

2013-2014 5th Grade Science Pacing Guide
 Content strands: Inquiry, Physical Science, Life Science, Earth and Space.
 First Nine Weeks

Competency	Mississippi Science Framework Objective	DOK	
3	Predict characteristics, structures, life cycles, environments, evolution, and diversity of organisms. (Life Science)		
1	Develop and demonstrate an understanding of scientific inquiry using process skills. (Inquiry)		
3b	<p>Research and classify the organization of living things.</p> <ul style="list-style-type: none"> • Differences between plant and animal cells • Function of the major parts of body system (nervous, circulatory, respiratory, digestive, skeletal, muscular) and the ways they support one another <p>Examples of organisms as single-celled or multi-celled</p>	2	
1c	<p>Use precise measurement in conjunction with simple tools and technology to perform tests and collect data.</p> <ul style="list-style-type: none"> • Tools (English rulers {to the nearest one-sixteenth of an inch}, metric ruler {to the nearest millimeter}, thermometers, scales, hand lenses, microscopes, balances, clocks, calculators, anemometers, rain gauges, barometers, hygrometers) • Types of data (height, mass, volume, temperature, length, time, distance, volume, perimeter, area) 	1	
3a	<p>Compare and contrast the diversity of organisms due to adaptations to show how organisms have evolved as a result of environmental changes.</p> <ul style="list-style-type: none"> • Diversity based on kingdoms, phyla, and classes (e.g. internal/external structure, body temperature, size, shape) • Adaptations that increase an organism's chances to survive and reproduce in a particular habitat (e.g. cacti needles/leaves, fur/scales) • Evidence of fossils as indicators of how life and environmental conditions have changed 	2	
1d	Organize and interpret data in tables and graphs to construct explanations and draw conclusions.	2	
3a	<p>Compare and contrast the diversity of organisms due to adaptations to show how organisms have evolved as a result of environmental changes.</p> <ul style="list-style-type: none"> • Diversity based on kingdoms, phyla, and classes (e.g. internal/external structure, body temperature, size, shape) • Adaptations that increase an organism's chances to survive and reproduce in a particular habitat (e.g. cacti needles/leaves, fur/scales) • Evidence of fossils as indicators of how life and environmental conditions have changed 	2	

1e	Using drawings, tables, graphs, and written and oral language to describe objects and explain ideas and actions.	2	
3b	<p>Research and classify the organization of living things.</p> <ul style="list-style-type: none"> • Differences between plant and animal cells • Function of the major parts of body system (nervous, circulatory, respiratory, digestive, skeletal, muscular) and the ways they support one another <p>Examples of organisms as single-celled or multi-celled</p>	2	
1e	Using drawings, tables, graphs, and written and oral language to describe objects and explain ideas and actions.	2	
3b	<p>Research and classify the organization of living things.</p> <ul style="list-style-type: none"> • Differences between plant and animal cells • Function of the major parts of body system (nervous, circulatory, respiratory, digestive, skeletal, muscular) and the ways they support one another <p>Examples of organisms as single-celled or multi-celled</p>	2	
3c	Research and cite evidence of the work of scientists (e.g. Pasteur, Fleming, Salk) as it contributed to the discovery and prevention of disease.	3	
1e	Using drawings, tables, graphs, and written and oral language to describe objects and explain ideas and actions.	2	
3d	<p>Distinguish between asexual and sexual reproduction.</p> <ul style="list-style-type: none"> • Asexual reproduction processes in plants and fungi (e.g. vegetative propagation in stems, roots, and leaves of plants, budding in yeasts, fruiting bodies in fungi) • Asexual cell division (mushroom spores produced/dispersed) • Sexual reproduction (e.g. eggs, seeds, fruit). 	1	
1c	<p>Use precise measurement in conjunction with simple tools and technology to perform tests and collect data.</p> <ul style="list-style-type: none"> • Tools (English rulers {to the nearest one-sixteenth of an inch}, metric ruler {to the nearest millimeter}, thermometers, scales, hand lenses, microscopes, balances, clocks, calculators, anemometers, rain gauges, barometers, hygrometers) • Types of data (height, mass, volume, temperature, length, time, distance, volume, perimeter, area) 	1	
3a	<p>Compare and contrast the diversity of organisms due to adaptations to show how organisms have evolved as a result of environmental changes.</p> <ul style="list-style-type: none"> • Diversity based on kingdoms, phyla, and classes (e.g. internal/external structure, body temperature, size, shape) • Adaptations that increase an organism's chances to survive and reproduce in a particular habitat (e.g. cacti needles/leaves, fur/scales) • Evidence of fossils as indicators of how life and environmental conditions have changed 	2	

