insulation properties of different materials.

Identifies different ways to measure things.

Uses a digital light meter to measure light levels in a room.

Identifies symbols and instruments which can be used to represent and measure the weather.

Measures pulling forces using a newton meter.

Students identify tools that could be used in measurement of physical phenomena.

Uses an analogue light meter to measure light levels in a room.

Uses non-standard measurements, such as paper clips and hands, to measure different objects.

Identifies units of measurement that would be most suitable for measuring a series of different items.

Uses a ruler and a motion sensor to measure height.

7 Use manipulatives and gridded regions to determine area of shapes.

N/A

Mississippi 4th Grade Science

- | | |
|---|---|
| <p>1 Investigate the ability of living things to adapt to their environment.</p> | <p>1 Compare food chains and food webs.
<i>States the energy transfer that occurs between plants to animals and animals to animals in food chains.</i>
<i>Identifies the producers primary consumers and secondary consumers in food chains.</i>
<i>Determines the placement of animals and plants in food chains.</i>
<i>Students identify how populations can be affected by changes in a food chain.</i></p> <p>2 Compare and contrast adaptations necessary for animals and plants to survive in different habitats.
<i>Students identify how living organisms have adapted to become suited to the environment in which they grow.</i>
<i>Discovers the habitats of different animals.</i>
<i>Discovers the characteristics of animals that allow them to survive in their natural habitats.</i>
<i>Students identify how populations can be affected by changes in a food chain.</i>
<i>Describes characteristics of animals habitats.</i>
<i>Interprets text and diagrams to identify the habitats of different plants.</i></p> |
| <p>2 Explore the interactions of components in living systems.</p> | <p>1 Identify parts and basic functions of various body systems (circulatory, respiratory, digestive, skeletal and nervous systems).
<i>Identifies characteristics of the lungs, stomach and heart of the human body.</i>
<i>Investigates the bones of the human body.</i>
<i>Investigates the joints of the human body.</i>
<i>Investigates the lungs of the human body.</i>
<i>Identifies bones and joints of the human body.</i>
<i>Investigates the stomach of the human body.</i>
<i>Investigates the heart of the human body.</i>
<i>Uses software to find what parts of the human body give each of the five senses.</i>
<i>States how temperature can be measured and states the temperature of the human body.</i>
<i>Describes the pulse as a method of detecting blood flow around the body.</i></p> <p>2 Analyze the circulatory system.
<i>Investigates the heart of the human body.</i>
<i>Identifies characteristics of the lungs, stomach and heart of the human body.</i>
<i>Discovers the relationship between heartbeat and pulse.</i>
<i>Determines the effect of exercise on heart rate.</i>
<i>Describes the pulse as a method of detecting blood flow around the body.</i>
<i>Experiments with actions that effect heart rate and creates a table to record their results.</i></p> |

	3	Group animals as invertebrates or vertebrates. <i>N/A</i>
	4	Explore the four requirements necessary for photosynthesis. <i>Discovers that plants require carbon dioxide and produce oxygen as a waste product.</i> <i>Recognises the purpose of photosynthesis in plants.</i> <i>Discovers the effects that sunlight and water have on the growth of plants.</i>
	5	Compare and contrast flowering and non-flowering plants. <i>N/A</i>
3	Communicate an understanding of the interaction of bodies in the solar system.	1 Explain why the apparent size of an object depends on its distance from the observer. <i>N/A</i>
	2	Describe the interaction between the Earth, Sun, Earth moon, and planets of the solar system. <i>Observes the effect that distance has on light levels.</i> <i>States the position of the planets in the solar system.</i> <i>Uses software to discover the different phases of the Moon.</i> <i>States the effects that the Sun has on the light levels on the planets of the solar system.</i> <i>Uses software to discover facts about the Moon and its relation to the Earth.</i> <i>Recognises planets in the solar system.</i>
	3	Describe the apparent motion of constellations in the night sky (east to west throughout the night, east to west throughout the year). <i>N/A</i>
4	Identify and describe the visual and telescopic appearance of planets and moons.	1 Locate and identify planets as bright, shining bodies that move in front of the background of constellations. <i>N/A</i>
	2	Explain the nature of telescopes as devices that collect light and enlarge the apparent size of distant objects to reveal otherwise unseen features. <i>N/A</i>
	3	Describe the physical features of the moon (craters, plains, mountains) and the planets. <i>Recognises planets in the solar system.</i> <i>Uses software to discover facts about the Moon and its relation to the Earth.</i>

