Georgia Science Standards 2004	Presentation
Kindergarten	
Earth Science	
SKE1. Students will describe time patterns (such as day to night and night to day) and objects (such as sun, moon, stars) in the day and night sky.	
a. Describe changes that occur in the sky during the day, as day turns into night, during the night, and as night turns into day.	Weather
b. Classify objects according to those seen in the day sky and those seen in the night sky.	Weather
c. Recognize that the Sun supplies heat and light to Earth.	Light and Dark
SKE2. Students will describe the physical attributes of rocks and soils.	
a. Use senses to observe and group rocks by physical attributes such as large/small, heavy/light, smooth/rough, dark/light, etc.	Rocks
b. Use senses to observe soils by physical attributes such as smell, texture, color, particle/grain size.	Soil
c. Recognize earth materials— soil, rocks, water, air, etc.	Changing Materials
Physical Science	
SKP1. Students will describe objects in terms of the materials they are made of and their physical properties.	
a. Compare and sort materials of different composition (common materials include clay, cloth, paper, plastic, etc.).	Marvellous Materials
b. Use senses to classify common materials, such as buttons or swatches of cloth, according to their physical attributes (color, size, shape, weight, texture, buoyancy, flexibility).	Marvellous Materials
SKP2. Students will investigate different types of motion.	
a. Sort objects into categories according to their motion. (straight, zigzag, round and round, back and forth, fast and slow, and motionless)	Feel the Force
b. Push, pull, and roll common objects and describe their motions.	Feel the Force
SKP3. Students will observe and communicate effects of gravity on objects.	
a. Recognize that some things, such as airplanes and birds, are in the sky, but return to earth.	
b. Recognize that the sun, moon, and stars are in the sky, but don't come down.	
c. Explain why a book does not fall down if it is placed on a table, but will fall down if it is dropped.	
Life Science	
SKL1. Students will sort living organisms and non-living materials into groups by observable physical attributes.	

K-2 Product
3-5 Product

a. Recognize the difference between living organisms and nonliving materials.	Living Things
b. Group animals according to their observable features such as appearance, size, motion, where it lives, etc. (Example: A green frog has four legs and hops. A rabbit also hops.)	Animals and Plants
c. Group plants according to their observable features such as appearance, size, etc.	Animals and Plants
SKL2. Students will compare the similarities and differences in groups of organisms.	
a. Explain the similarities and differences in animals. (color, size, appearance, etc.)	Animals and Plants
b. Explain the similarities and differences in plants. (color, size, appearance, etc.)	Animals and Plants
c. Recognize the similarities and differences between a parent and a baby.	Growing Up
d. Match pictures of animal parents and their offspring explaining your reasoning. (Example: dog/puppy; cat/kitten; cow/calf; duck/ducklings, etc.)	Growing Up
e. Recognize that you are similar and different from other students. (senses, appearance)	Living Things
Grade One	
Earth Science	
S1E1. Students will observe, measure, and communicate weather data to see patterns in weather and climate.	
a. Identify different types of weather and the characteristics of each type.	Weather
b. Investigate weather by observing, measuring with simple weather instruments (thermometer, wind vane, rain gauge), and recording weather data (temperature, precipitation, sky conditions, and weather events) in a periodic journal or on a calendar seasonally.	Weather
c. Correlate weather data (temperature, precipitation, sky conditions, and weather events) to seasonal changes.	Weather
S1E2. Students will observe and record changes in water as it relates to weather.	
a. Recognize changes in water when it freezes (ice) and when it melts (water).	Hot and Cold
b. Identify forms of precipitation such as rain, snow, sleet, and hailstones as either solid (ice) or liquid (water).	Weather Hot and Cold
c. Determine that the weight of water before freezing, after freezing, and after melting stays the same.	
d. Determine that water in an open container disappears into the air over time, but water in a closed container does not.	
Physical Science	
S1P1. Students will investigate light and sound.	
a. Recognize sources of light.	Light and Dark
b. Explain how shadows are made.	Light and Dark Shadows

c. Investigate how vibrations produce sound.	Senses
d. Differentiate between various sounds in terms of (pitch) high or low and (volume) loud or soft.	Sounds
e. Identify emergency sounds and sounds that help us stay safe.	Senses
S1P2. Students will demonstrate effects of magnets on other magnets and other objects.	
a. Demonstrate how magnets attract and repel.	Magnets
b. Identify common objects that are attracted to a magnet.	Magnets Mysterious Magnets
c. Identify objects and materials (air, water, wood, paper, your hand, etc.) that do not block magnetic force.	
Life Science	
S1L1. Students will investigate the characteristics and basic needs of plants and animals.	
a. Identify the basic needs of a plant: air, water, light, nutrients.	Living Things
b. Identify the basic needs of an animal: air, water, food, shelter.	Living Things
c. Identify the parts of a plant—root, stem, leaf, and flower.	Growing Plants Animals and Plants
d. Compare and describe various animals—appearance, motion, growth, basic needs.	Animals and Plants
Grade Two	
Earth Science	
S2E1. Students will understand that stars have different sizes, brightness, and patterns.	
a. Describe the physical attributes of stars—size, brightness, and patterns.	Our Solar System
S2E2. Students will investigate the position of sun and moon to show patterns throughout the year.	
a. Investigate the position of the sun in relation to a fixed object on earth at various times of the day.	Shadows
b. Determine how the shadows change through the day by making a shadow stick or using a sundial.	Shadows
c. Relate the length of the day and night to the change in seasons (for example: Days are longer than the night in the summer.).	Shadows Days and Seasons
d. Use observations and charts to record the shape of the moon for a period of time.	The Moon
S2E3. Students will observe and record changes in their surroundings and infer the causes of the changes.	