1a	Form a hypothesis, predict outcomes, and conduct a fair investigation that includes manipulation variables and using experimental controls.	3	
3a	<p>Compare and contrast the diversity of organisms due to adaptations to show how organisms have evolved as a result of environmental changes.</p> <ul style="list-style-type: none"> • Diversity based on kingdoms, phyla, and classes (e.g. internal/external structure, body temperature, size, shape) • Adaptations that increase an organism's chances to survive and reproduce in a particular habitat (e.g. cacti needles/leaves, fur/scales) • Evidence of fossils as indicators of how life and environmental conditions have changed 	2	
1d	Organize and interpret data in tables and graphs to construct explanations and draw conclusions.	2	
3e	Give examples of how consumers and producers (carnivores, herbivores, omnivores, and decomposers) are related in food chains and food webs.	1	
1e	Using drawings, tables, graphs, and written and oral language to describe objects and explain ideas and actions.	2	
1d	Organize and interpret data in tables and graphs to construct explanations and draw conclusions.	2	

Second Nine Weeks

Competency	Mississippi Science Framework Objectives	DOK	
2	Understand relationships of the properties of objects and materials, position and motion of objects, and transfer of energy to explain the physical world. (Physical Science)		
1	Develop and demonstrate an understanding of scientific inquiry using process skills. (Inquiry)		
2b	Differentiate between elements, compounds, and mixtures and between chemical and physical changes (e.g. gas evolves, color, and /or temperature changes).	2	
1b	Distinguish between observations and inferences.	2	
2a	Determine how the properties of an object affect how it acts and interacts.	2	
2f	Describe physical properties of matter (e.g. mass, density, boiling point, freezing point) including mixtures and solutions. <ul style="list-style-type: none"> Filtration, sifting, magnetism, evaporation, and flotation Mass, density, boiling point, and freezing point of matter Effects of temperature changes on the solubility of substances 	1	
1c	Use precise measurement in conjunction with simple tools and technology to perform tests and collect data. <ul style="list-style-type: none"> Tools (English rulers {to the nearest one-sixteenth of an inch}, metric ruler {to the nearest millimeter}, thermometers, scales, hand lenses, microscopes, balances, clocks, calculators, anemometers, rain gauges, barometers, hygrometers) Types of data (height, mass, volume, temperature, length, time, distance, volume, perimeter, area) 	1	
1e	Using drawings, tables, graphs, and written and oral language to describe objects and explain ideas and actions.	2	
2g	Categorize materials as conductors or insulators and discuss their real life applications (e.g. building construction, clothing, animal covering).	2	
1d	Organize and interpret data in tables and graphs to construct explanations and draw conclusions.	2	
2b	Differentiate between elements, compounds, and mixtures and between chemical and physical changes (e.g. gas evolves, color, and /or temperature changes).	2	
2f	Describe physical properties of matter (e.g. mass, density, boiling point, freezing point) including mixtures and solutions. <ul style="list-style-type: none"> Filtration, sifting, magnetism, evaporation, and flotation Mass, density, boiling point, and freezing point of matter Effects of temperature changes on the solubility of substances 	1	
1e	Using drawings, tables, graphs, and written and oral language to describe objects and explain ideas and actions.	2	

2a	Determine how the properties of an object affect how it acts and interacts.	2	
2b	Differentiate between elements, compounds, and mixtures and between chemical and physical changes (e.g. gas evolves, color, and /or temperature changes).	2	
1a	Form a hypothesis, predict outcomes, and conduct a fair investigation that includes manipulating variables and using experimental controls.	3	
2c	Investigate the motion of an object in terms of its position, direction of motion, and speed. <ul style="list-style-type: none"> • The relative positions and movements of objects using points of reference (distance vs. time of moving objects) • Force required to move an object using appropriate devices (e.g. spring scale) • Variables that affect speed (e.g. ramp height/length/surface, mass of object) • Effects of an unbalanced force on an object's motion in terms of speed and direction 	2	
1c	Use precise measurement in conjunction with simple tools and technology to perform tests and collect data. <ul style="list-style-type: none"> • Tools (English rulers {to the nearest one-sixteenth of an inch}, metric ruler {to the nearest millimeter}, thermometers, scales, hand lenses, microscopes, balances, clocks, calculators, anemometers, rain gauges, barometers, hygrometers) • Types of data (height, mass, volume, temperature, length, time, distance, volume, perimeter, area) 	1	

