

Warren Hills Cluster

K – 8 Science Mastery Indicators

Key:
 B = Beginning to explore concept/skill
 D = In process of developing the concept/skill
 M = Demonstrates concept/skill mastery
M = Mastery as indicated by the State of New Jersey

November 2009

I. Scientific Practices

A. Understand Scientific Explanations	Pre-K Kindergarten	1	2	3	4	5	6	7	8
Display curiosity about science objects, materials, activities, and longer – term investigations in progress.	M	M	M	M	M	M	M	M	M
Demonstrate understanding of the interrelationships among fundamental concepts in the physical, life and Earth systems sciences.			B	D	M	M	M	M	M
Use outcomes of investigations to build and refine questions, models, and explanations.		B	B/D	D	M	M	M	M	M
Use scientific facts, measurements, observations, and patterns in nature to build and critique scientific arguments.		B	B/D	D	M	M	M	M	M
Demonstrate understanding and use interrelationships among central scientific concepts to revise explanations and to consider alternative explanations.						B	D	D	M
Use mathematical, physical, and computational tools to build conceptual-based models and to pose theories.						B	D	D	M
Use scientific principles and models to frame and synthesize scientific arguments and pose theories.							B	D	M
B. Generate Scientific Evidence Through Active Investigations									
Observe, question, predict, and investigate materials, objects, and phenomena (e.g., using simple tools to crack a nut and look inside) during indoor and outdoor classroom activities and during any longer-term investigations.	M	M	M	M	M	M	M	M	M
Use basic science terms and topic-related science vocabulary.	M	M	M	M	M	M	M	M	M
Identify and use basic tools and technology to extend exploration in conjunction with science investigations.	M	M	M	M	M	M	M	M	M

Scope and Sequence (continued)	Pre-K Kindergarten	1	2	3	4	5	6	7	8
Design and follow simple plans using systematic observations to explore questions and predictions.		B	B/D	D	M	M	M	M	M
Measure, gather, evaluate, and share evidence using tools and technologies.		B	B/D	D	M	M	M	M	M
Formulate explanations from evidence.			B	D	M	M	M	M	M
Communicate and justify explanations with reasonable and logical arguments.			B	D	M	M	M	M	M
Design investigations and use scientific instrumentation to collect, analyze, and evaluate evidence as part of building and revising models and explanations.						B	D	D	M
Gather, evaluate, and represent evidence using scientific tools, technologies, and computational strategies.						B	D	D	M
Use qualitative and quantitative evidence to develop evidence-based arguments.							B	D	M
Use quality controls to examine data sets and to examine evidence as a means of generating and reviewing explanations.							B	D	M
C. Reflect on Scientific Knowledge									
Communicate with other children and adults to share observations, pursue questions, and make predictions and/or conclusions.	M	M	M	M	M	M	M	M	M
Monitor and reflect on one's own knowledge regarding how ideas change over time.		B	B/D	D	M	M	M	M	M
Revise predictions or explanations on the basis of learning new information.		B	B/D	D	M	M	M	M	M
Present evidence to interpret and/or predict cause-and-effect outcomes of investigations.			B	D	M	M	M	M	M
Monitor one's own thinking as understandings of scientific concepts are refined.						B	D	D	M
Revise predictions or explanations on the basis of discovering new evidence, learning new information, or using models.							B	D	M
Generate new and productive questions to evaluate and refine core explanations.							B	D	M
D. Participate Productively in Science									
Represent observations and work through drawing, recording data, and "writing."	M	M	M	M	M	M	M	M	M

Scope and Sequence (continued)	Pre-K Kindergarten	1	2	3	4	5	6	7	8
Actively participate in discussions about student data, questions, and understandings.	B	B/D	D	D	M	M	M	M	M
Work collaboratively to pose, refine, and evaluate questions, investigations, models, and theories.		B	D	D	M	M	M	M	M
Demonstrate how to safely use tools, instruments, and supplies.			B	D	M	M	M	M	M
Handle and treat organisms humanely, responsibly, and ethically.			B	D	M	M	M	M	M
Engage in multiple forms of discussion in order to process, make sense of, and learn from others' ideas, observations, and experiences.						B	D	D	M
Engage in productive scientific discussion practices during conversations with peers, both face-to-face and virtually, in the context of scientific investigations and model-building.						B	D	D	M
Demonstrate how to safely use tools, instruments, and supplies.					B	D	D	D	M
Handle and treat organisms humanely, responsibly, and ethically.						B	D	D	M

