



6th Grade Science Pacing Guide 2017 - 2018

1st Nine Weeks

August 7, 2017 – October 6, 2017

Labor Day Holiday: September 4, 2017

Progress Reports Issued: September 7, 2017

1st 9 Weeks Assessments: October 3, 4, 5, & 6

Unit	Objective	Mississippi 6 th Grade Science Framework Objectives	Tentative teaching Date(s)
Scientific Inquiry	1b	1b. Distinguish between qualitative and quantitative observations and make inferences based on observations. (DOK 3)	Week 1 August 7-11, 2017
Scientific Inquiry	1c	1c. Use simple tools and resources to gather and compare information (using standard, metric, and non-standard units of measurement). (DOK 1) <ul style="list-style-type: none"> • Tools (e.g., English rulers [to the nearest one-sixteenth of an inch], metric rulers [to the nearest millimeter], thermometers, scales, hand lenses, microscopes, balances, clocks, calculators, anemometers, rain gauges, barometers, hygrometers, telescopes, compasses, spring scales) • Types of data (e.g., linear measures, mass, volume, temperature, time, area, perimeter) • Resources (e.g., Internet, electronic encyclopedias, journals, community resources, etc.) 	Week 1 August 7-11, 2017
Scientific Inquiry	1d	1d. Analyze data collected from a scientific investigation to construct explanations and draw conclusions. (DOK 3)	Week 2 August 14-18, 2017
Scientific Inquiry	1e	1e. Communicate scientific procedures and conclusions using diagrams, charts, tables, graphs, maps, written explanations, and/or scientific models. (DOK 2)	Week 2 August 14-18, 2017
Physical Science	2a, 2b	2a- Recognize that atoms of a given element are all alike but atoms of other elements have different atomic structures. (DOK 1) 2b - Distinguish physical properties of matter (e.g., melting points, boiling points, solubility) as it relates to changes in states. (DOK 2) <ul style="list-style-type: none"> • Between solids, liquids, and gases through models that relate matter to particles in motion • Solubility in water of various solids to activities 	Week 3 August 21-25, 2017



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		(e.g., heating, stirring, shaking, crushing) on the rate of solution <ul style="list-style-type: none"> Use of solubility differences to identify components of a mixture (e.g., chromatography) 	
	2d	2d- Investigate the mechanical and chemical forms of energy and demonstrate the transformations from one form to another. (DOK 2) <ul style="list-style-type: none"> Energy transformations represented in the use of common household objects Mechanical energy transformed to another form of energy (e.g. vibrations, heat through friction) Chemical energy transformed to another form of energy (e.g., light wands, lightning bugs, batteries, bulbs) 	Week 4 August 28- September 1, 2017
	2e	2e- Apply the laws of reflection and refraction to explain everyday phenomena. (DOK 2) <ul style="list-style-type: none"> Properties of reflection, refraction, transmission, and absorption of light Images formed by plane, convex, and concave lenses and mirrors, and reflecting and refracting telescopes Objects that are opaque, transparent, or translucent 	Week 5 September 4-8, 2017
	2g	2g Predict and explain factors that affect the flow of heat in solids, liquids, and gases. (DOK 3) <ul style="list-style-type: none"> Insulating factors in real life applications (e.g., building, construction, clothing, animal covering) Conduction, convection, or radiation factors used to enhance the flow of heat Temperature differences on the movement of water 	Week 6 September 11-15, 2017
	2c	2c Investigate and describe the effects of forces acting on objects. (DOK 2) <ul style="list-style-type: none"> Gravity, friction, magnetism, drag, lift, and thrust Forces affecting the motion of objects 	Week 7 September 18 - 22, 2017
	1b-1c-1d-1e-	Reviewing Multiple Skills 1b-1c-1d-1e-2a-2b-2c- 2d – 2e– 2g	Week 8 September 25 - 29,



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	2a-2b- 2c- 2d – 2e – 2g		2017
		Comprehensive 1st 9 Weeks Assessment	Week 9 October 2-6, 2017