5	Discover the effects of external forces on the Earth surface.	1	<p>Describe how external forces including heat, wind and water affect the Earth's surface. <i>Interprets text and diagrams to identify natural sources of water, such as rivers, lakes and oceans.</i> <i>Interprets text and diagrams to identify physical, chemical and biological forms of weathering.</i></p>
		2	<p>Using maps, students identify watershed and run-off patterns of local areas. <i>N/A</i></p>
		3	<p>Group landform examples by the forces that may have created them. <i>Interprets text and diagrams to identify physical, chemical and biological forms of weathering.</i></p>
6	Explore changes that occur in the Earth atmosphere.	1	<p>Analyze and predict the weather using the thermometer, anemometer, rain gauge, barometer and hygrometer. <i>Observes the weather during different seasons in a virtual representation of New York.</i> <i>Uses a virtual weather station to record temperature and rainfall.</i> <i>Discovers symbols that are used to represent the weather.</i> <i>Identifies symbols and instruments which can be used to represent and measure the weather.</i></p>
		2	<p>Recognize and collect data of extreme weather conditions. <i>Uses a virtual weather station to record temperature and rainfall.</i> <i>Identifies symbols and instruments which can be used to represent and measure the weather.</i></p>
7	Discover how environmental concerns relate to the hydrosphere, lithosphere, and atmosphere.	1	<p>Describe ways to protect the air we breathe. <i>N/A</i></p>
		2	<p>Recognize the need for conservation of water resources. <i>N/A</i></p>
		3	<p>Discuss the ways man can protect and manage organisms in the environment. <i>N/A</i></p>
8	Investigate the changes in the states of matter.	1	<p>Observe that matter occupies space and has mass and volume. <i>N/A</i></p>
		2	<p>Demonstrate transformations of the states of matter. <i>Describes the changes that occur in different materials when they are heated.</i> <i>Identifies the changes that happen to materials when they are heated and cooled.</i> <i>States if changes in different materials, caused by heating and cooling, can be reversed.</i></p>

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| 9 | Examine the different forms of energy. | <p>3 Explore and classify physical and chemical changes.
 <i>Observes the change from kinetic energy into heat and sound energy when rubbing hands together.
 Uses components, like lamps and buzzers, to discover that electrical energy can be changed into different energies.
 Identifies that the volume of a sound changes as the distance from the source of the sound is increased.
 Describes the changes that occur in different materials when they are heated.
 Interprets text and diagrams to identify changes that are physical or chemical and useful things that can result from those changes.
 Describes the changes that occur in different materials when they are cooled.</i></p> <p>1 Differentiate energy as potential or kinetic energy.
 <i>Modifies a crawler so that it can store enough energy to reach the top of a slope.
 Observes the change from kinetic energy into heat and sound energy when rubbing hands together.
 Identifies different types of energy.
 Discovers that a dynamo can be used to convert kinetic energy into electrical energy.
 Uses a model car on a track to find when the car has enough energy to travel over a hill.
 Discovers where kinetic, potential, chemical, light, heat and sound energy can occur.</i></p> <p>2 Identify and explore forms of energy such as heat, sound, light, or electricity.
 <i>Identifies different types of energy.
 Recognises different forms of energy.
 Observes the change from kinetic energy into heat and sound energy when rubbing hands together.
 Discovers that a dynamo can be used to convert kinetic energy into electrical energy.
 Discovers where kinetic, potential, chemical, light, heat and sound energy can occur.</i></p> <p>3 Demonstrate the use of the sun as an energy source.
 <i>Discovers the effects that sunlight and water have on the growth of plants.
 States the effects that the Sun has on the light levels on the planets of the solar system.</i></p> |
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<p>10 Develop the process of measurement and the concepts related to units of measurement.</p>	<p>1 Measure a given object using specified scientific measurement (English and/or metric). <i>Uses an analogue light meter to measure light levels in a room. Measures pulling forces using a newton meter. Identifies symbols and instruments which can be used to represent and measure the weather. Uses a ruler and a motion sensor to measure height. Identifies units of measurement that would be most suitable for measuring a series of different items. Identifies different ways to measure things. Students identify tools that could be used in measurement of physical phenomena. Uses a motion sensor to measure distances.</i></p> <p>2 Select, use, compare and convert within the appropriate standard (English and metric) system of measurement. <i>N/A</i></p> <p>3 Identify the attributes of length, weight, capacity/volume, mass, time and temperature using English and metric units of measurement. <i>Identifies units of measurement that would be most suitable for measuring a series of different items. Identifies different ways to measure things. Uses non-standard measurements, such as paper clips and hands, to measure different objects. Measures temperature using thermometers. Students identify tools that could be used in measurement of physical phenomena. Measures pulling forces using a newton meter. Identifies symbols and instruments which can be used to represent and measure the weather. Uses a motion sensor to measure distances. Uses a ruler and a motion sensor to measure height. Uses a digital light meter to measure light levels in a room.</i></p> <p>4 Calculate and solve problems with elapsed time. <i>Relates the swing time of a pendulum with its length. Constructs a pendulum to observe the relationship between pendulum weight and length with its swing time. Observes the effect of changing the length of a pendulum on the time of its swing. Observes the effect of the changing the weight of a pendulum on the time of its swing.</i></p>
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Section 5.

