5th Grade Science Pacing Guide

1st NINE WEEKS				
Obj	**Benchmarks**	**Instructional Strategies**	**Grade Level Assessment**	**Notes**
1a	Design a fair scientific investigation, including analyzing data, forming conclusions, manipulating variables, & using experimental controls. (advanced)(DOK 2) • TSW form a hypothesis, predict outcomes, and conduct a fair investigation that includes manipulating variables and using experimental controls (DOK 3) • Identify the components of a fair investigation (hypothesis, prediction or outcome, manipulating variables, or experimental control) (Basic)	Lecture, application, explanations, questioning, research, experimentation, data analysis, deduct results into summarization	Peer evaluation, self check, questioning, teacher observations	
1b	Distinguish between observations and inferences. (Proficient) DOK 2	Lecture, Application, explanations, questioning, research, data analysis, Compare & contrast, critique, infer, differentiate	Peer evaluation, self check, questioning, observations, demonstration	
1c **5.NBT.3	Use precise measurement in conjunction with simple tools and technology to perform tests and collect data. (Proficient) (DOK 2) • USE tools (rulers, thermometers, scales, hand lenses, microscopes, balances, clocks, calculators, anemometers, rain gauges, barometers, hygrometers • Analyze data for height, mass, temperature, length, time, distance, volume, distance, perimeter, area • Identify a simple tools and its associated unit of measurement used to collect data • ***interpret a fraction as a division of the numerator by the denominator***	Predict the outcome, estimate, manipulate materials, compare and contrast results, design and create charts and graphs	Peer evaluations, self check, questioning, observations, quiz	
1d	Use justify a conclusion based on data (advanced) • Organize and interpret data in tables and graphs to construct explanations and draw conclusions. (proficient) (DOK 2)	Conclude, identify, justify	Peer evaluation, self check, questioning, check list	
1e	Use drawings, tables, graphs, and written and oral language to describe objects and explain ideas and actions. (Proficient) (DOK 2)	Compare & Contrast, Summarize	Peer evaluations, Teacher observations, explain & summarize the results	
1f	Make and compare different proposals when designing a solution or product. (Proficient) (DOK 2)	Review different ways to do this activity, infer, illustrate, transfer ideas into products	Peer evaluations, teacher checklists and observations, student justifications	
1	Justify that the data are significant (Advanced)			
	EARTH SCIENCE			
4a 2b	Categorize Earth's materials. (proficient) (DOK 1) *(*Note; refer to Pangaea and how the earth looked at the beginning of time.* • Layers of earth; atmosphere, lithosphere, biosphere, and hydrosphere • Examples for each of the above; rocks, minerals, soils, water, and atmospheric gases Identify Earth's materials (basic) *(Touch on layers of the earth; use periodic table if you choose to identify the elements that are found in our Earth) atmospheric gases. •	Lecture, Modeling, illustrations, summarize	Self-check, paraphrase, quiz	

4e 4c	Compare the movement patterns of the Earth around the sun over a specific period of time. (rotation & revolution) • To make things relevant to specifics that they already know (continents and oceans) TSW analyze the reasons for the days' decreasing daylight, as well as the increased heat. (days/seasons/time) • Weather changes from day to day and over the seasons. (seasons, climates)	Modeling, lecture, demonstration, smart board activities, student role-play	Questioning, observation, predictions, self-check, peer check	

4b	Explain how constructive processes combine with destructive processes to create certain land features: (advanced) • Explain how surface features caused by constructive processes (e.g., depositions, volcanic eruptions, earthquakes) differ from destructive processes (erosion, weathering, impact of organisms) (proficient) (DOK 2)*(note: include how volcanoes are both constructive and destructive; explain how waves and water can be both, as well. • Identify surface features formed from constructive or destructive forces. (BASIC)	Internet; websites, landforms Illustrations, power point presentations on formation of Grand Canyon, sandbars, islands, atolls, etc….	Self-check, peer check, compare & contrast, research activities	
4d 4g	Critique ways to conserve natural resources. (advanced) • Describe changes caused by humans on environment and natural resources and cite evidence from research 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; (proficient) (DOK 2) • Agricultural, Wildlife, Water (rivers) • Conclude that the supply of many Earth resources (e.g. fuels, metals, fresh water, and farmland) is limited and critique a plan to extend the use of the Earth's resources (e.g. recycling, reuse, renewal) • *Note (how agriculture has changed by no till farming, terrace farming, strip farming)(regulations for applying herbicides, pesticides, and fertilizers for farmers and crop dusters) • Review the Cycles in Nature: carbon/oxygen; nitrogen; water cycles • Tie into Global Warming, changes In our Global Climate, and lack of usable water in our world	Guest speakers, web sites, power point, National Geographic Explorers	Self-check, peer check, research, cause & effect	
4c 1c	Predict the weather based on season and collected data. (advanced) Use precise measurement in conjunction with simple tools and technology to perform tests and collect data. (DOK1) A. Weather changes from day to day and over the seasons. B. Tools by which weather is observed, recorded, and predicted. C. Identify tools for collecting weather data. (basic) D. **Read, write, and compare decimals	Inquiry, smart board, websites, videos, modeling, map skills	Data collection, quiz on current weather on a map	
4e 1d 2f	Compare the movement patterns of the moon around the Earth to the movement pattern of the Earth around the Sun over a specific time period. (advanced) • Predict the movement patterns of the sun, moon, and Earth over a specified time period. (proficient) (DOK 1) • Identify the location of the Sun, moon, or Earth at a specific time period. (Basic)	Experiment, role play, websites, compare and contrast		
1d 2f	Organize and interpret data in tables and graphs to construct explanations and draw conclusions. Describe physical properties of matter (e.g., mass, density, boiling point, freezing point) including mixtures and solutions.			