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2nd Nine Weeks

October 10, 2017 – December 20, 2017

Report Card Issued: October 12

Fall Break: October 9, 10

District Professional Development: October 10

Progress Reports Issued: November 9

Thanksgiving Holiday Break: November 20 – 24

Christmas Holiday Break: December 21-January 3, 2018

2nd 9 Weeks Assessments: December 18, 19, 20

Unit	Objective	Mississippi 6 th Grade Science Framework Objectives	Tentative teaching Date(s)
Scientific Inquiry	1a	1a. Design and conduct an investigation that includes predicting outcomes, using experimental controls, and making inferences. (DOK 3)	Week 10 & Week 11 October 11-13, 2017
Scientific Inquiry	1b-1e Review	<p>1b. Distinguish between qualitative and quantitative observations and make inferences based on observations. (DOK 3)</p> <p>1c. Use simple tools and resources to gather and compare information (using standard, metric, and non-standard units of measurement). (DOK 1)</p> <ul style="list-style-type: none"> • Tools (e.g., English rulers [to the nearest one-sixteenth of an inch], metric rulers [to the nearest millimeter], thermometers, scales, hand lenses, microscopes, balances, clocks, calculators, anemometers, rain gauges, barometers, hygrometers, telescopes, compasses, spring scales) • Types of data (e.g., linear measures, mass, volume, temperature, time, area, perimeter) • Resources (e.g., Internet, electronic encyclopedias, journals, community resources, etc.) <p>1d. Analyze data collected from a scientific investigation to construct explanations and draw conclusions. (DOK 3)</p> <p>1e. Communicate scientific procedures and conclusions using diagrams, charts, tables, graphs, maps, written explanations, and/or scientific</p>	Week 10 & Week 11 October 11-13, 2017



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		models. (DOK 2)	
Scientific Inquiry	1f	1f. Evaluate the results or solutions to problems by considering how well a product or design met the challenge to solve a problem. (DOK 3)	Week 10 & Week 11 October 11-13, 2017
Physical Science	2c, 2f	<p>2c- Investigate and describe the effects of forces acting on objects. (DOK 2)</p> <ul style="list-style-type: none"> • Gravity, friction, magnetism, drag, lift, and thrust • Forces affecting the motion of objects <p>2f- Develop a logical argument to explain how the forces which affect the motion of objects has real-world applications including (but not limited to) examples of Mississippi’s contributions as follows: (DOK 3)</p> <ul style="list-style-type: none"> • Automotive industry (Nissan’s new production plant is located in Canton, MS. Toyota’s new facility is in Tupelo, MS.) • Aerospace industry (The Raspet Flight Research Laboratory, housed at Mississippi State University, is one of the premier university flight research facilities in the country.) • Shipbuilding industry (Ingall’s Shipbuilding, of Pascagoula, MS, is a leading supplier of marine vessels to the United States Navy.) 	Week 11 October 16-20, 2017
Life Science	3b	<p>3b. Compare and contrast structure and function in living things to include cells and whole organisms. (DOK 2)</p> <ul style="list-style-type: none"> • Hierarchy of cells, tissues, organs, and organ systems to their functions in an organism • Function of plant and animal cell parts (vacuoles, nucleus, cytoplasm, cell membrane, cell wall, chloroplast) • Vascular and nonvascular plants, flowering and non-flowering plants, deciduous and coniferous trees 	Week 12 October 23-27, 2017
Life Science	3c	<p>3c. Distinguish between the organization and development of humans to include the effects of disease. (DOK 2)</p> <ul style="list-style-type: none"> • How systems work together (e.g., respiratory, circulatory) • Fertilization, early cell division, implantation, embryonic and fetal development, infancy, childhood, 	Week 13 October 30- November 3, 2017



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		<p>adolescence, adulthood, and old age</p> <ul style="list-style-type: none"> • Common diseases caused by microorganisms (e.g., bacteria, viruses, malarial parasites) 	
Life Science	3d	<p>3d. Describe and summarize how an egg and sperm unite in the reproduction of angiosperms and gymnosperms. (DOK 1)</p> <ul style="list-style-type: none"> • The path of the sperm cells to the egg cell in the ovary of a flower • The structures and functions of parts of a seed in the formation of a plant and of fruits • How the combination of sex cells results in a new combination of genetic information different from either parent. 	<p>Week 14 November 6-10, 2017</p>
Life Science	3e	<p>3e. Construct a diagram of the path of solar energy through food webs that include humans and explain how the organisms relate to each other. (DOK 2)</p> <ul style="list-style-type: none"> • Autotrophs and heterotrophs, producers, consumers and decomposers • Predator/prey relationships, competition, symbiosis, parasitism, commensalisms, mutualism 	<p>Week 15 November 13-17, 2017</p>
Life Science	3a	<p>3a. Describe and predict interactions (among and within populations) and the effects of these interactions on population growth to include the effects on available resources. (DOK 2)</p> <ul style="list-style-type: none"> • How cooperation, competition and predation affect population growth • Effects of overpopulation within an ecosystem on the amount of resources available • How natural selection acts on a population of organisms in a particular environment via enhanced reproductive success 	<p>Week 16 November 27- December 1, 2017</p>
Life Science	3a	<p>3a. Describe and predict interactions (among and within populations) and the effects of these interactions on population growth to include the effects on available resources. (DOK 2)</p> <ul style="list-style-type: none"> • How cooperation, competition and predation affect population growth • Effects of overpopulation within an ecosystem on the amount of resources 	<p>Week 17 December 4-8, 2017</p>