LWS Objective Lists

ST20-1 Living with Physical Science Level-1

1 Pushes and Pulls

- 1 States if illustrated movements are pushes or pulls.
- 2 Measures pulling forces using a Newton meter.

2 Magnets

- 1 Determines which materials stick to a magnet.
- 2 Discovers that materials containing iron stick to magnets.
- 3 Observes the magnetic attraction and repulsion forces between the poles of magnets.

3 Sound Travel

- 1 Identifies that sound travels as a vibration by speaking into a balloon.
- 2 Identifies that sound travels through string as a vibration by using a string telephone.

4 Light Sources

- 1 Identifies objects around the classroom that are light sources.
- 2 Determines if objects are transparent or opaque using a light ray box.

5 Effects of Force

- 1 Squashes a ball and stretches a spring to observe the effects of pushing and pulling forces.
- 2 Observes how a varying incline effects the speed of a model car.
- 3 Measures the effect that the force of gravity has on a mass placed on an inclined plane.

6 Electrical Conductors

- 1 Determines if materials are electrical conductors or electrical insulators using a simple lamp circuit.
- 2 Discovers that electricity cannot flow unless a circuit is complete.

7 Types of Energy

- 1 Discovers where kinetic, potential, chemical, light, heat and sound energy can occur.
- 2 Uses a model car on a track to find when the car has enough energy to travel over a hill.

8 Reflections and Shadows

- 1 Observes that images are reversed when reflected in a mirror.
- 2 Identifies how shadows are formed and how they change depending on their distance from a light source.

11 Pre Test Quiz 1

- 1 Identifies that pushes and pulls are forces that can be measured in Newton's.
- 2 Identifies the attraction and repulsion between magnets and other objects.
- 3 Identifies that sound travels as a vibration and so can travel through solids.
- 4 Identifies if objects are light sources and if they are transparent or opaque.

12 Post Test Quiz 1

- 1 Identifies that pushes and pulls are forces that can be measured in Newton's.
- 2 Identifies the attraction and repulsion between magnets and other objects.
- 3 Identifies that sound travels as a vibration and so can travel through solids.
- 4 Identifies if objects are light sources and if they are transparent or opaque.

13 Pre Test Quiz 2

- 1 Describes the effect of pushing and pulling forces.
- 2 Identifies if objects are electrical conductors or electrical insulators.
- 3 Identifies different types of energy.
- 4 Describes the appearance of reflections and shadows.

14 Post Test Quiz 2

- 1 Describes the effect of pushing and pulling forces.
- 2 Identifies if objects are electrical conductors or electrical insulators.
- 3 Identifies different types of energy.
- 4 Describes the appearance of reflections and shadows.

ST20-2 Living with Physical Science Level-2

1 Friction

- 1 Observes the force of friction.
- 2 Compares the force of friction between different materials.

2 Series Circuits

- 1 Uses components, like lamps and buzzers, to discover that electrical energy can be changed into different energies.
- 2 Interprets electrical diagrams to predict the behavior of electrical components connected in series.

3 Musical Sounds

- 1 Observes the relationship between length of rubber band and pitch of sound made by a stringed instrument.
- 2 Observes the relationship between length of tube and pitch of sound made by a wind instrument.
- 3 Observes the relationship between volume of air and pitch of sound made by a percussion instrument.

4 Light Rays

- 1 Uses lenses to bend light rays.
- 2 Observes the mixing of colored light to make other colors, including the making of white light.

5 Springs

- 1 Discovers the elastic properties of metal springs.
- 2 Discovers that the stretch of spring is proportional to the weight placed on it.

6 Parallel Circuits

- 1 Discovers how electricity flows in series and parallel circuits.
- 2 Interprets electrical diagrams to predict the behavior of electrical components connected in parallel.
- 3 States the use of parallel and series electrical circuits in the home.

7 Energy Conversion

- 1 Uses flow diagrams to track the conversion of energy.
- 2 Observes the change from kinetic energy into heat and sound energy when rubbing hands together.
- 3 Discovers that a dynamo can be used to convert kinetic energy into electrical energy.