II. Physical Science

A. Properties of Matter	Pre-K Kindergarten	1	2	3	4	5	6	7	8
Observe, manipulate, sort, and describe objects and materials (e.g., water, sand, clay, paint, glue, various types of blocks, collections of objects, simple household items that can be taken apart, or objects made of wood, metal, or cloth) in the classroom and outdoor environment based on size, shape, color, texture, and weight.	M	M	M	M	M	M	M	M	M
Sort and describe objects based on the materials of which they are made and their physical properties.	B	D	M	M	M	M	M	M	M
Identify common objects as solids, liquids, or gases.	B	D	M	M	M	M	M	M	M
Identify objects that are composed of a single substance and those that are composed of more than one substance using simple tools found in the classroom.			B	D	M	M	M	M	M
Plan and carry out an investigation to distinguish among solids, liquids, and gasses.			B	D	M	M	M	M	M

Scope and Sequence (continued)	Pre-K Kindergarten	1	2	3	4	5	6	7	8
Determine the weight and volume of common objects using appropriate tools.			B	D	M	M	M	M	M
Categorize objects based on the ability to absorb or reflect light and conduct heat or electricity.			B	D	M	M	M	M	M
Determine the volume of common objects using water displacement methods.					B	D	M	M	M
Calculate the density of objects or substances after determining volume and mass.					B	D	M	M	M
Determine the identity of an unknown substance using data about intrinsic properties.					B	D	M	M	M
Explain that all matter is made of atoms, and give examples of common elements.							B	D	M
Analyze and explain the implications of the statement "all substances are composed of elements."							B	D	M
Use the kinetic molecular model to predict how solids, liquids, and gases would behave under various physical circumstances, such as heating or cooling.							B	D	M
Predict the physical and chemical properties of elements based on their positions on the Periodic Table.							B	D	M
Identify unknown substances based on data regarding their physical and chemical properties.							B	D	M
Determine whether a substance is a metal or nonmetal through student-designed investigations.							B	D	M
Determine the relative acidity and reactivity of common acids, such as vinegar or cream of tartar, through a variety of student-designed investigations.							B	D	M
B. Changes in Matter									
Explore changes in liquids and solids when substances are combined, heated, or cooled (e.g., mix sand or clay with various amounts of water; mix different colors of tempera paints; freeze and melt water and other liquids).	M	M	M	M	M	M	M	M	M
Explore changes in liquids and solids when substances are combined, heated, or cooled (e.g., mix sand or clay with various amounts of water; mix different colors of tempera paints; freeze and melt water and other liquids).	B	D	M	M	M	M	M	M	M
Predict and explain what happens when a common substance, such as shortening or candle wax, is heated to melting and then cooled to a solid.		B	B/D	D	M	M	M	M	M

