

**Crosswalk 2010 MS Science - 2018 MS CCRS for Science
Inquiry Strand Grade 2**

2010 MS Framework G2 - Inquiry	2018 MS CCRS for Science - all grades and courses
Competency 1. Develop abilities necessary to conduct scientific investigations.	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. Formulate questions about objects and organisms and predict outcomes in order to conduct a simple investigation.	
1b. Compare, sort, and group objects according to two or more attributes.	
1c. Use simple tools (e.g., rulers, thermometers, scales, hand lenses, microscopes, balances, clocks) to gather information. <ul style="list-style-type: none"> • Length, to the nearest inch, foot, yard, centimeter, and meter • Capacity, to the nearest ounce, cup, pint, quart, gallon, and liter • Weight, to the nearest ounce, pound, gram, and kilogram • Time, to the nearest hour, half-hour, quarter-hour, and five-minute intervals (using digital and analog clocks) 	
1d. Collect and display technological products (e.g., zipper, coat hook, ceiling fan pull chain, can opener, bridge, apple peeler, wheel barrow, nut cracker, etc.) to determine their function.	
1e. Create line graphs, bar graphs, and pictographs to communicate data.	
1f. Infer that science investigations generally work the same way in different places.	

**Crosswalk 2010 MS Science - 2018 MS CCRS for Science
Life Science Grade 2**

2010 MS Framework G2 – Life Science	2018 MS CCRS for Science G2 - Life Science
Competency 3. Develop and demonstrate an understanding of the characteristics, structures, life cycles, and environments of organisms.	Standard statements are in bold font below.
<p>3a. Describe and categorize the characteristics of plants and animals.</p> <ul style="list-style-type: none"> • Plant parts (leaves, stems, roots, and flowers) • Animals (vertebrates or invertebrates, cold-blooded or warm-blooded) 	<p>L.2.1 Students will demonstrate an understanding of the classification of animals based on physical characteristics.</p> <p>L.2.1.1 Compare and sort groups of animals with backbones (vertebrates) from groups of animals without backbones (invertebrates).</p> <p>L.2.1.2 Classify vertebrates (mammals, fish, birds, amphibians, and reptiles) based on their physical characteristics.</p> <p>L.2.1.3 Compare and contrast physical characteristics that distinguish classes of vertebrates (i.e., reptiles compared to amphibians).</p> <p>L.2.1.4 Construct a scientific argument for classifying vertebrates that have unusual characteristics, such as bats, penguins, snakes, salamanders, dolphins, and duck-billed platypuses (i.e., bats have wings yet they are mammals).</p> <p>[Plants are emphasized in Grade 1]</p>
<p>3b. Describe the human body systems with their basic functions and major organs (e.g., brain-nervous, bones-skeletal, muscles-muscular).</p>	<p><i>Human systems expanded and moved to Grade 4 (L.4.1); animal systems expanded and moved to Grade 3(L.3.1)</i></p>
<p>3c. Identify the cause/effect relationships when basic needs of plants and animals are met and when they are not met.</p>	<p>L.2.3A Students will demonstrate an understanding of the interdependence of living things and the environment in which they live.</p> <p>L.2.3A.1 Evaluate and communicate findings from informational text or other media to describe how animals change and respond to rapid or slow changes in their environment (fire, pollution, changes in tide, availability of food/water).</p> <p>L.2.3A.2 Construct scientific arguments to explain how animals can make major changes (e.g., beaver dams obstruct streams, or large deer populations destroying crops) and minor changes to their environments (e.g., ant hills, crawfish burrows, mole tunnels). Communicate findings.</p>

