Crosswalk 2010 MS Science - 2018 MS CCRS for Science
Inquiry Strand Grade 3

2010 MS Framework G3 - Inquiry	**2018 MS CCRS for Science - all grades and courses**
Competency 1. Apply concepts involved in a scientific investigation.	All Inquiry skills will be taught in the appropriate performance objectives in the new standards. Students will use various Science and Engineering Practices (SEPs) to learn the content. All science skills should be included as needed.
1a. Identify questions and predict outcomes that can be examined through scientific investigations.	
1b. Describe familiar objects and events using the senses to collect qualitative (e.g., color, size, shape) information.	
1c. Select and use simple tools (e.g., rulers, thermometers, scales, hand lenses, microscopes, calculators, balances, clocks) to gather information. • Length, to the nearest half of an inch, foot, yard, centimeter, and meter • Capacity and weight/mass, in English and metric systems • Time, to the nearest minute • Temperature, to the nearest degree	
1 d. Draw conclusions and communicate the results of an investigation.	
1e. Communicate data by creating diagrams, charts, tables, and graphs.	
1f. Ask questions and seek answers to explain why different results sometimes occur in repeated investigations.	

Crosswalk 2010 MS Science - 2018 MS CCRS for Science
Life Science Grade 3

2010 MS Framework G3 – Life Science	**2018 MS CCRS for Science G3 – Life Science**
Competency 3. Describe the characteristics, structures, life cycles, and environments of organisms	**Standard statements are in bold font below.**
3a. Research and explain diverse life forms (including vertebrates and invertebrates) that live in different environments (e.g., deserts, tundras, forests, grasslands, taigas, wetlands) and the structures that serve different functions in their survival; (e.g., methods of movement, defense, camouflage).	**L.3.1 Students will demonstrate an understanding of internal and external structures in plants and animals and how they relate to their growth, survival, behavior, and reproduction within an environment.** L.3.1.1 Examine evidence to communicate information that the internal and external structures of animals (e.g., heart, stomach, bone, lung, brain, skin, ears, appendages) function to support survival, growth, and behavior. L.3.1.2 Examine evidence to communicate information that the internal and external structures of plant (e.g., thorns, leaves, stems, roots, or colored petals) function to support survival, growth, behavior, and reproduction. L.3.1.3 Obtain and communicate examples of physical features or behaviors of vertebrates and invertebrates and how these characteristics help them survive in particular environments, (e.g., animals hibernate, migrate, or estivate to stay alive when food is scarce or temperatures are not favorable).
3b. Identify and describe the purpose of the digestive, nervous, skeletal, and muscular systems of the body.	*See L.3.1.1 above*

2010 MS Framework G3 – Life Science	**2018 MS CCRS for Science G3 – Life Science**
3c.Investigate the relationships between the basic needs of different organisms and discern how adaptations enable an organism to survive in a particular environment.	**L.3.4 Students will demonstrate an understanding of how adaptations allow animals to satisfy life needs and respond both physically and behaviorally to their environment.** L.3.4.1 Obtain data from informational text to explain how changes in habitats (both those that occur naturally and those caused by organisms) can be beneficial or harmful to the organisms that live there. L.3.4.2 Ask questions to predict how natural or man-made changes in a habitat cause plants and animals to respond in different ways, including hibernating, migrating, responding to light, death, or extinction (e.g., sea turtles, the dodo bird, or nocturnal species). L.3.4.3 Analyze and interpret data to explain how variations in characteristics among organisms of the same species may provide advantages in surviving, finding mates, and reproducing (e.g., plants with larger thorns being less likely to be eaten by predators or animals with better camouflage colorations being more likely to survive and bear offspring). L.3.4.4 Define and improve a solution to a problem created by environmental changes and any resulting impacts on the types of density and distribution of plant and animal populations living in the environment (e.g., replanting sea oats in coastal areas or developing or preserving wildlife corridors and green belts). Use an engineering design process to define the problem, design, construct, evaluate, and improve the environment.* L.3.4.5 Construct scientific argument using evidence from fossils of plants and animals that lived long ago to infer the characteristics of early environments (e.g., marine fossils on dry land, tropical plant fossils in arctic areas, or fossils of extinct organisms in any environment).
3d. Illustrate how the adult animal will look, when given pictures of young animals (e.g., birds, fish, cats, frogs, caterpillars, etc.)	*Expanded and moved to Kindergarten (L.K.2.4)*