Scope and Sequence (continued)	Pre-K Kindergarten	1	2	3	4	5	6	7	8
Compare the properties of reactants with the properties of the products when two or more substances are combined and react chemically.					B	D	M	M	M
Explain, using an understanding of the concept of chemical change, why the mass of reactants and the mass of products remain constant.						B	B/D	D	M
Compare and contrast the physical properties of reactants with products after a chemical reaction, such as those that occur during photosynthesis and cellular respiration.							B	D	M
C. Forms of Energy									
Investigate sound, heat, and light energy (e.g., the pitch and volume of sound made by commercially made and homemade instruments, looking for shadows on the playground over time and under different weather conditions) through one or more of the senses.	M	M	M	M	M	M	M	M	M
Compare, citing evidence, the heating of different colored objects placed in full sunlight.	B	D	M	M	M	M	M	M	M
Apply a variety of strategies to collect evidence that validates the principle that if there is no light, objects cannot be seen.	B	D	M	M	M	M	M	M	M
Present evidence that represents the relationship between a light source, solid object, and the resulting shadow.	B	D	M	M	M	M	M	M	M
Compare various forms of energy as observed in everyday life and describe their applications.		B	B/D	D	M	M	M	M	M
Compare the flow of heat through metals and nonmetals by taking and analyzing measurements.			B	D	M	M	M	M	M
Draw and label diagrams showing several ways that energy can be transferred from one place to another.			B	D	M	M	M	M	M
Illustrate and explain what happens when light travels from air into water.			B	D	M	M	M	M	M
Predict the path of reflected or refracted light using reflecting and refracting telescopes as examples.					B	D	M	M	M
Describe how prisms can be used to demonstrate that visible light from the Sun is made up of different colors.					B	D	M	M	M
Relate the transfer of heat from oceans and land masses to the evolution of a hurricane.					B	D	M	M	M

Scope and Sequence (continued)	Pre-K Kindergarten	1	2	3	4	5	6	7	8
Structure evidence to explain the relatively high frequency of tornadoes in "Tornado Alley."						B	B/D	D	M
Model and explain current technologies used to capture solar energy for the purposes of converting it to electrical energy.							B	D	M
D. Energy Transfer and Conservation									
Predict and confirm the brightness of a light, the volume of sound, or the amount of heat when given the number of batteries, or the size of batteries.	B	D	M	M	M	M	M	M	M
Repair an electric circuit by completing a closed loop that includes wires, a battery (or batteries), and at least one other electrical component to produce observable change.			B	D	M	M	M	M	M
Use simple circuits involving batteries and motors to compare and predict the current flow with different circuit arrangements.					B	D	M	M	M
Relate the kinetic and potential energies of a roller coaster at various points on its path.						B	D	D	M
Describe the flow of energy from the Sun to the fuel tank of an automobile.							B	D	M
E. Forces and Motion									
Investigate how and why things move (e.g., slide blocks, balance structures, push structures over, use ramps to explore how far and how fast different objects move or roll).	M	M	M	M	M	M	M	M	M
Investigate and model the various ways that inanimate objects can move.	B	D	M	M	M	M	M	M	M
Predict an object's relative speed, path, or how far it will travel using various forces and surfaces.	B	D	M	M	M	M	M	M	M
Distinguish a force that acts by direct contact with an object (e.g., by pushing or pulling) from a force that can act without direct contact (e.g., the attraction between a magnet and a steel paper clip).	B	D	M	M	M	M	M	M	M
Demonstrate through modeling that motion is a change in position over a period of time.		B	D	D	M	M	M	M	M
Identify the force that starts something moving or changes its speed or direction of motion.			B	D	M	M	M	M	M
Investigate and categorize materials based on their interaction with magnets.			B	D	M	M	M	M	M

Scope and Sequence (continued)	Pre-K Kindergarten	1	2	3	4	5	6	7	8
Investigate, construct, and generalize rules for the effect that force of gravity has on balls of different sizes and weights.			B	D	M	M	M	M	M
Model and explain how the description of an object's motion from one observer's view may be different from a different observer's view.					B	D	M	M	M
Describe the force between two magnets as the distance between them is changed.					B	D	M	M	M
Demonstrate and explain the frictional force acting on an object with the use of a physical model.					B	D	M	M	M
Predict if an object will sink or float using evidence and reasoning.					B	D	M	M	M
Calculate the speed of an object when given distance and time.							B	D	M
Compare the motion of an object acted on by balanced forces with the motion of an object acted on by unbalanced forces in a given specific scenario.							B	D	M