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<p>3d. Compare the life cycles of plants and animals.</p>	<p>L.2.2 Students will demonstrate an understanding of how living things change in form as they go through the general stages of a life cycle. L.2.2.1 Use observations through informational texts and other media to observe the different stages of the life cycle of trees (i.e., pines, oaks) to construct explanations and compare how trees change and grow over time. L.2.2.2 Construct explanations using first-hand observations or other media to describe the life cycle of an amphibian (birth, growth/development, reproduction, and death). Communicate findings.</p>
<p>3e. Investigate and explain the interdependence of plants and animals.</p> <ul style="list-style-type: none"> • Herbivore, carnivore, or omnivore • Predator-prey relationships 	<p>L.2.3B Students will demonstrate an understanding of the interdependence of living things. L.2.3B.1 Evaluate and communicate findings from informational text or other media to describe and to compare how animals interact with other animals and plants in the environment (i.e., predator-prey relationships, herbivore, carnivore, omnivore). L.2.3B.2 Conduct an investigation to find evidence where plants and animals compete or cooperate with other plants and animals for food or space. Present findings (i.e., using technology or models).</p>
<p><i>Similar concepts previously taught in Grade 3</i></p>	<p>L.2.4 Students will demonstrate an understanding of the ways animals adapt to their environment in order to survive. L.2.4.1 Evaluate and communicate findings from informational text or other media to describe how plants and animals use adaptations to survive (e.g., ducks use webbed feet to swim in lakes and ponds, cacti have waxy coatings and spines to grow in the desert) in distinct environments (e.g., polar lands, saltwater and freshwater, desert, rainforest, woodlands). L.2.4.2 Create a solution exemplified by animal adaptations to solve a human problem in a specific environment (e.g., snowshoes are like hare’s feet or flippers are like duck’s feet). Use an engineering design process to define the problem, design, construct, evaluate, and improve the solution.*</p>

**Crosswalk 2010 MS Science - 2018 MS CCRS for Science
Physical Science Grade 2**

2010 MS Framework G2 – Physical Science	2018 MS CCRS for Science G2 – Physical Science
<p>Competency 2. Apply an understanding of properties of objects and materials, position and motion of objects, and properties of magnetism.</p>	<p>Standard statements are in bold font below.</p>
<p>2a. Investigate to conclude that when water changes to ice and then melts, the amount of water is the same as it was before freezing</p>	<p>P.2.5 Students will demonstrate an understanding of the properties of matter.</p> <p>P.2.5.1 Conduct a structured investigation to collect, represent, and analyze categorical data to classify matter as solid, liquid, or gas. Report findings and describe a variety of materials according to observable physical properties (e.g., size, color, texture, opacity, solubility).</p> <p>P.2.5.2 Compare and measure the length of solid objects using technology and mathematical representations. Analyze and communicate findings.</p> <p>P.2.5.3 Compare the weight of solid objects and the volume of liquid objects. Analyze and communicate findings.</p> <p>P.2.5.4 Construct scientific arguments to support claims that some changes to matter caused by heating can be reversed, and some changes cannot be reversed.</p>
<p>2b. Investigate and describe properties and changes of matter.</p> <ul style="list-style-type: none"> • Unique properties of states of (Gases are easily compressed while solids and liquids are not; the shape of a solid is independent of its container; liquids and gases take the shape of their containers.) • Physical changes (e.g., boiling liquids, freezing ice, tearing paper) • Chemical changes (e.g., burning wood, making ice cream, cooking an egg) 	<p><i>See P.2.5 above</i></p>

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<p>2c. Describe observable effects of forces, including buoyancy, gravity, and magnetism.</p>	<p>P.2.6 Students will demonstrate an understanding of how the motion of objects is affected by pushes, pulls, and friction on an object.</p> <p>P.2.6.1 Conduct a structured investigation to collect, represent, and analyze data from observations and measurements to demonstrate the effects of pushes and pulls with different strengths and directions. Communicate findings (e.g., models or technology).</p> <p>P.2.6.2 Generate and answer questions about the relationship between (1) friction and the motion of objects and (2) friction and the production of heat.</p> <p>P.2.6.3 Develop a plan to change the force (push or pull) of friction to solve a human problem (e.g., improve the ride on a playground slide or make a toy car or truck go faster). Use an engineering design process to define the problem, design, construct, evaluate, and improve the plan.*</p> <p>[Buoyancy is emphasized in Grade 5 (P.5.5A); gravity and magnetism are emphasized in Grade 3 (P.3.6)]</p>
<p>2d. Classify materials that are or are not attracted to magnets and cite examples of useful magnetic tools in everyday living (e.g., can opener, compass, refrigerator door seal).</p>	<p><i>Expanded and moved to grade 3 (P.3.6)</i></p>
<p>2e. Recognize that an object can be seen only if either light falls on it or it emits light, and that color is a property of light.</p>	<p><i>Expanded and moved to grade 1 (P.1.6A)</i></p>
<p>2f. Compare and classify solids, liquids, and gasses.</p>	<p><i>See P.2.5 above</i></p>
<p>2g. Identify vibration as the source of sound and categorize different types of media (e.g., wood, plastic, water, air, metal, glass) according to how easily vibrations travel.</p>	<p><i>Expanded and moved to grade 1 (P.1.6B)</i></p>