2010 MS Framework G3 – Life Science	**2018 MS CCRS for Science G3 – Life Science**
3e. Recall that organisms can survive only when in environments (deserts, tundras, forests, grasslands, taigas, wetlands) in which their needs are met and interpret the interdependency of plants and animals within a food chain, including producer, consumer, decomposer, herbivore, carnivore, omnivore, predator, and prey.	*Expanded and moved to Grade 5 (L.5.3B)*
3f. Recognize that cells vary greatly in size, structure, and function, and that some cells and tiny organisms can be seen only with a microscope.	*Expanded and moved to Grade 6 (L.6.1)*
Similar concepts previously taught in Grade 4	**L.3.2 Students will demonstrate an understanding that through reproduction, the survival and physical features of plants and animals are inherited traits from parent organisms but can also be influenced by the environment.** L.3.2.1 Identify traits and describe how traits are passed from parent organism(s) to offspring in plants and animals. L.3.2.2 Describe and provide examples of plant and animal offspring from a single parent organism (e.g., bamboo, fern, or starfish) as being an exact replica with identical traits as the parent organism. L.3.2.3 Describe and provide examples of offspring from two parent organisms as containing a combination of inherited traits from both parent organisms. L.3.2.4 Obtain and communicate data to provide evidence that plants and animals have traits inherited from both parent organisms and that variations of these traits exist in groups of similar organisms (e.g., flower colors in pea plants or fur color and pattern in animal offspring). L.3.2.5 Research to justify the concept that traits can be influenced by the environment (e.g., stunted growth in normally tall plants due to insufficient water, changes in an arctic fox's fur color due to light and/or temperature, or flamingo plumage).

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Physical Science Grade 3

2010 MS Framework G3 – Physical Science	**2018 MS CCRS for Science G3 – Physical Science**
Competency 2. Explain concepts related to objects and materials, position and motion of objects, and properties of magnetism.	**Standard statements are in bold font below.**
2a. Investigate to conclude that the weight of an object is always the sum of its parts, regardless of how it is assembled, (e.g., Lego creation/separate blocks, bucket/cups of sand, roll/stacks of pennies, bag/individual potatoes, etc.)	*Expanded and moved to Grade 2 (P.2.5.3)*
2b. Explore and identify physical changes of matter, including melting, freezing, boiling, evaporation, and condensation	**P.3.5 Students will demonstrate an understanding of the physical properties of matter to explain why matter can change states between a solid, liquid, or gas dependent upon the addition or removal of heat.** P.3.5.1 Plan and conduct scientific investigations to determine how changes in heat (i.e., an increase or decrease) change matter from one state to another (e.g., melting, freezing, condensing, boiling, or evaporating). P.3.5.2 Develop and use models to communicate the concept that matter is made of particles too small to be seen that move freely around in space (e.g., inflation and shape of a balloon, wind blowing leaves, or dust suspended in the air). P.3.5.3 Plan and conduct investigations that particles speed up or slow down with addition or removal of heat.

2010 MS Framework G3 – Physical Science	**2018 MS CCRS for Science G3 – Physical Science**
2c. Investigate and describe forces affecting motion in simple machines (lever, wheel and axle, block and tackle, inclined plane, screw.)	**P.3.6 Students will demonstrate an understanding of magnets and the effects of pushes, pulls, and friction on the motion of objects.** P.3.6.1 Compare and contrast the effects of different strengths and directions of forces on the motion of an object (e.g., gravity, polarity, attraction, repulsion, or strength). P.3.6.2 Plan an experiment to investigate the relationship between a force applied to an object (e.g., friction, gravity) and resulting motion of the object. P.3.6.3 Research and communicate information to explain how magnets are used in everyday life. P.3.6.4 Define and solve a simple design problem by applying scientific ideas about magnets (e.g., can opener, door latches, paperclip holders, finding studs in walls, magnetized paint). Use an engineering design process to define the problem, design, construct, evaluate, and improve the magnet.* **[Forces are the emphasis but not specific simple machines]**
2d.Differentiate between potential and kinetic energy and recognize their conversions. • Potential to kinetic (e.g., winding a clock/clock begins ticking) • Kinetic to potential (e.g., roller coaster moving downward/upward	*Expanded and moved to Grade 5 (P.5.5.6)*
2e. Explain how light waves travel (e.g., in a straight line until they strike an object, through transparent and translucent objects, from reflecting and refracting surfaces, at the surface of opaque objects).	*Expanded and moved to Grade 4 (P.4.6B)*
2f. Differentiate the movement of vibrations in waves (e.g., sound and seismic waves), and cite examples to explain that vibrations move through different materials at different speeds.	*Expanded and moved to Grade 4 (P.4.6A)*

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Physical Science Grade 3

2010 MS Framework G3 – Physical Science	**2018 MS CCRS for Science G3 – Physical Science**
2g. Cite evidence to explain why heating or cooling may change the properties of materials (e.g., boiling an egg, evaporating water, chilling gelatin, making ice cream, etc.)	*See above P.3.5*

