

<b>Science Teacher Units</b>							
<b>Grade</b>	<b>Topic</b>	<b>CONTENT</b>	<b>SKILLS</b>	<b>Essential Questions</b>	<b>CCCS</b>	<b>Assessments</b>	<b>Benchmarks</b>
K	<b>Plants</b>	Basic Parts (roots, stem, leaves, flower, fruit, branches, bark)	Identify basic parts on live plants.	How do plants stay alive?	5.3.2.A.1 5.3.2.B.3	Draw and label basic parts and list the needs of plants.	By the end of kindergarten, students will be able to name the parts and needs of a plant.
K	<b>Plants</b>	Needs of a Plant	Identify needs of plants.		5.3.2.B.1 5.3.2.B.3		
K	<b>Plants</b>	Plants as food	Sort plants that can be eaten.		5.3.2.B.1		
K	<b>Animals</b>	Needs	Explain that animals need food, water and shelter.	What do animals need to stay alive?	5.3.2.B.1 5.3.2.B.2 5.4.2.G.3	Match animals to shelter, body covering, offspring and needs.	By the end of kindergarten, students will be able to match animals to shelter, body covering, offspring and needs.
K	<b>Animals</b>	Offspring - live birth vs. hatching	Match adult to offspring, identify live birth animals and hatchlings.		5.3.2.D.1 5.3.2.D.2		
K	<b>Animals</b>	Body coverings	Describe characteristic body coverings.		5.3.2.E.2		
K	<b>Animals</b>	Animal shelter	Match animal to shelter (nest, tree, log, cave, den, house).		5.3.2.C.1 5.3.2.C.2 5.4.2.G.3		
K	<b>Human Body</b>	Circulatory System	Identify heart, veins and arteries and identify their purpose.	How do the parts of the body work?	5.3.2.A.1 5.3.4.A.3	Construct a model of the circulatory and respiratory systems.	By the end of kindergarten, students will be able to explain the main parts of the circulatory and respiratory systems.
K	<b>Human Body</b>	Respiratory System	Identify lungs and identify their purpose.		5.3.4.A.3		
K	<b>Human Body</b>	Hygiene	Use hand washing techniques and tissues.	How do we keep our bodies healthy?	5.3.4.A.2	Demonstrate proper handwashing technique and use of tissues.	By the end of kindergarten, students will be able to explain the importance of proper hygiene.
K	<b>Ecology</b>	Earth Day (pollution, recycling, conservation)	Celebrate Earth Day.	What is Earth Day?	5.4.2.G.3 5.4.2.G.4	Identify that reduce, reuse and recycle are the methods for preserving the Earth.	By the end of kindergarten, students will be able to explain the importance of Earth Day.
K	<b>Earth</b>	Earth composition	Identify landforms (land, water, air, coast).	What are the different parts of the Earth?	5.4.6.B.2	Label the parts of the Earth on a drawing or a globe.	By the end of kindergarten, the students will be able to identify the main parts of the Earth and identify fossils.
K	<b>Earth</b>	Fossils	Explore fossils.		What are fossils?	5.4.4.B.1	
K	<b>Water &amp; Atmosphere</b>	Seasons	Name 4 seasons, Identify appropriate dress/activities for each season.	How does weather change?	5.4.2.F.1 5.4.4.F.1	Draw a picture of yourself in each of the four seasons.	By the end of kindergarten, students will be able to name the seasons and how they effect us.
K	<b>Water &amp; Atmosphere</b>	Rainbows	Identify causes of rainbows.		5.4.4.G.2	Use a prism to make a rainbow.	By the end of kindergarten, students will be able to describe atmospheric conditions needed for a rainbow.
K	<b>Water &amp; Atmosphere</b>	Freshwater vs. salt water	State that there are 2 main types of water on Earth.		Is all water the same?	5.4.2.G.2	Identify what makes fresh and salt water different.

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K	<b>Astronomy</b>	Revolution	Demonstrate Earth's path around the Sun.	How does the Earth move?	5.4.4.A.1	Dramatize day and night and a year.	By the end of kindergarten, students will be able to show how the Earth moves and describe the day and night sky.
K	<b>Astronomy</b>	Rotation	Explain what causes day and night.		5.4.4.A.1 5.4.4.A.3		
K	<b>Astronomy</b>	Phases of moon	Identify full moon, half moon, new moon.	What can you see in the night sky?	5.4.4.A.2	Draw and label the phases of the moon.	
K	<b>Astronomy</b>	Sun and stars	Identify the sun as one star among many.		5.4.2.A.1		
K	<b>Astronomy</b>	Planets	Identify Earth as one planet among many.	5.4.4.A.4			
K	<b>Astronomy</b>	Gravity	Demonstrate gravity's effect on objects.	5.4.4.A.3 5.2.2.E.2 5.2.4.E.4			
K	<b>Astronomy</b>	Careers	Explain the job of an astronaut.				
K	<b>Matter</b>	Buoyancy	Sort objects that float.	How are things (matter) different from one another?	5.2.2.A.1 5.2.2.A.2	Classify different objects according to weight and buoyancy.	By the end of kindergarten, students will be able to compare characteristics of matter.
K	<b>Matter</b>	Weight	Order objects by weight (heavier/lighter).		5.2.4.A.3 5.2.2.A.1		
K	<b>Matter</b>	Classification	Sort objects by color, size, shape, and texture.		5.2.2.A.1		
K	<b>Forces</b>	Magnets	Use magnets.	What can magnets do?	5.2.2.E.3 5.2.4.E.2 5.2.4.E.3	Record observations of magnet experimentation.	By the end of kindergarten, students will be able to demonstrate the abilities of magnets.
K	<b>Forces</b>	Application of Forces	Use objects to apply force (push/pull; fast/slow and balance).	What does force do?	5.2.2.E.1 5.2.2.E.2	Demonstrate application of forces.	By the end of kindergarten, students will be able to distinguish between push and pull.
K	<b>Electricity</b>	Static electricity	Demonstrate static electricity.		5.4.2.F.1 5.2.4.C.1	Make objects attract using static electricity.	By the end of kindergarten, the students will be able to explain that electricity can shock you, power devices, and make things stick together.
K	<b>Electricity</b>	Safety	Identify importance of electrical safety; describe safe practices.		5.1.4.D.3	Identify safe and unsafe practices with electricity.	
K	<b>Electricity</b>	Simple circuits	Build a simple circuit.		8.2.2 B. 2	Name 3 items that use electricity.	
K	<b>Light</b>	Natural and artificial sources	Identify the sun as a natural source and a light bulb as an artificial source.	What makes light?	5.2.2.D.1 5.2.4.D.1	Identify the natural and artificial sources of light.	By the end of kindergarten, the students will be able to identify natural and artificial sources of light.
K	<b>Light</b>	Use a magnifier	Use a magnifier to help see things you could not see without them.		5.1.4.B.2	Employ proper technique with a magnifier to enlarge the appearance of an object.	
K	<b>Light</b>	Shadows	Manipulate the length of a shadow; determine that shadows are created by an object blocking light.		5.2.2.C.3	Manipulate the size of the shadow by changing the angle of the light source relative to an object.	
K	<b>Heat</b>	Hot vs. cold	Identify hot and cold water.	What is hot/ cold?	5.2.2.C.1 5.2.4.C.1	Use the sense of touch to tell the difference between hot and cold.	By the end of kindergarten, students will be able to distinguish between hot and cold.
K	<b>Heat</b>	Sources of heat	Identify sun, friction and fire as sources of heat.		5.2.2.C.1 5.2.4.C.1 5.2.4.C.2		
K	<b>Sound</b>	Vibration	Experiment with vibrations and sound.	What are the characteristics of sound?	5.2.4.C.1	Demonstrate soft and loud and high and low.	By the end of kindergarten, students will be able to distinguish between soft and loud sounds.
K	<b>Sound</b>	Volume	Demonstrate soft and loud volume.				