III. Life Science

A. Organization and Development	K	1	2	3	4	5	6	7	8
Observations and discussions about the natural world form a basis for young learners' understanding of life science.	M	M	M	M	M	M	M	M	M
Observations and discussions form a basis for young learners' understanding of the similarities and differences among living and nonliving things.	M	M	M	M	M	M	M	M	M
Living organisms: <ul style="list-style-type: none"> Exchange nutrients and water with the environment. Reproduce. Grow and develop in a predictable manner. 	B	D	M	M	M	M	M	M	M
Living organisms: <ul style="list-style-type: none"> Interact with and cause changes in their environment. Exchange materials (such as gases, nutrients, water, and waste) with the environment. Reproduce. Grow and develop in a predictable manner 			B	D	M	M	M	M	M

Scope and Sequence (continued)	Pre-K Kindergarten	1	2	3	4	5	6	7	8
Essential functions required for the well-being of an organism are carried out by specialized structures in plants and animals.			B	D	M	M	M	M	M
Essential functions of the human body are carried out by specialized systems: <ul style="list-style-type: none"> ▪ Digestive ▪ Circulatory ▪ Respiratory ▪ Nervous ▪ Skeletal ▪ Muscular ▪ Reproductive 			B	D	M	M	M	M	M
Systems of the human body are interrelated and regulate the body's internal environment.				B	B/D	D	M	M	M
Essential functions of plant and animal cells are carried out by organelles.					B	D	M	M	M
All organisms are composed of cell(s). In multicellular organisms, specialized cells perform specialized functions. Tissues, organs, and organ systems are composed of cells and function to serve the needs of cells for food, air, and waste removal.					B	B/D	D	D	M
During the early development of an organism, cells differentiate and multiply to form the many specialized cells, tissues, and organs that compose the final organism. Tissues grow through cell division.						B	D	D	M
B. Matter and Energy Transformations									
Investigations form a young learners' understanding of how a habitat provides for an organism's energy needs.	M	M	M	M	M	M	M	M	M
A source of energy is needed for all organisms to stay alive and grow. Both plants and animals need to take in water, and animals need to take in food. Plants need light.	B	D	M	M	M	M	M	M	M
Animals have various ways of obtaining food and water. Nearly all animals drink water or eat foods that contain water.	B	D	M	M	M	M	M	M	M
Most plants have roots to get water and leaves to gather sunlight.	B	D	M	M	M	M	M	M	M
Almost all energy (food) and matter can be traced to the Sun.		B	B/D	D	M	M	M	M	M

Scope and Sequence (continued)	Pre-K Kindergarten	1	2	3	4	5	6	7	8
Plants are producers: They use the energy from light to make food (sugar) from carbon dioxide and water. Plants are used as a source of food (energy) for other organisms.					B	D	M	M	M
All animals, including humans, are consumers that meet their energy needs by eating other organisms or their products.					B	D	M	M	M
Food is broken down to provide energy for the work that cells do, and is a source of the molecular building blocks from which needed materials are assembled.						B	D	D	M
All animals, including humans, are consumers that meet their energy needs by eating other organisms or their products.						B	D	D	M
C. Interdependence									
Investigations and observations of the interactions between plants and animals form a basis for young learners' understanding of interdependence in life science.	M	M	M	M	M	M	M	M	M
Organisms interact and are interdependent in various ways; for example, they provide food and shelter to one another.	B	D	M	M	M	M	M	M	M
A habitat supports the growth of many different plants and animals by meeting their basic needs of food, water, and shelter.	B	D	M	M	M	M	M	M	M
Humans can change natural habitats in ways that can be helpful or harmful for the plants and animals that live there.	B	D	M	M	M	M	M	M	M
Organisms can only survive in environments in which their needs are met. Within ecosystems, organisms interact with and are dependent on their physical and living environment.		B	D	D	M	M	M	M	M
Some changes in ecosystems occur slowly, while others occur rapidly. Changes can affect life forms, including humans.			B	D	M	M	M	M	M
Various human activities have changed the capacity of the environment to support some life forms.					B	D	M	M	M
The number of organisms and populations an ecosystem can support depends on the biotic resources available and on abiotic factors, such as quantities of light and water, range of temperatures, and soil composition.					B	D	M	M	M