Third Nine Weeks

Competency	Mississippi Science Framework Objective	DOK	
2	Understand relationships of the properties of objects and materials, position and motion of objects, and transfer of energy to explain the physical world. (Physical Science)		
1	Develop and demonstrate an understanding of scientific inquiry using process skills. (Inquiry)		
4	Develop an understanding of the properties of Earth materials, objects in the sky, and changes in Earth and sky. (Earth and Space)		
2d	Categorize examples of potential energy as gravitational (e.g. boulder on a hill, child on a slide), elastic (e.g. compressed spring, slingshot, rubber band), or chemical (e.g. unlit match, food).	2	
1h	Infer and describe alternate explanations and predictions.	3	
2e	Differentiate between the properties of light as reflection, refraction, and absorption. <ul style="list-style-type: none"> Image reflected by a plane mirror and a curved-surfaced mirror Light passing through air or water Optical tools such as prisms, lenses, mirrors, and eyeglasses 	1	
1a	Form a hypothesis, predict outcomes, and conduct a fair investigation that includes manipulating variables and using experimental controls.	3	
4a	Categorize Earth's materials <ul style="list-style-type: none"> Rocks, minerals, soils, water, and atmospheric gases Layers of the atmosphere, hydrosphere, and lithosphere 	1	
1h	Infer and describe alternate explanations and predictions.	3	
4b	Explain how surface features caused by constructive processes (e.g. depositions, volcanic eruptions, earthquakes) differ from destructive processes (e.g. erosion, weathering, impact of organisms)	2	
1f	Make and compare different proposals when designing a solution or product	2	
1a	Form a hypothesis, predict outcomes, and conduct a fair investigation that includes manipulation variables and using experimental controls.	3	
1g	Evaluate results of different data (whether trivial or significant).	2	
4a	Categorize Earth's materials <ul style="list-style-type: none"> Rocks, minerals, soils, water, and atmospheric gases Layers of the atmosphere, hydrosphere, and lithosphere 	1	
1e	Use drawings, tables, graphs, and written and oral language to describe objects and explain ideas and actions.	2	
4g	Conclude that the supply of many Earth resources (e.g. fuels, metals, fresh water, farmland) is limited and critique a plan to extend the use of Earth's resources (e.g. recycling, reused, renewal).	3	
1c	Use precise measurement in conjunction with simple tools and	1	

	<p>technology to perform tests and collect data.</p> <ul style="list-style-type: none"> • Tools (English rulers {to the nearest one-sixteenth of an inch}, metric ruler {to the nearest millimeter}, thermometers, scales, hand lenses, microscopes, balances, clocks, calculators, anemometers, rain gauges, barometers, hygrometers) • Types of data (height, mass, volume, temperature, length, time, distance, volume, perimeter, area) 		

Fourth Nine Weeks

Competency	Mississippi Science Framework Objective	DOK	
4	Develop an understanding of the properties of Earth materials, objects in the sky, and changes in Earth and sky. (Earth and Space)		
1	Develop and demonstrate an understanding of scientific inquiry using process skills. (Inquiry)		
4g	Conclude that the supply of many Earth resources (e.g. fuels, metals, fresh water, farmland) is limited and critique a plan to extend the use of Earth's resources (e.g. recycling, reused, renewal).	3	
1c	Use precise measurement in conjunction with simple tools and technology to perform tests and collect data. <ul style="list-style-type: none"> Tools (English rulers {to the nearest one-sixteenth of an inch}, metric ruler {to the nearest millimeter}, thermometers, scales, hand lenses, microscopes, balances, clocks, calculators, anemometers, rain gauges, barometers, hygrometers) Types of data (height, mass, volume, temperature, length, time, distance, volume, perimeter, area) 	1	
4d	Describe changes caused by humans on the environment and natural resources and cite evidence from research of ways to conserve natural resources in the United States, including (but not limited to) Mississippi. Examples of Mississippi efforts include the following: <ul style="list-style-type: none"> Associated Physics of America, a private company located in Greenwood Mississippi , develops ways to convert a variety of agricultural products into efficient, environment-friendly and cost-effective energy sources. The Natural Resource Enterprises (NRE) Program of the Department of Wildlife and Fisheries and the Cooperative Extension Serviced at MSU educate landowners in the Southeast about sustainable natural resource enterprises and compatible habitat management practices. The Engineer Research and Development Center of the Vicksburg District of the U.S. Army Corps of Engineers provides quality engineering and other professional products and services to develop and manage the Nation's water resources, reduce flood damage, and protect the environment. 	2	
4g	Conclude that the supply of many Earth resources (e.g. fuels, metals, fresh water, farmland) is limited and critique a plan to extend the use of Earth's resources (e.g. recycling, reused, renewal).	3	
1f	Make and compare different proposals when designing a solution or product	2	

4a	<p>Categorize Earth's materials</p> <ul style="list-style-type: none"> • Rocks, minerals, soils, water, and atmospheric gases • Layers of the atmosphere, hydrosphere, and lithosphere 	1	
4c	<p>Summarize how weather changes.</p> <ul style="list-style-type: none"> • Weather changes from day to day and over the seasons • Tools by which weather is observed, recorded, and predicted 	2	
1c	<p>Use precise measurement in conjunction with simple tools and technology to perform tests and collect data.</p> <ul style="list-style-type: none"> • Tools (English rulers {to the nearest one-sixteenth of an inch}, metric ruler {to the nearest millimeter}, thermometers, scales, hand lenses, microscopes, balances, clocks, calculators, anemometers, rain gauges, barometers, hygrometers) • Types of data (height, mass, volume, temperature, length, time, distance, volume, perimeter, area) 	1	
4e	<p>Predict the movement patterns of the sun, moon, and Earth over a specified time period.</p>	1	
1e	<p>Use drawings, tables, graphs, and written and oral language to describe objects and explain ideas and actions.</p>	2	
4f	<p>Compare and contrast the physical characteristics of the planets (e.g. mass, surface gravity, distance from the sun, surface characteristics, moons).</p>	2	
1d	<p>Organize and interpret data in tables and graphs to construct explanations and draw conclusions.</p>	2	