2010 MS Framework G3 – Earth Science	**2018 MS CCRS for Science G3 – Earth Science**
Competency 4: Develop an understanding of the properties of Earth materials, objects in the sky, and changes in Earth and sky.	**Standard statements are in bold font below.**
4a. Recall that soil is made up of various materials (weathered rock, minerals, plant and animal remains, living organisms.)	*See E.3.7A below*
4b. Compare and contrast changes in the Earth's surface that are due to slow processes (erosion, weathering, mountain building) and rapid processes (landslides, volcanic eruptions, earthquakes, floods, asteroid collisions).	**E.3.7B Students will demonstrate an understanding of the composition of Earth and the processes which change Earth's landforms.** E.3.7B.1 Obtain and evaluate scientific information (e.g. using technology) to describe the four major layers of Earth and the varying compositions of each layer. E.3.7B.2 Develop and use models to describe the characteristics of Earth's continental landforms and classify landforms as volcanoes, mountains, valleys, canyons, planes, and islands. E.3.7B.3 Develop and use models of weathering, erosion, and deposition processes which explain the appearance of various Earth features (e.g., the Grand Canyon, Arches National Park in Utah, Plymouth Bluff in Columbus, or Red Bluff in Marion County, Mississippi). E.3.7B.4 Compare and contrast constructive (e.g., deposition, volcano) and destructive (e.g., weathering, erosion, earthquake) processes of the Earth.
4c. Gather and display local weather information such as temperature, precipitation, clouds, etc., on graphs and use graphs of weather patterns to predict weather conditions. • Instruments (wind vane, rain gauge, thermometers, anemometers, and barometers) • Cloud types (cirrus, stratus, cumulus) • Water cycle (evaporation, precipitation, condensation)	*Expanded and moved to Grade 4 (E.4.9A and E.4.9B)*

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Earth Science Grade 3

2010 MS Framework G3 – Earth Science	**2018 MS CCRS for Science G3 – Earth Science**
4d. Identify the causes and effects of various types of air, land, and water pollution and infer ways to protect the environment.	**E.3.10 Students will demonstrate an understanding that all materials, energy, and fuels that humans use are derived from natural sources.** E.3.10.1 Identify some of Earth's resources that are used in everyday life such as water, wind, soil, forests, oil, natural gas, and minerals and classify as renewable or nonrenewable. E.3.10.2 Obtain and communicate information to exemplify how humans attain, use, and protect renewable and nonrenewable Earth resources. E.3.10.3 Use maps and historical information to identify natural resources in the state connecting (a) how resources are used for human needs and (b) how the use of those resources impacts the environment. E.3.10.4 Design a process for cleaning a polluted environment (e.g., simulating an oil spill in the ocean or a flood in a city and creating a solution for containment and/or cleanup). Use an engineering design process to define the problem, design, construct, evaluate, and improve the environment.*
4e. Identify patterns in the phases of the moon, describe their sequence, and predict the next phase viewed in the night sky.	*Expanded and moved to Grade 5 (E.5.8B)*
4f. Describe the different components of the solar system (sun, planets, moon, asteroids, comets.) • Gravitational attraction of the sun • Phases of the moon • Constellations	*Expanded and moved to Grade 5 (E.5.8A and E.5.8B)*

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Earth Science Grade 3

2010 MS Framework G3 – Earth Science	**2018 MS CCRS for Science G3 – Earth Science**
4g. Explain how fossil records are used to learn about the past, identify characteristics of selected fossils, and describe why they may be found in many places. • The Earth Science Museum at the Petrified Forest in Flora, MS • The Natural Science Museum in Jackson, MS	**E.3.7A Students will demonstrate an understanding of the various processes involved in the rock cycle, superposition of rock layers, and fossil formation.** E.3.7A.1 Plan and conduct controlled scientific investigations to identify the processes involved in forming the three major types of rock, and investigate common techniques used to identify them. E.3.7A.2 Develop and use models to demonstrate the processes involved in the development of various rock formations, including superposition, and how those formations can fracture and move over time. E.3.7A.3 Ask questions to generate testable hypotheses regarding the formation and location of fossil types, including their presence in some sedimentary rock.
Similar concepts previously taught in Grade 5	**E.3.9 Students will demonstrate an understanding of how the Earth's systems (i.e., geosphere, hydrosphere, atmosphere, and biosphere) interact in multiple ways to affect Earth's surface materials and processes.** E.3.9.1 Develop models to communicate the characteristics of the Earth's major systems, including the geosphere, hydrosphere, atmosphere, and biosphere (e.g., digital models, illustrations, flip books, diagrams, charts, tables). E.3.9.2 Construct explanations of how different landforms and surface features result from the location and movement of water on Earth's surface (e.g., watersheds, drainage basins, deltas, or rivers). E.3.9.3 Use graphical representations to communicate the distribution of freshwater and saltwater on Earth (e.g., oceans, lakes, rivers, glaciers, groundwater, or polar ice caps).