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K	<b>Sound</b>	Pitch	Demonstrate high and low pitch.	sound?			distinguish between soft and loud volume and high and low pitch.

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1st	<b>Human Body</b>	Digestive System	Identify that the purpose of the digestive system is delivering nutrients to the body.	How do the parts of the body work?	5.3.4.A.2 5.3.4.A.3	Construct a model of the muscular, skeletal, and digestive systems.	By the end of first grade, students will be able to explain the main purposes of the skeletal, muscular and digestive systems.	
1st	<b>Human Body</b>	Skeletal System	Identify that the purpose of the skeletal system is support, movement and protection.					
1st	<b>Human Body</b>	Muscular System	Identify that the purpose of the muscular system is movement.					
1st	<b>Human Body</b>	Tongue	Identify that the tongue has taste buds that experience different taste sensations.		5.3.4.A.2	Describe foods as tasting salty, sweet, sour, bitter, or umami.		By the end of first grade, students will be able to describe how sense information is communicated to the brain.
1st	<b>Human Body</b>	Nose	Identify that the nose has the ability to distinguish scents.					
1st	<b>Human Body</b>	Eye	Identify and describe function of pupil, iris, retina, optic nerve, and tear ducts.					
1st	<b>Human Body</b>	Ear	Identify and describe the function of outer ear, ear drum, the ear bones and discuss balance.					
1st	<b>Human Body</b>	Hygiene	Demonstrate and explain proper hygiene.	How do we keep our bodies healthy?	Explain ways to keep your sense organs healthy.	By the end of first grade, students will be able to describe proper care of the sense organs.		
1st	<b>Ecology</b>	Ecosystems	Identify desert, ocean, forests, pool regions and describe characteristics.	How does the Earth's surface vary?	5.4.2.G.3 5.4.4.G.3	Compare and contrast characteristics of the different ecosystems and bodies of water.	By the end of first grade, students will be able to distinguish the different surfaces of the Earth.	
1st	<b>Ecology</b>	Bodies of water	Identify and compare rivers, streams, lakes, ponds and oceans.		5.4.2.G.2 5.4.4.G.4			
1st	<b>Earth</b>	Rock sizes	Compare pebbles, gravel, sand, clay and silt.	Is all soil the same?	5.4.2.C.1	Sort Pebbles, gravel, sand, clay and silt.	By the end of first grade, the students will be able to compare soil and rocks; describe fossil formation.	
1st	<b>Earth</b>	Composition of soil	Compare various types of soil.		5.4.2.C.1 5.4.4.C.1			
1st	<b>Earth</b>	Fossils	Describe process of fossilization.	How are fossils created?	5.4.4.B.1	Create and describe fossils.		
1st	<b>Earth</b>	Earth's Forces	Compare volcanoes to mountains ; describe earthquakes.	What happens when forces build up in the Earth?	5.4.4.C.2			
1st	<b>Matter</b>	Matter	Define matter.	What are the states of matter?	5.2.2.A.1	Sort objects based on their state of matter.	By the end of first grade, students will be able to identify the three states of matter and how they can change.	
1st	<b>Matter</b>	States of matter	Identify solids, liquids and gases, identify air as matter.		5.2.2.A.2 5.2.4.A.2			
1st	<b>Matter</b>	Changes of states (melting, freezing, and evaporating)	Observe changes of state; classify solids and liquids by observable properties of matter.		5.2.2.B.1			
1st	<b>Matter</b>	Metric measure (linear, weight)	Use ruler and scale.	How does a scientist measure matter?	5.1.4.D.3 5.2.4.A.3	Measure and weigh a variety of objects.	By the end of first grade, students will be able to implement metric tools of measurement.	

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1st	Light	Natural and artificial sources	Sort sources of light.	How does light move?	5.2.2.C.1 5.2.2.C.2 5.2.2.G.3	Identify natural and artificial light sources.	By the end of first grade, students will know that light travels in a straight line, and can change direction by reflection.
1st	Light	Reflection	Demonstrate changing the direction of light, identify moon as reflected light.		5.2.4.C.4	Reflect light using mirrors.	
1st	Light	Color	Identify colors of spectrum (ROYGBIV) and use prisms.		5.2.2.C.2 5.2.6.C.1 5.2.6.C.2	Create a rainbow using a prism.	
1st	Heat	Sources of heat	Identify sun, fire and friction as sources of heat.	What is heat and how is it measured?	5.2.2.C.1 5.2.4.C.1 5.2.4.C.2 5.2.4.C.3	Identify three sources of heat.	By the end of first grade, students will be able to recognize observable sources of heat and measure heat with a thermometer.
1st	Heat	Fire Triangle (Fuel + Oxygen + Ignition)	Observe fire and identify the components necessary.		5.2.4.C.2		
1st	Heat	Instrumentation	Read thermometer as measurement of heat.		5.1.4.B.2 5.1.4.D.3 5.4.4.F.1 8.2.2.D.1	Use a thermometer to measure relative temperature.	
1st	Forces	Magnets	Predict whether an object is magnetic and test predictions.	What is a magnet?	5.2.2.E.2 5.2.2.E.3	Identify and test common objects for magnetism.	By the end of first grade, students will be able to determine whether an object is magnetic and locate a magnet's poles.
1st	Forces	Magnetic poles	Identify poles, observe force (attract/repel); explain that the Earth is a large magnet with poles.		5.2.4.E.3	Locate poles on a magnet.	
1st	Animals	Dinosaurs	Name several dinosaurs; compare metric sizes; compare and contrast herbivores, carnivores and omnivores; discuss extinction theories.	What were dinosaurs?	5.3.2.A.1 5.3.4.A.1 5.3.4.A.2 5.3.2.B.2 5.3.2.C.1 5.3.4.C.1	Categorize dinosaurs according to eating habits. Explain extinction.	By the end of first grade, students will be able to differentiate between types of dinosaurs and how they lived.
1st	Animals	Fish	Identify characteristics and how they meet their basic needs.	How do animals compare to one another?	5.3.2.A.1 5.3.4.A.1 5.3.4.A.2 5.3.2.B.2 5.3.2.C.1 5.3.4.C.1	Categorize animals as either fish, mammal, reptile, amphibian, bird or insect.	By the end of first grade, students will be able to categorize animals based on observable characteristics.
1st	Animals	Mammals					
1st	Animals	Reptiles					
1st	Animals	Amphibians					
1st	Animals	Birds					
1st	Animals	Insects					