8 Cooling

- 1 Compares the heat loss in different materials using graphs.
- 2 Measures and compares the heat insulation properties of different materials.
- 3 Identifies the use of insulating domestic water pipes against cold.

11 Pre Test Quiz 3

- 1 Describes the friction force that occurs between two surfaces.
- 2 Describes how electrical components work in series circuits.
- 3 Predicts how the pitch of sound produced by a vibrating object changes with object size.
- 4 Recognizes the lenses that bend light rays.

12 Post Test Quiz 3

- 1 Describes the friction force that occurs between two surfaces.
- 2 Predicts how the pitch of sound produced by a vibrating object changes with object size.
- 3 Describes how electrical components work in series circuits.
- 4 Describes the behavior of light.

13 Pre Test Quiz 4

- 1 Predicts that the stretch of a spring is proportional to the weight placed on it.
- 2 Describes how electrical components work in parallel circuits.
- 3 Recognizes different forms of energy.
- 4 Describes how heat insulators and heat conductors lose heat.

14 Post Test Quiz 4

- 1 Predicts that the stretch of a spring is proportional to the weight placed on it.
- 2 Describes how electrical components work in parallel circuits.
- 3 Recognizes different forms of energy.
- 4 Describes how heat insulators and heat conductors lose heat.

ST21-1 Living with Life Science Level-1

1 Bones

- 1 Investigates the bones of the human body.
- 2 Investigates the joints of the human body.

2 Plant Life Cycles

- 1 Uses a board-game to discover the stages in the life cycle of a plant.
- 2 Uses software to discover methods of seeds dispersal from different plants.

3 Animal Life Cycles

- 1 Using software, discovers the different stages of the human life cycle.
- 2 Using software, discovers the different stages in the life cycle of butterflies and frogs.

4 Food Providers

- 1 Uses a matching game to find what foods humans can obtain from animals.
- 2 Uses a matching game to find what foods humans can obtain from plants.

5 The Body

- 1 Investigates the lungs of the human body.
- 2 Investigates the stomach of the human body.
- 3 Investigates the heart of the human body.

6 Using a Microscope

- 1 Identifies the parts and controls of a microscope.
- 2 Uses a microscope to view the cells of plants.

7 Senses

- 1 Uses software to find what parts of the human body give each of the five senses.
- 2 Specifies what senses can be used to identify different things.

8 Acids and Bases

- 1 Uses litmus paper to find out if samples are acidic, basic or neutral.
- 2 Investigates the pH levels of virtual fields to find which field is most suitable to grow crops.

11 Pre Test Quiz 1

- 1 Identifies bones and joints of the human body.
- 2 Identifies the stages in the life cycle of a plant.
- 3 Identifies stages in the life cycle of animals.
- 4 Identifies foods that come from plants and animals.

12 Post Test Quiz 1

- 1 Identifies bones and joints of the human body.
- 2 Identifies the stages in the life cycle of a plant.
- 3 Identifies stages in the life cycle of animals.
- 4 Identifies foods that come from plants and animals.

13 Pre Test Quiz 2

- 1 Identifies characteristics of the lungs, stomach and heart of the human body.
- 2 States the uses of a microscope.
- 3 Identifies senses of the human body.
- 4 Identifies the pH levels of acids and bases.

14 Post Test Quiz 2

- 1 Identifies characteristics of the lungs, stomach and heart of the human body.
- 2 States the uses of a microscope.
- 3 Identifies senses of the human body.
- 4 Identifies the pH levels of acids and bases.

ST21-2 Living with Life Science Level-2

1 Exercise

- 1 Discovers the relationship between heartbeat and pulse.
- 2 Determines the effect of exercise on heart rate.

2 Pollination

- 1 Observes flower pollen magnified by a microscope.
- 2 Discovers how insects aid pollination in the life cycle of a plant.

3 Sorting Animals

- 1 Uses classification keys to sort animals.
- 2 Creates questions in a classification key to sort a group of farmyard animals.

4 Climate Control

- 1 Observes the growth of a plant when grown under different watering conditions.
- 2 Observes the growth of a plant when grown under different temperature conditions.
- 3 Describes different forms of climate control used to grow plants.

5 Diet

- 1 Identifies the nutrients contained in different foods.
- 2 Discovers the food groups necessary for a healthy balanced diet.

6 Plant Food

- 1 Recognizes the purpose of photosynthesis in plants.
- 2 Discovers the effects that sunlight and water have on the growth of plants.
- 3 Discovers that plants require carbon dioxide and produce oxygen as a waste product.

7 Food Chains

- 1 States the energy transfer that occurs between plants to animals and animals to animals in food chains.
- 2 Identifies the producers primary consumers and secondary consumers in food chains.
- 3 Classifies animals as carnivores, herbivores or omnivores.