2nd Nine Weeks / Life Science				
3b	Research and classify the organization of living things. (proficient) (DOK 2) • Differences between plant and animal cells. Cells→tissues→organs→systems→organisms • Function of the major parts of body systems (nervous, circulatory, respiratory, digestive, skeletal, muscular) and the ways they support one another Examples of organisms as single-celled or multi-celled.	Lecture, websites, posters, national geographic explorers, modeling		
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. (DOK3)	Lecture, websites,, posters, modeling, power points, research, presentations, read and discuss research, biographies and reports.	Self-check, peer check, compare & contrast, research activities, test	
3a	Predict characteristics, structures, life cycles, environments, evolution, and diversity of organisms. Predict how structural or behavioral adaptations of an organism will allow organisms to continue living in a changing environment. (advanced) • Compare and contrast the diversity of organisms due to adaptations to show how organisms have evolved as a result of environmental changes. (Proficient) (DOK 2) • 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 (3.g., cacti, needles, leaves, fur, scales0 • Evidence of fossils as indicators of how life and environmental conditions have changed • Identify the adaptation that allows an organism to live in their particular environment (basic) ** *note; use the taxonomy of an animal, such as the horse to show how it has changed; important people in science; functions of cells; compare and contrast plants & animals, as well as their unique adaptations for survival*	Photographs, websites, posters, animal classification, data analysis	Questioning, observation, self-check, peer evaluation, quiz, test.	
3e	Give examples of how consumers and producers (carnivores, herbivores, omnivores, and decomposers) are related in food chains and food webs. Predict how possible changes in the food web or environment will affect the flow of energy.	Modeling, simulations, data tables, graphs, internet, drawings, construct	Questioning, observation, self-check, peer evaluation, quiz, test.	
3d 3a	Distinguish between asexual and sexual reproduction. * asexual reproduction processes in plants and fungi (e.g., vegetable propagation in stems, roots, and leaves of plants, budding yeasts, fruiting bodies in fungi) *Plant classification (vascular, nonvascular) and plant survival (reproduction) * asexual cell division (mushroom spores produced/dispersed) * sexual reproduction (e.g., eggs, seeds, fruit) *animals/inherited traits/adaptations	Lecture, compare and contrast, predict outcomes, illustrations, internet, power point presentations	Questioning, observation, self-check, quiz, test.	
2a 2b	Understand the relationships of the properties of objects and materials, position and motion of objects, and transfer of energy to explain the physical world. • Determine how the properties of an object affect how it acts and interacts based on its properties. Physical and Chemical Properties *Classify properties • Differentiate between elements, compounds, and mixtures and between chemical and physical changes (e.g., gas evolves, color, and/or temperature changes) ○ Periodic Table of elements (differentiate between physical and chemical changes.	Predict, mixtures, solution, compound activities, periodic table, charts, manipulatives, experiments	TO, questioning, peer evaluation, self-check, demonstrations	

3rd Nine Weeks / Physical Science				
1c 2a 2f 2b	Use precise measurement in conjunction with simple tools and technology to perform tests and collect data. (Proficient) (DOK 2) • USE tools (rulers, thermometers, scales, hand lenses, microscopes, balances, clocks, calculators, anemometers, rain gauges, barometers, hygrometers • Analyze data for height, mass, temperature, length, time, distance, volume, distance, perimeter, area • Determine how the properties of an object affect how it acts and interacts. Describe physical properties of matter (e.g., mass, density, boiling point, freezing point) including mixtures and solutions. * filtration, sifting, magnetism, evaporation & flotation * mass, density, boiling point, & freezing point of matter * effects of temperature changes on the solubility of substances (measurement) Chemical Changes • Differentiate between elements, compounds, and mixtures and between chemical and physical changes (e.g., gas evolves, color, and/or temperature changes)		TO, questioning, peer evaluation, self-check, demonstrations	
2d 1c	Energy • 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) • Use precise measurement in conjunction with simple tools and technology to perform tests and collect data. (Rulers, etc.)	Charts, graphs, experiments, demonstrations, energy activities	TO, questioning, peer evaluation, self-check, summarize results, quiz	
1c 2c	Forces and motion • Use precise measurement in conjunction with simple tools and technology to perform tests and collect data. (Rulers, etc.) • Investigate the motion of an object in terms of its position, direction of motion, and speed. * 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 objects motion in terms of speed and direction.			
2e	Differentiate between the properties of a light as reflection, refraction, and absorption. * image reflected by a plane mirror and a curved-surface mirror * Light passing through air or water * optical tools such as prisms, lenses, mirrors, and eyeglasses	Illustrations, power point, videos, activities	Observation, quiz, peer/self-check, compare, assessments.	
2g	Categorize materials as conductors or insulators and discuss their real life applications (e.g., building construction, clothing, animal covering).	Construct or create an electrical circuit, test/evaluate conductors and/insulators, make prediction, classify objects, create graphs	Compare and discuss, self-evaluate, observation, quiz/assessments	

4th Nine Weeks / Remediation