Scope and Sequence (continued)	Pre-K Kindergarten	1	2	3	4	5	6	7	8
All organisms cause changes in the ecosystem in which they live. If this change reduces another organism's access to resources, that organism may move to another location or die.				B	B/D	D	M	M	M
Symbiotic interactions among organisms of different species can be classified as: <ul style="list-style-type: none"> • Producer/consumer • Predator/prey • Parasite/host • Scavenger/prey • Decomposer/prey 						B	D	D	M
D. Heredity and Reproduction									
Observations of developmental changes in a plant or animal over time form a basis for young learners' understanding of heredity and reproduction.	M	M	M	M	M	M	M	M	M
Plants and animals often resemble their parents.	B	D	M	M	M	M	M	M	M
Organisms have predictable characteristics at different stages of development.	B	D	M	M	M	M	M	M	M
Plants and animals have life cycles (they begin life, develop into adults, reproduce, and eventually die). The characteristics of each stage of life vary by species.		B	B/D	D	M	M	M	M	M
Reproduction is essential to the continuation of every species.					B	D	M	M	M
Variations exist among organisms of the same generation (e.g., siblings) and of different generations (e.g., parent to offspring).					B	D	M	M	M
Traits such as eye color in human beings or fruit/flower color in plants are inherited.					B	D	M	M	M
Some organisms reproduce asexually. In these organisms, all genetic information comes from a single parent. Some organisms reproduce sexually, through which half of the genetic information comes from each parent.							B	D	M
The unique combination of genetic material from each parent in sexually reproducing organisms results in the potential for variation.							B	D	M
Characteristics of organisms are influenced by heredity and/or their environment.						B	D	D	M

Scope and Sequence (continued)	Pre-K Kindergarten	1	2	3	4	5	6	7	8
E. Evolution and Diversity									
Variations exist within a group of the same kind of organism.	B	D	M	M	M	M	M	M	M
Plants and animals have features that help them survive in different environments.	B	D	M	M	M	M	M	M	M
Individuals of the same species may differ in their characteristics, and sometimes these differences give individuals an advantage in surviving and reproducing in different environments.		B	D	D	M	M	M	M	M
In any ecosystem, some populations of organisms thrive and grow, some decline, and others do not survive at all.			B	D	M	M	M	M	M
Changes in environmental conditions can affect the survival of individual organisms and entire species.				B	D	D	M	M	M
Individual organisms with certain traits are more likely than others to survive and have offspring in particular environments. The advantages or disadvantages of specific characteristics can change when the environment in which they exist changes. Extinction of a species occurs when the environment changes and the characteristics of a species are insufficient to allow survival.						B	D	D	M
Anatomical evidence supports evolution and provides additional detail about the sequence of branching of various lines of descent.							B	D	M

IV. Earth Science Systems

A. Objects in the Universe	K	1	2	3	4	5	6	7	8
The Sun is a star that can only be seen during the day. The Moon is not a star and can be seen sometimes at night and sometimes during the day. The Moon appears to have different shapes on different days.	B	D	M	M	M	M	M	M	M
Objects in the sky have patterns of movement. The Sun and Moon appear to move across the sky on a daily basis. The shadows of an object on Earth change over the course of a day, indicating the changing position of the Sun during the day.		B	D	D	M	M	M	M	M
The observable shape of the Moon changes from day to day in a cycle that lasts 29.5 days.			B	D	M	M	M	M	M