8 Nutrients

- 1 Determines the nutrients that plants need to grow.
- 2 Observes the effects of tap water, salt water and fertilizer on the growth of plants in a nine day period.

11 Pre Test Quiz 3

- 1 Describes the pulse as a method of detecting blood flow around the body.
- 2 Describes the relationship between a honeybee and a flower for pollination to occur.
- 3 Identifies questions that can be asked to sort different animals.
- 4 Relates plant growth with climate.

12 Post Test Quiz 3

- 1 Identifies questions that can be asked to sort different animals.
- 2 Describes the relationship between a honeybee and a flower for pollination to occur.
- 3 States the appropriate climate to grow different plants.
- 4 Describes the pulse as a method of detecting blood flow around the body.

13 Pre Test Quiz 4

- 1 Associates various nutrients with food groups.
- 2 Identifies the parts of plants that help them to make their own food.
- 3 Determines the placement of animals and plants in food chains.
- 4 Identifies the nutrients plants use for growth.

14 Post Test Quiz 4

- 1 Associates various nutrients with food groups.
- 2 Identifies the parts of plants that help them to make their own food.
- 3 Identifies the various nutrients plants use for growth.
- 4 Distinguishes between a herbivore and a carnivore.

ST22-1 Living with Earth Science Level-1

1 Rivers and Ponds

- 1 Uses a checklist of the seven life processes to identify if things are living or not living.
- 2 Identifies what effect pollution can have on rivers and ponds.

2 Day and Night

- 1 Uses software to find out why there is day and night.
- 2 Uses a shadow trainer to find out why shadows change shape during the day.

3 The Seasons

- 1 Observes the weather during different seasons in a virtual representation of New York.
- 2 Uses a software simulation to find out how seasons are linked to the position of the Earth in relation to the Sun.

4 Fossil Fuels

- 1 Identifies how fossil fuels are made and where they come from.
- 2 Identifies what fossil fuels can be used for.

5 Recycling

- 1 Identifies how different materials can be recycled.
- 2 Uses a simple classification key to sort three different types of metal.

6 The Moon

- 1 Uses software to discover facts about the Moon and its relation to the Earth.
- 2 Uses software to discover the different phases of the Moon.

7 Weather Records

- 1 Discovers symbols that are used to represent the weather.
- 2 Uses a virtual weather station to record temperature and rainfall.

8 Fossils

- 1 Uses a virtual excavation to find different fossils.
- 2 Uses software to find out how different types of fossils are formed.

11 Pre Test Quiz 1

- 1 Identifies if things are alive or not alive and how they can be affected by pollution.
- 2 Describes what causes day and night and what happens to shadows during the day.
- 3 Identifies the seasons at different places on the Earth.
- 4 Identifies fossil fuels and how they are made.

12 Post Test Quiz 1

- 1 Identifies if things are alive or not alive and how they can be affected by pollution.
- 2 Describes what causes day and night and what happens to shadows during the day.
- 3 Identifies the seasons at different places on the Earth.
- 4 Identifies fossil fuels and how they are made.

13 Pre Test Quiz 2

- 1 Identifies processes by which different materials can be recycled.
- 2 Identifies characteristics of the Moon and its phases.
- 3 Identifies symbols and instruments which can be used to represent and measure the weather.
- 4 Describes how fossils are formed.

14 Post Test Quiz 2

- 1 Identifies processes by which different materials can be recycled.
- 2 Identifies characteristics of the Moon and its phases.
- 3 Identifies symbols and instruments which can be used to represent and measure the weather.
- 4 Describes how fossils are formed.

ST22-2 Living with Earth Science Level-2

1 Habitats

- 1 Discovers the characteristics of animals that allow them to survive in their natural habitats.
- 2 Discovers the habitats of different animals.

2 The Planets

- 1 States the position of the planets in the solar system.
- 2 Recognizes planets in the solar system.

3 Rain and Clouds

- 1 States the necessary conditions for the formation of clouds and precipitation.
- 2 Replicates and observes the stages of the water cycle.
- 3 States the different forms of water in the water cycle.

4 Rocks

- 1 Describes the different conditions for the formation of various rocks.
- 2 Sorts rocks into sedimentary, metamorphic and igneous rock types.

5 Global Warming

- 1 Discovers some of the causes of global warming.
- 2 Explores the effects of global warming and alternative energy sources.

6 The Sun

- 1 States the effects that the Sun has on the light levels on the planets of the solar system.
- 2 Observes the effect that distance has on light levels.

7 Separating Mixtures

- 1 Separates mixtures using a sieve.
- 2 Separates solids and liquids using filter paper.