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2nd	<b>Ecology</b>	Natural Resources	Identify various needs of humans that are met by the natural or constructed environment.	How does the environment meet our needs?	5.3.2.C.3 5.4.2.G.2 5.4.2.G.3 5.4.2.G.4	List several human needs and how the environment meets those needs.	By the end of second grade, students will be able to describe how the environment provides for their survival.
2nd	<b>Forces</b>	Force/Direction of the force	Define force and motion; use force to change position and direction of objects.	How can forces affect objects?	5.2.2.E.1 5.2.2.E.2 5.2.4.E.1 5.2.4.E.2	Experiment with various forces to differentiate their affect on objects.	By the end of second grade, students will be able to determine how force affects objects.
2nd	<b>Forces</b>	Gravity	Experiment with gravity.		5.2.4.E.4		
2nd	<b>Forces</b>	Friction	Test how friction slows/stops moving objects.		5.2.2.E.2		
2nd	<b>Forces</b>	Balance	Find center of gravity to balance objects; use counterweights to create stability.		5.2.2.E.2		
2nd	<b>Forces</b>	Work and power	Define work and power.	How do simple machines help us?	5.2.2.E.1 5.2.2.E.3 5.2.4.E.2	Identify simple machines found in their environment.	By the end of second grade, students will be able to recognize common simple machines and demonstrate their function.
2nd	<b>Forces</b>	Simple machines	Experiment with the six simple machines.		5.2.4.E.2 8.2.2 B. 2		
2nd	<b>Forces</b>	Forms of motion	Experiment with rolling, sliding, spinning (rotating), and flipping.	How do things move?	5.2.2.E.1 5.2.2.E.2 5.2.2.E.3	Demonstrate different forms of motion.	By the end of second grade, students will be able to demonstrate forms of motion.
2nd	<b>Astronomy</b>	Solar system	Identify the components of the solar system including the Sun, planets, moons, comets, asteroids, and meteoroids.	What are the parts of the solar system?	5.4.2.A.1 5.4.4.A.4	Identify the positions and relative sizes of the planets in the solar system.	By the end of second grade, students will be able to identify and describe the parts of the solar system.
2nd	<b>Astronomy</b>	Planets	List the planets and compare their sizes.		5.4.4.A.4		
2nd	<b>Astronomy</b>	Phases of the moon	Identify 8 phases of the moon.	How do objects move within the solar system?	5.4.4.A.2	Draw and label eight phases of the moon.	By the end of second grade, students will be able to describe the effects of movement within the solar system.
2nd	<b>Astronomy</b>	Rotation	Express that Earth's rotation relates to night and day.		5.4.4.A.1	Explain the movement of the Earth around the sun.	
2nd	<b>Astronomy</b>	Revolution	Identify that planets travel around the Sun in an elliptical path.		5.4.4.A.1 5.4.6.A.2		
2nd	<b>Astronomy</b>	Tilt of Earth	Identify relationship between Earth's tilt and seasons.		5.4.4.A.1 5.4.4.F.1 5.4.6.A.2		
2nd	<b>Astronomy</b>	Constellations	Identify several constellations.		5.4.4.A.1		
2nd	<b>Astronomy</b>	Space travel	Identify different methods of space travel.				

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2nd	<b>Electricity</b>	Safety	Demonstrate safe practices and procedures for using and working with electricity.	How do people use electricity?	5.1.4.D.3	Identify safe/unsafe practices of electricity.	By the end of grade 2 students will be able to build and repair simple circuits based on schematics; relate sources of electricity with their uses.
2nd	<b>Electricity</b>	Static Electricity	Create static electricity and observe its effects.			Make objects attract using static electricity.	
2nd	<b>Electricity</b>	Sources	Explain batteries store electricity and power is transmitted from electric companies.	Where is electricity made?	5.2.2.D.1		
2nd	<b>Electricity</b>	Electrical circuits	Build electrical circuits.	How does electricity work?	5.2.2.D.1 5.2.4.D.1 5.2.6.D.1	Build a simple circuit.	
2nd	<b>Electricity</b>	Circuit diagrams	Build electrical circuits based on schematics.		5.2.2.D.1 5.2.4.D.1 5.2.6.D.1		
2nd	<b>Electricity</b>	Short circuits	Create and de-bug a short circuit.		5.2.4.D.1		
2nd	<b>Electricity</b>	Early scientists	Express the contributions of Benjamin Franklin and Thomas Edison.				
2nd	<b>Electricity</b>	Flow of electricity	Identify the positive and negative poles of a battery and the direction of flow.		5.2.4.D.1		
2nd	<b>Sound</b>	Volume vs. pitch	Distinguish differences in volume and pitch of sounds.	What is the difference between pitch and volume?	5.2.4.C.1	Demonstrate differences in pitch and volume.	By the end of second grade, the student will be able to contrast pitch and volume.
2nd	<b>Sound</b>	Speed of sound	Identify sound travels quickly.	How does sound move?	5.2.4.C.1	Experiment with sound's movement through the three states of matter and record observations.	By the end of second grade, the student will be able to demonstrate how sound moves through solid, liquids and gases; and also how it is reflected and absorbed.
2nd	<b>Sound</b>	Sound travel	Test sounds ability to travel through solids, liquids and air.		5.2.4.C.1		
2nd	<b>Sound</b>	Echoes	Demonstrate how sound can be reflected or absorbed by its surroundings.		5.2.4.C.1	Identify items that absorbed and items that reflect sound.	
2nd	<b>Water &amp; Atmosphere</b>	Types of precipitation	Explain causes of snow, hail, sleet, freezing rain, and rain.	What is weather?	5.4.2.F.1 5.4.2.G.1 5.4.4.G.2	List and describe the different forms of water that fall as precipitation.	By the end of second grade, students will be able to describe the components of weather and weather related events.
2nd	<b>Water &amp; Atmosphere</b>	Air pressure and movement	Demonstrate that air exerts pressure.		5.4.2.F.1 5.4.2.G.1 5.4.4.G.2		
2nd	<b>Water &amp; Atmosphere</b>	Types of storms	Describe hurricanes and tornadoes, including area of formation, duration and relative size.		5.1.4.D.3 5.4.2.F.1 5.4.4.F.1 5.4.4.G.2	Compare hurricanes and tornadoes.	
2nd	<b>Water &amp; Atmosphere</b>	Instrumentation	Measure & record components of weather using thermometers, rain gauges, anemometers, barometers; use compass to find North, South, East and West.	How do we predict weather?	5.4.4.F.1	Match instruments with their function.	By the end of second grade, students will be able to make rudimentary weather forecasts using maps and tools.
2nd	<b>Water &amp; Atmosphere</b>	Weather Maps	Read weather maps.	How do we predict weather?	5.1.4.B.2 5.4.4.F.1	Identify the symbols on a weather map.	By the end of second grade, students will be able to make rudimentary weather forecasts using maps and tools.