**Crosswalk 2010 MS Science - 2018 MS CCRS for Science
Earth Science Grade 2**

2010 MS Framework G2 - Earth Science	2018 MS CCRS for Science G2 – Earth Science
Competency 4. Develop an understanding of the properties of Earth materials, objects in the sky, and changes in Earth	Standard statements are in bold font below.
4a. Categorize different types of Earth materials, (e.g., rocks, minerals, soils, water, atmospheric gases).	<p>E.2.10 Students will demonstrate an understanding of how humans use Earth’s resources.</p> <p>E.2.10.1 Use informational text, other media, and first-hand observations to investigate, analyze and compare the properties of Earth materials (including rocks, soils, sand, and water).</p> <p>E.2.10.2 Conduct an investigation to identify and classify everyday objects that are resources from the Earth (e.g., drinking water, granite countertops, clay dishes, wood furniture, or gas grill). Classify these objects as renewable and nonrenewable resources.</p> <p>E.2.10.3 Use informational text and other media to summarize and communicate how Earth materials are used (e.g., soil and water to grow plants; rocks to make roads, walls or building; or sand to make glass).</p> <p>E.2.10.4 Use informational text, other media, and first-hand observations to investigate and communicate the process and consequences of soil erosion.</p> <p>E.2.10.5 With teacher guidance, investigate possible solutions to prevent or repair soil erosion.</p>
4b. Describe the three layers of the Earth.	<i>Expanded and moved to Grade 3 (E.3.7B)</i>
4c. Collect, organize, and graph weather data obtained by using simple weather instruments (wind vane, rain gauge, thermometer) and explain the components of the water cycle.	<i>Expanded and moved to Grade 4 (E.4.9A and E.4.9B)</i>
4d. Distinguish how actions or events related to the Earth’s environment may be harmful or helpful.	<i>Expanded and moved to Grade 3 (E.3.10)</i>

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<p>4e. Model and explain the concept of Earth’s rotation as it relates to day and night and infer why it is usually cooler at night than in the day.</p>	<p>E.2.8 Students will demonstrate an understanding of the appearance, movements, and patterns of the sun, moon, and stars.</p> <p>E.2.8.1 Recognize that there are many stars that can be observed in the night sky and the Sun is the Earth’s closest star.</p> <p>E.2.8.2 With teacher guidance, observe, describe, and predict the seasonal patterns of sunrise and sunset. Collect, represent, and interpret data from internet sources to communicate findings.</p> <p>E.2.8.3 Observe and compare the details in images of the moon and planets using the perspective of the naked eye, telescopes, and data from space exploration.</p> <p>E.2.8.4 With teacher support, gain an understanding that scientists are humans who use observations and experiments to learn about space. Obtain information from informational text or other media about scientists who have made important discoveries about objects in space (e.g., Galileo Galilei, Johannes Kepler, George Ellery Hale, Jill Tarter) or the development of technologies (e.g., various telescopes and detection devices, computer modeling, and space exploration).</p> <p>E.2.8.5 Use informational text and other media to observe, describe and predict the visual patterns of motion of the Sun (sunrise, sunset) and Moon (phases).</p> <p>E.2.8.6 Create a model that will demonstrate the observable pattern of motion of the Sun or Moon. Use an engineering design process to define the problem, design, construct, evaluate, and improve the model.*</p>
<p>4f. Describe characteristics and effects of objects in the universe.</p> <ul style="list-style-type: none"> • Position of the sun in relation to a fixed object on Earth at various times (day and night) • The major characteristics of planets (revolution and rotation periods, size, number of moons) • Changes in the appearance of the moon 	<p><i>See E.2.8 above</i></p> <p><i>[Study of planets expanded and moved to grade 5 (E.5.8A and E.5.8B)]</i></p>