8 Solubility

- 1 Tests if materials are soluble or insoluble.
- 2 Observes the effect of adding an insoluble material to a liquid.

11 Pre Test Quiz 3

- 1 Describes characteristics of animals habitats.
- 2 Identifies planets in the solar system.
- 3 Describes the states and processes of the water cycle.
- 4 States how different rocks are formed.

12 Post Test Quiz 3

- 1 Describes characteristics of animals habitats.
- 2 States how different rocks are formed.
- 3 Identifies planets in the solar system.
- 4 Describes the states and processes of the water cycle.

13 Pre Test Quiz 4

- 1 Identifies some causes and effects of global warming.
- 2 Relates the position of a planet in the solar system to the amount of light it receives.
- 3 Identifies how mixtures can be separated using different filters.
- 4 Describes what happens to soluble and insoluble materials when they are added to a liquid.

14 Post Test Quiz 4

- 1 Describes what happens to soluble and insoluble materials when they are added to a liquid.
- 2 Identifies how mixtures can be separated using filters.
- 3 Relates the position of a planet in the solar system to the amount of light it receives.
- 4 Identifies some causes and effects of global warming.

ST23-1 Living with Scientific Reasoning Level-1

1 Measuring Distance

- 1 Uses a motion sensor to measure distances.
- 2 Uses a ruler and a motion sensor to measure height.

2 Alternative Energy

- 1 Identifies renewable and non-renewable energy sources.
- 2 Uses a solar panel to generate electricity in a circuit.

3 Elasticity

- 1 Tests a series of different objects to find if they are flexible, inflexible or elastic.
- 2 Identifies if different objects should be flexible, inflexible or elastic in order to do their jobs.

4 Balance

- 1 Discovers the effect of forces on a lever.
- 2 Uses a lever to balance weights.

5 Light Levels

- 1 Uses an analogue light meter to measure light levels in a room.
- 2 Uses a digital light meter to measure light levels in a room.

6 Electromagnets

- 1 Uses a bar magnet and an electromagnet to find the differences and similarities between them.
- 2 Increases the strength of an electromagnet.

7 Natural Materials

- 1 Identifies where different natural materials come from.
- 2 Identifies what natural materials have been used to make a series of sample objects.

8 Crawler

- 1 Finds the effects of giving a crawler more energy.
- 2 Modifies a crawler so that it can store enough energy to reach the top of a slope.
- 3 Modifies a crawler to change the direction it moves in.

11 Pre Test Quiz 1

- 1 Identifies different ways to measure things.
- 2 Identifies renewable and non-renewable energy sources.
- 3 Identifies flexible, inflexible and elastic material properties.
- 4 Indicates how levers can be used to balance weights.

12 Post Test Quiz 1

- 1 Identifies different ways to measure things.
- 2 Identifies renewable and non-renewable energy sources.
- 3 Identifies flexible, inflexible and elastic material properties.
- 4 Indicates how levers can be used to balance weights.

13 Pre Test Quiz 2

- 1 Identifies how the level of light can be measured.
- 2 Identifies the behavior of temporary and permanent magnets.
- 3 Identifies if materials come from the Earth, from plants or from animals.
- 4 Identifies how a device called a crawler works on different surfaces when given varying amounts of energy.

14 Post Test Quiz 2

- 1 Identifies how the level of light can be measured.
- 2 Identifies the behavior of temporary and permanent magnets.
- 3 Identifies if materials come from the Earth, from plants or from animals.
- 4 Identifies how a device called a crawler works on different surfaces when given varying amounts of energy.

ST23-2 Living with Scientific Reasoning Level-2

1 Temperature

- 1 Measures temperature using thermometers.
- 2 Uses graphs to plot the change of temperature over periods of time.

2 Flight

- 1 Uses wing flaps and rudders to control the direction of airplanes in the air.
- 2 Changes the size and shape of a wing of a model airplane to see the effect in the lift given.
- 3 Changes the balance of a model airplane to see the effect on flight.

3 Changes

- 1 Describes the changes that occur in different materials when they are heated.
- 2 Describes the changes that occur in different materials when they are cooled.
- 3 States if changes in different materials, caused by heating and cooling, can be reversed.

4 Lifting Machines

- 1 Discovers the uses of a windlass.
- 2 Constructs a windlass to observe that a gear will increase the amount of lift for each turn of its handle.

5 Pendulum

- 1 Observes the effect of the changing the weight of a pendulum on the time of its swing.
- 2 Observes the effect of changing the length of a pendulum on the time of its swing.
- 3 Constructs a pendulum to observe the relationship between pendulum weight and length with its swing time.