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3rd	<b>Animals</b>	Classification	Describe characteristics of reptiles, fish, mammals, birds, amphibians, insects (bugs); classify animals by Kingdom, Class, Species.	How do we classify animals?	5.1.4.B.4	Sort animals, according to characteristics into Kingdom, Class and Species.	By the end of third grade, students will be able to classify major groups of animals.
3rd	<b>Animals</b>	Learned behavior vs. instinctual	Define learned behavior and instinctual terms and give examples (hibernation, migration, nocturnal/diurnal).	How do animals survive?	5.3.4.A.1 5.3.4.A.2 5.3.4.C.1 5.3.6.B.1	Describe the physical and behavioral adaptations of a given animal.  Diagram a food chain/web given a set of organisms.  Describe an animals place within each level of the hierarchy.	By the end of third grade, students will be able to identify the behaviors and adaptations that enable animals to survive.
3rd	<b>Animals</b>	Food web	Diagram a food web.				
3rd	<b>Animals</b>	Ecological Hierarchy	Describe a living thing's placement within Biomes-> Ecosystems-> Habitats-> Community-> Population-> Niche.				
3rd	<b>Animals</b>	Endangered vs. extinct vs. prolific	Define terms and give examples of each.		5.3.4.E.1 5.3.4.E.2	Model an adaptation to a species that would affect its chances of survival.	
3rd	<b>Animals</b>	Adaptations to habitats	Describe characteristics of animals that help them survive in their habitats.				
3rd	<b>Animals</b>	Metamorphosis	Compare complete and incomplete metamorphosis and give examples.	What is metamorphosis?	5.3.4.D.1 5.3.4.E.1	Record the observed stages of metamorphosis (complete and incomplete).	By the end of third grade, students will be able to identify types of animals that metamorphose.
3rd	<b>Ecology</b>	Water and Air Pollution	Identify sources of water and air pollution; state methods of preventing and cleaning up pollution.	How can we prevent Earth from being damaged?	5.3.4.C.1 5.3.4.C.2	Communicate methods for preventing water and air pollution.	By the end of third grade, students will be able to explain the factors affecting the Earth's environment.
3rd	<b>Ecology</b>	Pollutants	Identify several pollutants (fertilizer, acid rain, salt, emissions).		5.3.6.C.1		
3rd	<b>Earth</b>	Biomes	Define deciduous forest, tropical rainforest, desert, grassland, taiga, tundra and ocean.	What are the different biomes found on the Earth?	5.3.4.C.1 5.4.6.G.2	Construct a model or diagram of a biome.	By the end of third grade, students will be able to discern between the different biomes.
3rd	<b>Earth</b>	Sources of water	Identify and locate sources of groundwater and surface water and describe importance of each.	How does water affect the Earth's surface?	5.4.4.G.3 5.4.4.G.4	Identify and label different sources of water and landforms.	By the end of third grade, students will be able to trace the path of a drop of water through the water cycle, including ground water.
3rd	<b>Earth</b>	Landforms	Identify glacier, valley, plateau, volcano, mountain, hill, plain, and coast.		5.4.6.B.3 5.4.4.D.2		
3rd	<b>Earth</b>	Layers of the Earth	Describe crust, mantle and core.	What is inside the Earth?	5.4.8.D.1	Diagram the layers of the Earth.	By the end of third grade, the students will be able to name the layers of the Earth.
3rd	<b>Matter</b>	Define matter	Define matter in terms of atoms.	What is the building block of matter?	5.2.8.A.1	Label the basic parts of an atom.	By the end of third grade, students will identify the atom as the smallest unit of matter.
3rd	<b>Matter</b>	Solids and liquids	Classify solids and liquids by density, buoyancy, volume, magnetism.	What are the properties of matter?	5.2.4.A.2 5.2.4.A.3	Experiment and sort matter according to properties.	By the end of third grade, students will be able to differentiate the properties of matter.
3rd	<b>Matter</b>	Mixtures and Compounds	Observe differences between mixture and compound, suspension and solution.	How can matter be changed?	5.2.4.A.1	Articulate the different changes in matter and identify the type of outcome.	By the end of third grade, students will be able to demonstrate or state how matter can change.
3rd	<b>Matter</b>	Physical & Chemical Changes	Compare physical changes and chemical changes.		5.2.4.B.1 5.2.6.B.1		

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3rd	Light	Spectrum of visible light	Identify color spectrum (ROYGBIV); create white light.	What can light do?	5.2.4.C.1 5.2.6.C.1 5.2.6.C.2	Draw the colors in the spectrum of visible light in order.	By the end of third grade, students will explain how light reacts with different materials.
3rd	Light	Transparent, translucent, opaque.	Define transparent, translucent and opaque and test materials.		5.2.4.A.4 5.2.4.C.1	Test different materials and determine how they react with light.	
3rd	Light	Reflection, refraction, absorption,	Explain reflection, refraction and absorption.		5.2.4.C.4 5.2.6.C.2		
3rd	Light	Speed of light	State the speed of light.		5.2.4.C.4	Explain what happens to light as it travels from air into water.	
3rd	Heat	Sources	Identify fire, friction, and electrical resistance.	How does heat react with its environment?	5.2.4.C.1	Identify sources of heat energy.	By the end of third grade, students will be able to understand that heat causes that changes of state in matter.
3rd	Heat	Components of Fire	Define Fire Triangle (fuel/oxygen/ignition).			Draw and label a fire triangle.	
3rd	Heat	Motion of particles	Describe heat's effect on states of matter.		5.2.4.C.3	Test different materials for observable reactions to heat.	
3rd	Heat	Conductors and insulators of heat	Test objects for conduction and insulation.		5.2.4.C.3		
3rd	Heat	Transfer of heat	Observe demonstrations of conduction, convection and radiation of heat.		5.2.4.C.2 5.2.4.C.3		
3rd	Heat	Instrumentation	Read a thermometer and identify boiling point and freezing point.	5.1	Use thermometers to measure Fahrenheit and Celsius to the degree.		
3rd	Human Body	Circulatory System	Identify, locate and describe the parts and function of the system.	How do the parts of the body work?	5.3.4.A.3	Identify and locate the parts of each system; explain the functions of the main parts of each system.	By the end of third grade, students will be able to explain the purpose of each system, name the main parts of each system and their functions.
3rd	Human Body	Respiratory System	Identify, locate and describe the parts and function of the system.				
3rd	Human Body	Immune System	Identify components of immune system and describe the role of each.				
3rd	Human Body	Nervous System	Identify, locate and describe the parts and function of the system.				
3rd	Human Body	Digestive System	Identify, locate and describe the parts and function of the system.				
3rd	Human Body	Excretory System	Identify, locate and describe the parts and function of the system.				
3rd	Human Body	Integumentary System	Identify, locate and describe the parts and function of the system.				
3rd	Human Body	Endocrine System	Identify, locate and describe the parts and function of the system.				
3rd	Human Body	Cells, Tissues and Organs	Describe the internal organization scheme.		5.3.4.A.2	Describe the hierarchy of how an organism is put together (cells make tissues, tissues make organs, organs makes systems).	By the end of third grade, the students will be able to describe the hierarchy of organization within living things.