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		<p>available</p> <ul style="list-style-type: none"> How natural selection acts on a population of organisms in a particular environment via enhanced reproductive success 	
	1a-1f, 2c, 3a, 3b, 3c, 3d, and 3e	<p>Reviewing Multiple Skills: 1a-1f, 2c, 3a, 3b, 3c, 3d, and 3e</p>	<p>Week 18 December 11 - 15, 2017</p>
		<p>Comprehensive 2nd 9 Weeks Assessment</p>	<p>Week 19 December 18-20 , 2017</p>



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3rd Nine Weeks

January 4, 2018 – March 9, 2018

Report Cards Issued: January 11

Dr. MLK Holiday: January 15

Progress Reports Issued: February 8

President's Day Holiday: February 19

3rd 9 Weeks Assessments: March 6, 7, 8, & 9

Unit	Objective	Mississippi 6 th Grade Science Framework Objectives	Tentative teaching Date(s)
Scientific Inquiry	1a-1f Review	<p>1a. Design and conduct an investigation that includes predicting outcomes, using experimental controls, and making inferences. (DOK 3)</p> <p>1b. Distinguish between qualitative and quantitative observations and make inferences based on observations. (DOK 3)</p> <p>1c. Use simple tools and resources to gather and compare information (using standard, metric, and non-standard units of measurement). (DOK 1)</p> <ul style="list-style-type: none"> • Tools (e.g., English rulers [to the nearest one-sixteenth of an inch], metric rulers [to the nearest millimeter], thermometers, scales, hand lenses, microscopes, balances, clocks, calculators, anemometers, rain gauges, barometers, hygrometers, telescopes, compasses, spring scales) • Types of data (e.g., linear measures, mass, volume, temperature, time, area, perimeter) • Resources (e.g., Internet, electronic encyclopedias, journals, community resources, etc.) <p>1d. Analyze data collected from a scientific investigation to construct explanations and draw conclusions. (DOK 3)</p> <p>1e. Communicate scientific procedures and</p>	<p>Week 20 & Week 21 January 8-12, 2018 January 15-19, 2018</p>



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		conclusions using diagrams, charts, tables, graphs, maps, written explanations, and/or scientific models. (DOK 2)	
Scientific Inquiry	1g	1g. Evaluate results of different data (whether trivial or significant)	Week 20 & Week 21 January 8-12, 2018 January 15-19, 2018
Scientific Inquiry	1h	1h. Infer and describe alternate explanations and predictions	Week 20 & Week 21 January 8-12, 2018 January 15-19, 2018
Earth and Space Science	4a	4a. Compare and contrast the relative positions and components of the Earth's crust (e.g., mantle, liquid and solid core, continental crust, oceanic crust). (DOK 1)	Week 22 January 22-26, 2018
Earth and Space Science	4b	4b. Draw conclusions about historical processes that contribute to the shaping of planet Earth. (DOK 3) <ul style="list-style-type: none"> • Movements of the continents through time • Continental plates, subduction zones, trenches, etc. 	Week 23 January 29-February 2, 2018
Earth and Space Science	4d, 4g E.5.10.1 E.5.10.2	4d. Summarize the causes and effects of pollution on people and the environment (e.g., air pollution, ground pollution, chemical pollution) and justify how and why pollution should be minimized. (DOK 1) 4g. Research and cite evidence of current resources in Earth's systems. (DOK 3) <ul style="list-style-type: none"> • Resources such as fuels, metals, fresh water, wetlands, and farmlands • Methods being used to extend the use of Earth's resources through recycling, reuse, and renewal • Factors that contribute to and result from runoff (e.g., water cycle, groundwater, drainage basin (watershed)) 	Week 24 February 5-9, 2018
Earth and Space Science	4e, 4f	4e. Explain the daily and annual changes in the Earth's rotation and revolution. (DOK 2) <ul style="list-style-type: none"> • How the positions of the moon and the sun affect tides • The phases of the moon (e.g., new, crescent, half, gibbous, full, waxing, waning) 	Week 25 February 12-16, 2018



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		<p>4f. Differentiate between objects in the universe (e.g., stars, moons, solar systems, asteroids, galaxies). (DOK 1)</p>	
Earth and Space Science	4c	<p>4c. Analyze climate data to draw conclusions and make predictions. (DOK 2)</p>	<p>Week 26 February 19-23, 2018</p>
Earth and Space Science	1a-1h, 4a, 4b, 4c, 4d, 4e, 4f, 4g	<p>Review of Multiple Skills: 1a-1h, 4a, 4b, 4c, 4d, 4e, 4f, and 4g</p>	<p>Week 27 February 26-March 2, 2018</p>
		Comprehensive 3rd 9 Weeks Assessment	March 6-9, 2018