Scope and Sequence (continued)	Pre-K Kindergarten	1	2	3	4	5	6	7	8
Earth is approximately spherical in shape. Objects fall towards the center of the Earth because of the pull of the force of gravity.			B	D	M	M	M	M	M
Earth is the third planet from the Sun in our solar system, which includes seven other planets.			B	D	M	M	M	M	M
The height of the path of the Sun in the sky and the length of a shadow change over the course of a year.					B	D	M	M	M
Earth's position relative to the Sun, and the rotation of Earth on its axis, result in patterns and cycles that define time units of days and years.					B	D	M	M	M
The Sun's gravity holds planets and other objects in the solar system in orbit, and planets' gravity holds moons in orbit.					B	D	M	M	M
The Sun is the central and most massive body in our solar system, which includes eight planets and their moons, dwarf planets, asteroids, and comets.					B	D	M	M	M
The relative positions and motions of the Sun, Earth, and Moon result in the phases of the Moon, eclipses, and the daily and monthly cycle of tides.						B	D	D	M
Earth's tilt, rotation, and revolution around the Sun cause changes in the height and duration of the Sun in the sky. These factors combine to explain the changes in the length of the day and seasons.						B	D	D	M
Gravitation is a universal attractive force by which objects with mass attract one another. The gravitational force between two objects is proportional to their masses and inversely proportional to the square of the distance between the objects.						B	D	D	M
The regular and predictable motion of objects in the solar system (Kepler's Laws) is explained by gravitational forces.							B	D	M
B. History of Earth									
Fossils provide evidence about the plants and animals that lived long ago, including whether they lived on the land or in the sea as well as ways species changed over time.			B	D	M	M	M	M	M
Successive layers of sedimentary rock and the fossils contained in them tell the factual story of the age, history, changing life forms, and geology of Earth.					B	D	M	M	M

Scope and Sequence (continued)	Pre-K Kindergarten	1	2	3	4	5	6	7	8
Earth's current structure has been influenced by both sporadic and gradual events. Changes caused by earthquakes and volcanic eruptions can be observed on a human time scale, but many geological processes, such as mountain building and the shifting of continents, are observed on a geologic time scale.					B	D	M	M	M
Moving water, wind, and ice continually shape Earth's surface by eroding rock and soil in some areas and depositing them in other areas.					B	D	M	M	M
Erosion plays an important role in the formation of soil, but too much erosion can wash away fertile soil from ecosystems, including farms.					B	D	M	M	M
Today's planet is very different than early Earth. Evidence for one-celled forms of life (bacteria) extends back more than 3.5 billion years.						B	D	D	M
Fossils provide evidence of how life and environmental conditions have changed. The principle of Uniformitarianism makes possible the interpretation of Earth's history. The same Earth processes that occurred in the past occur today.							B	D	M
C. Properties of Earth Materials									
Observations and investigations form a basis for young learners' understanding of properties of Earth materials.	M	M	M	M	M	M	M	M	M
Soils are made of many living and nonliving substances. The attributes and properties of soil (e.g., moisture, kind and size of particles, living/organic elements, etc.) vary depending on location.	B	D	M	M	M	M	M	M	M
Rocks can be broken down to make soil.		B	B/D	D	M	M	M	M	M
Earth materials in nature include rocks, minerals, soils, water, and the gases of the atmosphere. Attributes of rocks and minerals assist in their identification.			B	D	M	M	M	M	M
Soil attributes/properties affect the soil's ability to support animal life and grow plants.					B	D	M	M	M
The rock cycle is a model of creation and transformation of rocks from one form (sedimentary, igneous, or metamorphic) to another. Rock families are determined by the origin and transformations of the rock.					B	D	M	M	M