Grade	Topic	CONTENT	SKILLS	Essential Questions	CCCS	Assessments	Benchmarks
4th	<b>Plants</b>	Plant cells	Label basic parts of a cell.	What are the basic parts of a plant and how do they work together?	5.3.6.A.2	Define the parts, needs and processes of a plant.	By the end of fourth grade, students will be able to explain the life processes of a plant.
4th	<b>Plants</b>	Needs of a Plant	Identify and explain the needs of plants.		5.3.4.C.1		
4th	<b>Plants</b>	Plant Processes	Define photosynthesis, transpiration and respiration.		5.3.4.A.1 5.3.4.A.2 5.3.4.B.1		
4th	<b>Plants</b>	Plant Experiments	Experiment with adding/removing basic needs; observe tropisms.	How can you alter a plant's growth?	5.3.4.A.1 5.3.4.D.1 5.3.6.D.1	Observe and record the results of plant experimentation using multiple variables within the scientific method.	By the end of fourth grade, students will be able to experiment with variables and record the results.
4th	<b>Plants</b>	Uses of Plants	Describe uses such as clothing, food, shelter, medicine.	How do you classify plants and fungi?	5.3.6.B.1	Categorize plants and fungi in a variety of ways.	By the end of fourth grade, students will be able to classify plants and fungi.
4th	<b>Plants</b>	Fungi & Plant Kingdoms	Describe characteristics of each.		5.3.4.E.1		
4th	<b>Ecology</b>	Natural Resources	Research renewable and non-renewable resources.	Which natural resources can be replaced?	5.3.6.C.1 8.2.2. 4 C 1	Present findings on natural resources.	By the end of fourth grade, students will be able to differentiate between natural resources.
4th	<b>Water &amp; Atmosphere</b>	Water cycle	Depict the water cycle as evaporation, condensation, precipitation, and collection.	How does Earth's water move?	5.4.4.G.3 5.4.4.G.4	Draw, label and describe the water cycle.	By the end of fourth grade, students will be able to explain the water cycle.
4th	<b>Water &amp; Atmosphere</b>	Clouds	Identify different cloud types and predict weather from each.	How does weather move?	5.4.4.G.1 5.4.4.G.2 5.4.6.E.1	Label clouds at various levels and pressure systems and use that information to predict current and future weather.	By the end of fourth grade, students will be able to describe the make-up of the atmosphere as it relates to weather.
4th	<b>Water &amp; Atmosphere</b>	Air pressure/Temperature	Describe a high and low pressure system.		5.2.6.C.3 5.4.6.F.1 5.4.6.G.1		
4th	<b>Water &amp; Atmosphere</b>	Components of air	Identify that air is made of nitrogen, oxygen and other gases.		5.4.4.F.1		
4th	<b>Water &amp; Atmosphere</b>	Instrumentation	Exhibit proficiency in reading thermometers, rain gauges, anemometers & barometers.	How is weather forecasted?	5.4.4.F.1	Read and record precise measurements from weather instruments; read and interpret weather maps and use this data to predict weather.	By the end of fourth grade, students will be able to use weather instruments and weather maps to predict weather.
4th	<b>Water &amp; Atmosphere</b>	Weather maps and forecasting	Identify symbols on a weather map (L, H, cold front, warm front).				
4th	<b>Water &amp; Atmosphere</b>	Climate vs. weather	Compare and contrast weather and climate.	How does climate effect us?	5.4.6.F.2	Differentiate between weather and climate.	By the end of fourth grade, students will be able to explain how climate impacts our lives.
4th	<b>Water &amp; Atmosphere</b>	Human impact on climates	Debate current climate issues.				

Grade	Topic	CONTENT	SKILLS	Essential Questions	CCCS	Assessments	Benchmarks
4th	<b>Astronomy</b>	Universe	Define universe as being composed of galaxies, solar systems, meteors, meteorites, meteoroids, comets, black holes, and the Kuiper belt.	What are the parts and distances in the Universe?	5.4.4.A.1	Name and describe parts of the universe.	By the end of fourth grade, students will be able to identify and describe the parts of the universe.
4th	<b>Astronomy</b>	Planets	Name the planets, size of each, distance from sun, and number of moons.		5.4.4.A.4	Build a relative model of the solar system.	
4th	<b>Astronomy</b>	Solid vs. gas planets	Name the solid planets; name the gas planets.				
4th	<b>Astronomy</b>	Star Maps	Read a star map.			Use a star map.	
4th	<b>Astronomy</b>	Light Year	Define the distance light travels in a year.				
4th	<b>Astronomy</b>	Solar and lunar eclipse	Model solar and lunar eclipse.	How does the position of objects in the solar system effect the Earth?	5.4.4.A.1 5.4.8.A.1	Simulate eclipses, seasons, tides and phases of the moon.	By the end of fourth grade, students will be able to describe the effects of movement within the solar system.
4th	<b>Astronomy</b>	Tilt of earth related to seasons	Experiment to demonstrate understanding of seasons.		5.4.6.A.2		
4th	<b>Astronomy</b>	Phases of the moon	Identify 8 phases of the moon; distinguish waxing vs. waning.		5.4.4.A.2		
	<b>Astronomy</b>	Gravity	Experiment with rate of falling objects and explain results.		5.2.4.E.4 5.4.4.A.3		
4th	<b>Astronomy</b>	Tides	Express how the Moon and Sun cause the tides of Earth's oceans.		5.4.8.A.1		
4th	<b>Astronomy</b>	Magnetic field of Earth and poles	Use a compass to detect magnetic north; draw a diagram of Earth's magnetic field.		5.2.6.E.2 5.4.6.D.3		
4th	<b>Astronomy</b>	Historical views	Compare and contrast current and historical views.	How does new information change our understanding of the Universe?		Read and report on historical views and current space missions.	By the end of fourth grade, students will be able to explain how information gathering changes our views of the universe.
4th	<b>Astronomy</b>	Current space missions	Discuss current space missions.				
4th	<b>Forces</b>	Newton's Laws of Motion	Analyze the three laws and match to real world applications.	How does motion affect objects in our world?	5.2.4.E.1	Demonstrate the three laws of motion.	By the end of fourth grade, students will be able to recognize the three laws of motion.
4th	<b>Forces</b>	Magnets	Identify characteristics of Earth's magnetic field.	How do magnets help us?	5.2.4.E.3 5.2.6.E.2 5.4.6.D.3	Experiment with simple motors and demonstrate how magnets operate within the motor.	By the end of fourth grade, students will be able to demonstrate the importance of magnets to a motor.
4th	<b>Forces</b>	Motors	Describe how a motor works, construct a motor.		5.2.4.E.2		
4th	<b>Forces</b>	Simple vs. Complex Machines	Define work, force, friction, and power.	What are the differences between simple and complex machines?	5.2.4.E.2	Build a complex machine and report on how each simple machine works to make the complex machine work.	By the end of fourth grade, students will be able to compare and contrast simple and complex machines.
		Demonstrate understanding of all simple machines and explain how a complex machine differs.	5.2.4.E.1				