6 Sending Signals

- 1 Sends messages using radio waves.
- 2 Sends messages using light signals.
- 3 Sends messages using coded signals.

7 Density

- 1 Describes how density of an object can effect if it floats or sinks in water.
- 2 Relates the weight, shape and size of a material to its density.

8 Bridges

- 1 Uses different supports to make a bridge stronger.
- 2 Constructs a bridge to span a gap.
- 3 Observes the weakness of a beam bridge.

11 Pre Test Quiz 3

- 1 States how temperature can be measured and identifies the temperature of the human body.
- 2 States how wings can be used in flight.
- 3 Identifies the changes that happen to materials when they are heated and cooled.
- 4 Describes the function of lifting machines.

12 Post Test Quiz 3

- 1 States how temperature can be measured and states the temperature of the human body.
- 2 Identifies the change that happens to materials when they are heated and cooled.
- 3 States how wings can be used in flight.
- 4 Describes the function of a lifting machine.

13 Pre Test Quiz 4

- 1 Relates the swing time of a pendulum with its length.
- 2 States different ways that signals can be sent.
- 3 States the relationship between weight, size and density of a material.
- 4 Identifies different types of bridges.

14 Post Test Quiz 4

- 1 States the relationship between weight, size and density of a material.
- 2 States different ways that signals can be sent.
- 3 Identifies different types of bridges.
- 4 Relates the swing time of a pendulum with its length.

Section 6.

ClassAct Student Report

Mississippi Grade 1 Science Standards Report

Student Name: Juan D'Silva

Student ID: JD19657

Class: Grade 4 Science

Scores – A*, A, B, C, D, F

A Explore the basic patterns of living systems.

A Examine the function of plant parts.

*Uses a microscope to view the cells of plants.
Determines the nutrients that plants need to grow.
Describes different forms of climate control used to grow plants.
Discovers how insects aid pollination in the life cycle of a plant.
Observes the growth of a plant when grown under different watering conditions.
Observes the growth of a plant when grown under different temperature conditions.
Recognises the purpose of photosynthesis in plants.
Discovers that plants require carbon dioxide and produce oxygen as a waste product.
Identifies the parts of plants that help them to make their own food.*

A Illustrate the parts of a seed.

Uses software to discover methods of seeds dispersal from different plants.

B Observe and sequence the life cycles of plants, insects, and animals.

*Identifies the stages in the life cycle of a plant.
Discovers the effects that sunlight and water have on the growth of plants.
Recognises the purpose of photosynthesis in plants.
Uses a board-game to discover the stages in the life cycle of a plant.
Uses software to discover methods of seeds dispersal from different plants.
Discovers how insects aid pollination in the life cycle of a plant.
Discovers that plants require carbon dioxide and produce oxygen as a waste product.
States the energy transfer that occurs between plants to animals and animals to animals in food chains.
Determines the nutrients that plants need to grow.
Identifies the parts of plants that help them to make their own food.
Observes the effects of tap water, salt water and fertiliser on the growth of plants in a nine day period.*

A* Identify major organs of the human body such as the heart, lungs, brain, intestines, and stomach.

*Investigates the stomach of the human body.
Determines the effect of exercise on heart rate.
Investigates the heart of the human body.
Discovers the relationship between heartbeat and pulse.
Investigates the lungs of the human body.*

B Investigate the diversity of living things.

B Classify plants and animals according to external features (scales, feathers, fur, etc.).
Identifies questions that can be asked to sort different animals.
Creates questions in a classification key to sort a group of farmyard animals.
States the appropriate climate to grow different plants.
Identifies the parts of plants that help them to make their own food.
Uses classification keys to sort animals.

Identify plants and animals indigenous to Mississippi.

N/A

Compare plants and animals in Mississippi with those found in the jungle, desert and arctic regions.

N/A

Explain the term "extinct" as related to animals.

N/A

A Identify and describe daily changes in the sky.

A Describe the changing position of the sun in the daytime sky.
Uses a software simulation to find out how seasons are linked to the position of the Earth in relation to the Sun.

Describe the changing position of the stars in the nighttime sky.

N/A

A* Describe the changing position of the moon in the sky.
Identifies characteristics of the Moon and its phases.
Uses software to discover facts about the Moon and its relation to the Earth.
Uses software to discover the different phases of the Moon.

B Identify day and night as parts of a cycle of regular change.
Describes what causes day and night and what happens to shadows during the day.
Uses software to find out why there is day and night.
Uses a shadow trainer to find out why shadows change shape during the day.

B Examine the structure of the solar system.

B Name the nine planets.
States the position of the planets in the solar system.
Recognises planets in the solar system.