Scope and Sequence (continued)	Pre-K Kindergarten	1	2	3	4	5	6	7	8
Rocks and rock formations contain evidence that tell a story about their past. The story is dependent on the minerals, materials, tectonic conditions, and erosion forces that created them.					B	D	M	M	M
Soil consists of weathered rocks and decomposed organic material from dead plants, animals, and bacteria. Soils are often found in layers, each having a different chemical composition and texture.						B	B/D	D	M
Physical and chemical changes take place in Earth materials when Earth features are modified through weathering and erosion.						B	B/D	D	M
Earth's atmosphere is a mixture of nitrogen, oxygen, and trace gases that include water vapor. The atmosphere has a different physical and chemical composition at different elevations.							B	D	M
D. Tectonics									
Lithospheric plates consisting of continents and ocean floors move in response to movements in the mantle.					B	D	M	M	M
Earth's landforms are created through constructive (deposition) and destructive (erosion) processes.					B	D	M	M	M
Earth has a magnetic field that is detectable at the surface with a compass.					B	D	M	M	M
Earth is layered with a lithosphere, a hot, convecting mantle, and a dense, metallic core.							B	D	M
Major geological events, such as earthquakes, volcanic eruptions, and mountain building, result from the motion of plates. Sea floor spreading, revealed in mapping of the Mid-Atlantic Ridge, and subduction zones are evidence for the theory of plate tectonics.						B	B/D	D	M
Earth's magnetic field has north and south poles and lines of force that are used for navigation.						B	B/D	D	M
E. Energy in Earth Systems									
Observations and investigations form the basis for young learners' understanding of energy in Earth systems.	M	M	M	M	M	M	M	M	M
Plants need sunlight to grow.	B	D	M	M	M	M	M	M	M
Land, air, and water absorb the Sun's energy at different rates.			B	D	M	M	M	M	M
The Sun is the major source of energy for circulating the atmosphere and oceans.				B	B/D	D	M	M	M

Scope and Sequence (continued)	Pre-K Kindergarten	1	2	3	4	5	6	7	8
The Sun provides energy for plants to grow and drives convection within the atmosphere and oceans, producing winds, ocean currents, and the water cycle.						B	B/D	D	M
F. Climate and Weather									
Observations and investigations form the basis for young learners' understanding of weather and climate.	M	M	M	M	M	M	M	M	M
Current weather conditions include air movement, clouds, and precipitation. Weather conditions affect our daily lives.	B	D	M	M	M	M	M	M	M
Weather changes that occur from day to day and across the seasons can be measured and documented using basic instruments such as a thermometer, wind vane, anemometer, and rain gauge.		B	B/D	D	M	M	M	M	M
Weather is the result of short-term variations in temperature, humidity, and air pressure.				B	B/D	D	M	M	M
Climate is the result of long-term patterns of temperature and precipitation.				B	B/D	D	M	M	M
Global patterns of atmospheric movement influence local weather.						B	B/D	D	M
Climate is influenced locally and globally by atmospheric interactions with land masses and bodies of water.						B	B/D	D	M
Weather (in the short term) and climate (in the long term) involve the transfer of energy and water in and out of the atmosphere.							B	D	M
G. Biogeochemical Cycles									
Investigations in environmental awareness activities form a basis for young learners' understanding of biogeochemical changes.	M	M	M	M	M	M	M	M	M
Water can disappear (evaporate) and collect (condense) on surfaces.	B	D	M	M	M	M	M	M	M
There are many sources and uses of water.	B	D	M	M	M	M	M	M	M
Organisms have basic needs and they meet those needs within their environment.	B	D	M	M	M	M	M	M	M
The origin of everyday manufactured products such as paper and cans can be traced back to natural resources.	B	D	M	M	M	M	M	M	M
Clouds and fog are made of tiny droplets of water and, at times, tiny particles of ice.			B	D	M	M	M	M	M

Scope and Sequence (continued)	Pre-K Kindergarten	1	2	3	4	5	6	7	8
Rain, snow, and other forms of precipitation come from clouds; not all clouds produce precipitation.		B	B/D	D	M	M	M	M	M
Most of Earth's surface is covered by water. Water circulates through the crust, oceans, and atmosphere in what is known as the water cycle.		B	B/D	D	M	M	M	M	M
Properties of water depend on where the water is located (oceans, rivers, lakes, underground sources, and glaciers).		B	B/D	D	M	M	M	M	M
Circulation of water in marine environments is dependent on factors such as the composition of water masses and energy from the Sun or wind.					B	D	M	M	M
An ecosystem includes all of the plant and animal populations and nonliving resources in a given area. Organisms interact with each other and with other components of an ecosystem.					B	D	M	M	M
Personal activities impact the local and global environment.					B	D	M	M	M
Water in the oceans holds a large amount of heat, and therefore significantly affects the global climate system.							B	D	M
Investigations of environmental issues address underlying scientific causes and may inform possible solutions.							B	D	M