Grade	Topic	CONTENT	SKILLS	Essential Questions	CCCS	Assessments	Benchmarks
4th	<b>Electricity</b>	Sources	Name different sources of electrical energy.	How are the various sources of electricity generated and delivered to people?	5.2.4.C.1	Name the various sources of energy.	By the end of fourth grade, students will be able to relate the turning of a turbine (by various sources) to the generation of electricity.
4th	<b>Electricity</b>	Safety	Demonstrate safe practice and procedure for working with electricity.		5.1		
4th	<b>Electricity</b>	Static Electricity	Describe static electricity and experiment.		5.2.4.C.1	Differentiate AC/DC/Static electricity. Categorize devices as to AC and DC.	
4th	<b>Electricity</b>	AC/DC	Describe difference between AC and DC.		5.2.6.D.1		
4th	<b>Electricity</b>	Electrical circuits	Build a simple, series and parallel circuit; compare and contrast each.	How do the components in an electrical circuit work?	5.2.4.D.1	Employ the scientific method to design, illustrate, and build series and parallel circuits.	By the end of fourth grade, students will be able to design and construct schematics and circuits that power multiple devices in a switchable circuit.
4th	<b>Electricity</b>	Circuit diagrams (schematics)	Illustrate a circuit using schematics.		5.2.4.D.1		
4th	<b>Electricity</b>	Electromagnets	Build an electromagnet.		5.2.4.E.3		

Grade	Topic	CONTENT	SKILLS	Essential Questions	CCCS	Assessments	Benchmarks	
5th	<b>Animals</b>	Characteristics of Kingdoms (Animal, Plant, Fungi, single cell organisms)	Classify living things in a variety of ways and justify how they are grouped based on their differences in structure.	How do we classify living things?	5.3.4.A.1	Sort living things by characteristics into Kingdom, Phylum, Class, Order, Family, Genus and Species.	By the end of fifth grade, students will be able to classify living things by kingdom, habitat and reproduction.	
5th	<b>Animals</b>	Habitats	Investigate the relationship between the living and non-living components of habitats.		5.3.4.C.1			
5th	<b>Animals</b>	Sexual/Asexual reproduction	Identify the difference/benefits between sexual and asexual reproduction.		5.3.4.A.1 5.3.6.D.1			
5th	<b>Animals</b>	Micro-organisms	Describe/Draw the appearance of several simple uni- and multi-cellular organisms.	How do we investigate the unseen world?		Observe, identify, diagram and record various micro-organisms.	By the end of fifth grade, students will be able to use a microscope to observe microscopic organisms.	
5th	<b>Human Body</b>	Cells	Label the parts of an animal cell; compare/contrast to plant cell.	What are the building blocks of the body?	5.3.6.A.2 5.3.8.A.1	Label the basic parts of a plant and animal cell.	By the end of fifth grade, students will be able to label the basic parts of a cell, explain how the cell is the basic building block of organisms.	
5th	<b>Human Body</b>	Tissues	Illustrate the internal organization scheme (cells make tissues, tissues make organs, etc).		5.3.8.A.2			List the types of tissues that work together to help the heart pump blood.
5th	<b>Human Body</b>	Organs	Describe that an organ is composed of different types of tissues working together for a specific function.		5.3.8.A.2			
5th	<b>Ecology</b>	Human impact on environment	Experiment how human-generated pollutants effect a closed habitat; analyze and evaluate the experimental results and propose solutions to human's negative impact upon the environment.	How do human beings impact the environment?	5.3.6.C.1 5.3.6.C.2 5.3.6.E.1	Create a closed habitat and record effects of human-generated pollutants.	By the end of fifth grade, students will be able to document human impact on the environment and propose solutions.	
5th	<b>Earth</b>	Processes of Earth	Illustrate and model examples of processes that shape the earth; analyze the relationship between plate tectonics and the "Ring of Fire".	How has the surface of the Earth change?	5.4.6.B.1 5.4.6.B.2 5.4.6.D.1 5.4.8.D.2	Model convergence, divergence, and faulting.	By the end of fifth grade, students will be able to demonstrate changes to the Earth's surface.	
5th	<b>Earth</b>	Erosion	Describe different causes of erosion such as physical and chemical weathering.		5.4.6.B.3 5.4.6.B.4 5.4.6.C.3 5.4.6.D.2			Experiment with variables affecting erosion and deposition using working model.
5th	<b>Matter</b>	Structure of Matter	Label/model the basic parts of atoms.	What are the parts of an atom?	5.2.8.A.1	Diagram an atom including its basic parts.	By the end of fifth grade, students will be able to identify the basic parts of an atom.	
5th	<b>Matter</b>	Solids and liquids	Measure solids and liquids by solubility, density, buoyancy, volume.	What are the properties of matter?	5.2.6.A.1 5.2.6.A.2 5.2.6.A.3 5.2.6.E.4	Experiment and sort matter according to properties.	By the end of fifth grade, students will be able to differentiate the properties of matter.	
5th	<b>Matter</b>	Changes of State	Simulate the molecular differences between states of matter (motion of particles) ; define characteristics of the states of matter through observations.	What are the different ways matter can change state?	5.2.4.A.2 5.2.6.C.3	Experiment with the effects of removing and adding heat to a material.	By the end of fifth grade, students will be able to explain the motion of particles and its relation to the state.	
5th	<b>Matter</b>	Physical & Chemical Changes	Demonstrate, explain, and define the differences of physical and chemical changes and the variables which can affect them.	What is the difference between physical and chemical changes?	5.2.6.A.1 5.2.6.B.1	Design an experiment to demonstrate physical and chemical changes and manipulate the variables.	By the end of fifth grade, students will be able to differentiate between a physical and chemical change.	

Grade	Topic	CONTENT	SKILLS	Essential Questions	CCCS	Assessments	Benchmarks
5th	Light	Human Eye	Explain the role of rods and cones in the retina in processing light.	How do we use light?		Label and define the rods and cones in a human eye.	By the end of fifth grade, students will explain the practical uses of light.
5th	Light	Mirrors	Experiment with angle of incidence by making periscopes and conducting mirror tests.		5.2.6.C.1 5.2.6.C.2	Create a device using mirrors and /or lenses, such as a periscope or telescope, that manipulates light.	
5th	Light	Concave and convex lenses	Describe the operation and practical uses of concave and convex lenses.		5.2.6.C.1 5.2.6.C.2		
5th	Light	Applications for lasers	Identify the everyday use of lasers (scanners, CD players, pointers, measurement, etc).				
5th	Heat	Heat and Temperature	Differentiate between heat and temperature are different; use temperature to measure heat.	How does heat move?	5.2.6.C.1 5.2.6.C.3 5.4.6.G.1 8.2. 8 G 1	Demonstrate through experimentation the movement of heat. Identify the freezing and boiling points of water in Fahrenheit and Celsius.	By the end of fifth grade, students will be able to explain that heat moves to cold via three methods.
5th	Heat	Motion of Particles	Discuss and visually represent the motion of particles during heating and cooling; Demonstrate and explain how matter expands or contracts based on heat; Measure boiling point and freezing point.				
5th	Heat	Movement of Heat	Observe and record the transmission of heat through conduction, convection, and radiation; Diagram the flow of heat in each form.				