C Identify the sun as the major source of energy.
States the effects that the Sun has on the light levels on the planets of the solar system.
Discovers the effects that sunlight and water have on the growth of plants.
Uses a software simulation to find out how seasons are linked to the position of the Earth in relation to the Sun.

<p>A Discover the diversity of the Earth' s surface.</p>	<p>A Identify features of the Earth' s surface such as mountains, lakes, oceans, and rivers. <i>Discovers the habitats of different animals. Discovers the characteristics of animals that allow them to survive in their natural habitats. Describes the different conditions for the formation of various rocks. Sorts rocks into sedimentary, metamorphic and igneous rock types.</i></p> <p>Describe the difference between the oceans and the continents. <i>N/A</i></p>
<p>C Explore changes that occur in the Earth' s atmosphere.</p>	<p>B Record, graph, and compare weather differences including sunshine, clouds, rain, wind, and snow. <i>Observes the weather during different seasons in a virtual representation of New York. Identifies symbols and instruments which can be used to represent and measure the weather. Uses a virtual weather station to record temperature and rainfall. Discovers symbols that are used to represent the weather.</i></p> <p>C Identify the environmental changes that occur with the seasons. <i>Observes the weather during different seasons in a virtual representation of New York. Uses a software simulation to find out how seasons are linked to the position of the Earth in relation to the Sun. Identifies the seasons at different places on the Earth.</i></p>
<p>B Investigate how environmental concerns relate to the quality of life.</p>	<p>A Examine pollution and how recycling helps the environment. <i>Identifies if things are alive or not alive and how they can be affected by pollution. Uses a simple classification key to sort three different types of metal. Identifies how different materials can be recycled. Identifies what effect pollution can have on rivers and ponds.</i></p> <p>C Identify ways to reduce the amount of wastes thrown away. <i>Identifies how different materials can be recycled. Uses a simple classification key to sort three different types of metal.</i></p>
<p>A Examine the different types of observable and measurable changes that matter can undergo.</p>	<p>A Observe and discuss the transformation of solids, liquids, and gases. <i>Separates solids and liquids using filter paper. Observes the effect of adding an insoluble material to a liquid. Describes what happens to soluble and insoluble materials when they are added to a liquid. Identifies that sound travels as a vibration and so can travel through solids.</i></p> <p>Identify solids, liquids, and gases as states of matter. <i>N/A</i></p>

B Explore the concepts of length, weight, temperature, and capacity/volume using nonstandard and standard (English and metric) units of measurement.

- A** Compare/contrast objects according to size, shape, color, texture, and use.
Determines if objects are transparent or opaque using a light ray box.
Identifies the attraction and repulsion between magnets and other objects.
Identifies what natural materials have been used to make a series of sample objects.
Identifies if different objects should be flexible, inflexible or elastic in order to do their jobs.
Tests a series of different objects to find if they are flexible, inflexible or elastic.
Identifies if objects are electrical conductors or electrical insulators.
- B** Manipulate magnets to demonstrate the interaction of magnets and other objects.
Determines which materials stick to a magnet.
Increases the strength of an electromagnet.
Uses a bar magnet and an electromagnet to find the differences and similarities between them.
Identifies the attraction and repulsion between magnets and other objects.
Discovers that materials containing iron stick to magnets.
Identifies the behaviour of temporary and permanent magnets.
Observes the magnetic attraction and repulsion forces between the poles of magnets.
- A** Use nonstandard (paper clips, unifix cubes) and standard (inches, centimeters) units to explore length.
Observes the effect of changing the length of a pendulum on the time of its swing.
Observes the relationship between length of rubber band and pitch of sound made by a stringed instrument.
Constructs a pendulum to observe the relationship between pendulum weight and length with its swing time.
Relates the swing time of a pendulum with its length.
Observes the relationship between length of tube and pitch of sound made by a wind instrument.
- C** Compare weight of objects (heavy/light).
Uses a lever to balance weights.
Indicates how levers can be used to balance weights.
Discovers that the stretch of spring is proportional to the weight placed on it.
Observes the effect of the changing the weight of a pendulum on the time of its swing.
Constructs a pendulum to observe the relationship between pendulum weight and length with its swing time.
States the relationship between weight, size and density of a material.
Relates the weight, shape and size of a material to its density.

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- B** Explore and estimate capacity/volume of various containers in nonstandard units.
Observes the relationship between volume of air and pitch of sound made by a percussion instrument.
- B** Explore the concept of hot/cold using a non-mercury thermometer.
*Uses a virtual weather station to record temperature and rainfall.
Uses graphs to plot the change of temperature over periods of time.
States how temperature can be measured and identifies the temperature of the human body.
Measures temperature using thermometers.*