Grade	Topic	CONTENT	SKILLS	Essential Questions	CCCS	Assessments	Benchmarks
<b>Classroom Teacher Units</b>							
K	<b>Plants</b>	Plant Growth	Grow a plant; observe its growth.	How do plants grow?	5.3.2.A.1 5.3.2.B.3	Describe the changes that occur in a plant as it grows from seed to maturity.	By the end of kindergarten, students will be able to discuss the changes that occur through a plant's life.
K	<b>Plants</b>	Seasonal Changes	Observe and compare a tree through the seasons.		5.3.2.A.1 5.3.2.B.3		
K	<b>Animals</b>	Local Species	Identify 1 mammal, 1 fish, 1 bird, 1 insect, and 1 reptile or amphibian living in our area; identify animals living in other regions.	What are some animals living in our area?	5.3.2.A.1	Name animals that live in the state of New Jersey. Describe their shelters and diet.	By the end of kindergarten, students will be able to name various animals that are native to New Jersey and describe their needs.
K	<b>Animals</b>	Needs	Identify needs of animals.		5.3.2.A.1 5.3.2.B.1 5.3.2.B.2		
K	<b>Human Body</b>	Hygiene	Use proper hand washing techniques.	How does our body work, change, and keep healthy?	5.3.4.A.2	Demonstrate proper handwashing techniques and use of tissues. Describe and classify materials using the five senses. Use scales and rulers to measure changes in the body over time.	By the end of kindergarten, students will be able to name and use their five senses to investigate the world around them.
K	<b>Human Body</b>	Senses	Name and use the five senses.		5.3.4.A.2		
K	<b>Human Body</b>	Growth	Compare height/weight change throughout year.		5.3.4.A.1		
K	<b>Weather</b>	Seasons	Name the four seasons.	In what ways does weather change?	5.4.2.F.1	List the four seasons and the weather changes throughout. Name the colors of the rainbow in sequence from top to bottom. Use symbols, numbers, or words to record daily weather. Use instruments to measure weather.	By the end of kindergarten, students will be able to name and differentiate the four seasons.
K	<b>Weather</b>	Seasonal Changes	Identify appropriate dress/activities for each season.		5.4.2.F.1		
K	<b>Weather</b>	Rainbows	Color a rainbow in proper sequence.		5.4.4.G.2		
K	<b>Weather</b>	Recording Data	Record daily weather over a period of a month.		5.1.4.B.3 5.1.4.D.1 5.4.2.F.1		
K	<b>Weather</b>	Instrumentation	Use weather instruments.		5.1.4.D.3 5.1.4.B.2 5.4.2.F.1		
K	<b>Matter</b>	Classifying	Classify objects by color, size shape, texture.	How are materials different from one another?	5.2.2.A.1 5.2.2.A.2	Sort objects according to differences in size, shape, color, texture, weight or other differences in physical properties.	By the end of kindergarten, students will be able to compare and sort objects based on physical properties.
K	<b>Matter</b>	Weight	Compare weights of different objects.		5.2.4.A.3		
K	<b>Light</b>	Shadow	Produce a shadow.	What causes a shadow?	5.2.2.C.3	Use a light source and an opaque object to create a shadow.	By the end of kindergarten, students will be able to recognize how light and objects interact to create shadows.
K	<b>Heat</b>	Temperature	Compare hot versus cold.	What is temperature?	5.2.2.C.1 5.2.4.C.1	Use sense of touch to differentiate hot and cold. Demonstrate how a thermometer reacts to temperature changes.	By the end of kindergarten, students will be able to use thermometers and sense of touch to evaluate the temperature.
K	<b>Sound</b>	Volume	Discuss volume.	How can sound change?	5.2.4.C.1	Use musical instruments, vocal chords, etc. to create sounds of varying volume.	By the end of kindergarten, students will be able to create, control, and describe various levels of sound.
K	<b>Sound</b>	Differences in Volume	Demonstrate loud and soft levels of sound.		5.2.4.C.1		

Grade	Topic	CONTENT	SKILLS	Essential Questions	CCCS	Assessments	Benchmarks
1st	<b>Habits of Mind</b>	Asking Questions	Formulate questions about a given topic.	How do you describe the world around you?	5.1.4.A.2 5.1.4.A.3 5.1.4.D.1	Use questioning, observing, writing, and illustrating skills in the investigation of their world.	By the end of first grade, students will be able to question, observe, and describe the world around them.
1st		Describing Objects	Draw a picture or diagram based on verbal description.		5.1.4.A.3		
1st		Comparing Objects	Compare objects based on quantity, shape, texture, size, weight, color, and/or motion.		5.1.4.A.3		
1st	<b>Plants</b>	Planting Seeds	Plant a seed and observe its growth.	How do plants grow?	5.3.2.A.1 5.3.4.A.1	Record a plant's growth over a period of time.	By the end of first grade, students will be able to observe and record the changes that occur through a plant's life.
1st		Plant Growth			5.3.2.B.1		
1st	<b>Animals</b>	Needs	Identify differences in needs, habitats, and behaviors of mammals, fish, birds, reptiles, or amphibians.	How are animals different from one another?	5.3.2.B.1 5.3.2.B.2	Report on the need, habitats, and behaviors of mammals, fish, birds, reptile, or amphibians.	By the end of first grade, students will be able to recognize that while organisms vary in habitats and behaviors their needs are the same.
1st		Coping with Changes			5.3.2.E.2		
1st		Habitats			5.3.2.C.1 5.3.2.C.2		
1st	<b>Human Body</b>	Hygiene	Use proper hand washing techniques.	How are people different from one another?	5.32.A.1	Use observation, data collection, and measurement to compare differences and measure changes in people.	By the end of first grade, students will be able to identify differences among individuals and changes in physical characteristics.
1st		Growth	Compare height/weight throughout the year.		5.3.2.E.1 5.3.E.1		
1st		Inside vs. Outside	Recognize similarities and differences among people.		5.4.4.F.1		
1st	<b>Weather</b>	Instrumentation	Use thermometers, rain gauges, and observation to tell about the weather.	How does weather change?	5.4.4.F.1	Use observation, data collection, and measurement to report the weather.	By the end of first grade, students will be able to recognize that weather varies from day to day and season to season.
1st		Seasonal Changes	Describe seasonal patterns.				
1st	<b>Matter</b>	Using Senses	Name and use the five senses to investigate different forms of matter.	How can different materials be grouped?	5.4.2.G.4 5.4.2.G.2	Evaluate and sort objects into groups based on physical properties.	By the end of first grade, students will be able to describe, compare, and sort matter based on size, shape, color, texture, smell, sound, taste and state.
1st	<b>Ecology</b>	Renew	Differentiate objects that can be renewed, reused, and recycled from those that cannot.	How can we reduce the trash we send to landfills?	5.4.2.G.2 5.4.2.G.4	Name objects that can be renewed, reused, and recycled and those that cannot.	By the end of first grade, students will be able to identify three ways to reduce humans' environmental impact.
1st		Reuse			5.4.2.G.2 5.4.2.G.4		
1st		Recycle			5.4.2.G.4 5.4.2.G.2		

Grade	Topic	CONTENT	SKILLS	Essential Questions	CCCS	Assessments	Benchmarks
2nd	Plants	Structure and function of plants	Describe the structure and function of plants.	How do plants change over time?	5.3.4.A.2	Observe and record a plant's life from seed to seed.	By the end of second grade, students will be able to describe the life cycle and needs of a plant.
2nd	Plants	Observation of plant growth	Observe and document changes in plants over time.		5.3.2.A.1		
2nd	Plants	Life cycle of plants	Describe a plant's life from seed to seed.		5.3.2.A.1		
2nd	Plants	Needs of a Plant	Identify and explain the needs of plants (water, air, sun, nutrients, space).		5.3.2.B.1 5.4.2.E.1		
2nd	Plants	Uses of plants	List uses of plants other than just for eating.				
2nd	Plants	Respiration	Define and explain plant respiration.	How do plants breathe and make food?	5.3.2.B.1 5.3.2.B.2	Match the vocabulary to the plant process.	By the end of second grade, students will be able to name the life processes of a plant.
2nd	Plants	Photosynthesis	Describe the main purpose of photosynthesis.		5.3.6.B.1 5.3.2.B.3		
2nd	Plants	Pollination/Reproduction	List pollination mechanisms (wind, water, animal).		5.3.4.A.1		
2nd	Water & Atmosphere	Water cycle (evaporation, condensation, precipitation, collection)	Illustrate the components of the water cycle.	What is weather?	5.4.2.G.1 5.4.4.G.3	Draw and label the water cycle.	By the end of second grade, students will be able to describe the components of weather and weather related events.
2nd	Water & Atmosphere	Types of precipitation (snow, hail, sleet, freezing rain, rain)	List and describe different types of precipitation.		5.4.4.G.2	List and describe the different forms of water that fall as precipitation.	
2nd	Water & Atmosphere	Weather (define components – air, sun, water)	Express how sun, air and water interact to produce weather.		5.4.8.E.1	Name the components of weather and tell how they interact to create weather.	
2nd	Water & Atmosphere	Clouds	Identify cumulus, stratus, and cirrus clouds.		5.4.4.G.1	Label an illustration or picture of a cloud and describe the current weather when those clouds are present.	
2nd	Water & Atmosphere	Weather data	Measure and record components of weather using thermometers and observations.		5.4.4.F.1	Log weather data and use it to create graph.	
2nd	Water & Atmosphere	Bodies of water	List bodies of water (oceans, lakes, ponds, streams, rivers).	Where is water on Earth?	5.4.4.G.3	List and label bodies of water on a map or globe.	By the end of second grade, students will be able to name and locate the four oceans and other water sources.
2nd	Water & Atmosphere	Identify oceans by name	Locate Pacific, Atlantic, Indian, and Southern Oceans on a map or globe.		5.4.4.G.4		
3rd	Earth	Sources of water	Identify and locate sources of groundwater and surface water; describe importance of each.	How are the different sources of water on the Earth's surface different?	5.4.4.G.4	Label or identify on maps and/or pictures of different sources of water.	By the end of third grade, the students will be able to identify sources of water and describe some characteristics, especially fresh vs. salt water.
3rd	Earth	Rocks	Describe origin and properties of metamorphic, igneous and sedimentary rocks.	Are all rocks and minerals the same?	5.4.4.C.1 5.4.4.C.2	Record results while performing field tests (hardness, streak, magnetism, transparency, luster, and shape) to compare and contrast various minerals. Identify minerals using a field guide/field notes.	By the end of third grade, the students will be able to perform field tests to identify rocks and minerals.
3rd	Earth	Minerals	Identify properties and uses of minerals.				
3rd	Earth	Field Tests	Perform field tests to identify minerals.				
3rd	Human Body	Skeletal System	Identify, locate and describe bones and joints of body.	How do the parts of the body work?	5.3.4.A.3	Build models of skeletal and muscular systems.	By the end of third grade, students will be able to identify the parts of the skeletal and muscular systems and demonstrate how they work together to produce movement.
3rd	Human Body	Muscular Systems	Identify, locate and describe muscles, ligaments and tendons of the body; describe purpose.				

Grade	Topic	CONTENT	SKILLS	Essential Questions	CCCS	Assessments	Benchmarks	
4th	<b>Sound</b>	Sound discrimination	Describe the types of sound that can be made by objects.	How are different sounds made?	5.2.4.C.1	Build musical instruments and experiment with sound properties through instrument manipulation.	By the end of fourth grade, the student will be able to implement their knowledge of the properties of sound.	
4th	<b>Sound</b>	Pitch vs. Volume	Compare and contrast pitch and volume; build musical instruments.					
4th	<b>Sound</b>	Recording and transmission of sound	Compare and contrast (records, cassettes, CDs and Digital formats).	How do living things use sound to their benefit?			Research and report on human use of different sound media and devices.	By the end of fourth grade, the student will be able to describe the practical applications of sound.
4th	<b>Sound</b>	Amplification	Experiment with electrical and non-electrical methods of amplification.					
4th	<b>Sound</b>	Uses of sound in the world around us	List examples (Doppler, ultrasound, echolocation, sonar).					
4th	<b>Birds and the Diversity of Life</b>	Food Webs	Identify how energy is transferred in a food web and how an organism fits into the food web.	How is energy passed through a food web?	5.3.4.B.1 5.3.4.B.2 5.3.6.B.1 5.3.6.B.2	Draw and label the components of a food web and the role of each part of the food web.	By the end of fourth grade, the student will be able to show that energy can be traced back to plants and ultimately the sun.	
4th	<b>Birds and the Diversity of Life</b>	Survival and Adaptations	Identify various ways that living things survive in their environment through adaptations.	How do living things survive and adapt in different habitats.	5.3.4.C.2 5.3.4.E.1 5.3.4.E.2	Compare and contrast various structures and behaviors of living things and explain how they enable the organism to survive in their habitats.	By the end of fourth grade, the student will be able to show that energy can be traced back to plants and ultimately the sun.	
4th	<b>Birds and the Diversity of Life</b>	Habitats	Describe the elements of an organism's habitat and describe the connections between the organism and the environment.	How are organisms connected to their habitat?	5.3.4.C.1 5.3.6.C.3	Describe the habitat of an organism and explain why it survives in that habitat.	By the end of fourth grade, the student will be able to identify the elements of an organism's habitat and the link to its environment.	
4th	<b>Birds and the Diversity of Life</b>	Human Impact	Describe how humans impact the stability and diversity of an ecosystem.	How do humans impact the environment and ecosystems.	5.3.6.E.1 5.4.6.G.3	Investigate how humans both positively and negatively affect ecosystems and suggest ways to improve the stability of the environments.	By the end of fourth grade, the student will be able to explain how humans affect ecosystems and suggest strategies to improve our affect on the environment.	
5th	<b>Earth</b>	Landforms	Identify types of landforms. Demonstrate the formation of landforms.	How is land shaped?	5.4.6.D.2	Use aerial, topographic maps and photos to identify landforms.	By the end of fifth grade, students will be able to identify different landforms both from photographs and topographical maps	
	<b>Earth</b>	Topographical Maps	Create and examine topographical maps.			Build a three dimensional model from a two dimensional topographical map.		
5th	<b>Human Body</b>	Body Systems	Describe the interconnectedness of human body systems.	How do systems work together?	5.3.6.A.1	Describe the combined role of the following: (1) circulatory & respiratory systems in the exchange of gases in the human body, (2) muscular and skeletal systems in the production of movements, (3) how the digestive system helps provide the raw materials for energy to other body systems	By the end of fifth grade, students will be able to identify parts and function of the skeletal, muscular, circulatory, respiratory and digestive systems and how they work together.	