a. Recognize effects that occur in a specific area caused by weather, plants, animals, and/or people.	Weather Habitats
Physical Science	
S2P1. Students will investigate the properties of matter and changes that occur in objects.	
a. Identify the three common states of matter as solid, liquid, or gas.	Changing State
b. Investigate changes in objects by tearing, dissolving, melting, squeezing, etc.	Hot and Cold Changing Materials
S2P2. Students will identify sources of energy and how the energy is used.	
a. Identify sources of light energy, heat energy, and energy of motion.	Energy Forms
b. Describe how light, heat, and motion energy are used.	Energy Forms
S2P3. Students will demonstrate changes in speed and direction using pushes and pulls.	
a. Demonstrate how pushing and pulling an object affects the motion of the object.	Feel the Force
b. Demonstrate the effects of changes of speed on an object.	Feel the Force
Life Science	
S2L1. Students will investigate the life cycles of different living organisms.	
a. Determine the sequence of the life cycle of common animals in your area: a mammal such as a cat or dog or classroom pet, a bird such as a chicken, an amphibian such as a frog, and an insect such as a butterfly.	Growing Up
b. Relate seasonal changes to observations of how a tree changes throughout a school year.	Days and Seasons
c. Investigate the life cycle of a plant by growing a plant from a seed and by recording changes over a period of time.	Plant Reproduction
d. Identify fungi (mushroom) as living organisms.	
Grade Three	
Earth Science	
S3E1. Students will investigate the physical attributes of rocks and soils.	
a. Explain the difference between a rock and a mineral.	
b. Recognize the physical attributes of rocks and minerals using observation (shape, color, texture), measurement, and simple tests (hardness).	Rocks
c. Use observation to compare the similarities and differences of texture, particle size, and color in top soils (such as clay, loam or potting soil, and sand).	Soil
d. Determine how water and wind can change rocks and soil over time using observation and research.	Erosion, Transportation and Deposition
S3E2. Students will investigate fossils as evidence of organisms that lived long ago.	

a. Investigate fossils by observing authentic fossils or models of fossils or view information resources about fossils as evidence of organisms that lived long ago.	Fossils
b. Describe how a fossil is formed.	Fossils
Physical Science	
S3P1. Students will investigate how heat is produced and the effects of heating and cooling, and will understand a change in temperature indicates a change in heat.	
a. Categorize ways to produce heat energy such as burning, rubbing (friction), and mixing one thing with another.	Energy Forms
b. Investigate how insulation affects heating and cooling.	Insulators and Conductors
c. Investigate the transfer of heat energy from the sun to various materials.	Energy Forms Food Chains
d. Use thermometers to measure the changes in temperatures of water samples (hot, warm, cold) over time.	Changing State
S3P2. Students will investigate magnets and how they affect other magnets and common objects.	
a. Investigate to find common objects that are attracted to magnets.	Magnets
b. Investigate how magnets attract and repel each other.	Magnets
Life Science	
S3L1. Students will investigate the habitats of different organisms and the dependence of organisms on their habitat.	
a. Differentiate between habitats of Georgia (mountains, marsh/swamp, coast, Piedmont, Atlantic Ocean) and the organisms that live there.	
b. Identify features of green plants that allow them to live and thrive in different regions of Georgia.	Growing Plants
c. Identify features of animals that allow them to live and thrive in different regions of Georgia.	Habitats Adaptations
d. Explain what will happen to an organism if the habitat is changed.	Habitats Adaptations Interdependence
S3L2. Students will recognize the effects of pollution and humans on the environment.	
a. Explain the effects of pollution (such as littering) to the habitats of plants and animals.	Habitats Pollution
b. Identify ways to protect the environment: conservation of resources, recycling of materials.	Pollution
Grade Four	

Earth Science	
S4E1. Students will compare and contrast the physical attributes of stars, star patterns, and planets.	
a. Recognize the physical attributes of stars in the night sky such as number, size, color and patterns.	Our Solar System
b. Compare the similarities and differences of planets to the stars in appearance, position, and number in the night sky.	Our Solar System
c. Explain why the pattern of stars in a constellation stays the same, but a planet can be seen in different locations at different times.	Our Solar System
d. Identify how technology is used to observe distant objects in the sky.	Our Solar System
S4E2. Students will model the position and motion of the earth in the solar system and will explain the role of relative position and motion in determining sequence of the phases of the moon.	
a. Explain the day/night cycle of the earth using a model.	Days and Seasons
b. Explain the sequence of the phases of the moon.	The Moon
c. Demonstrate the revolution of the earth around the sun and the earth's tilt to explain the seasonal changes.	Days and Seasons
d. Demonstrate the relative size and order from the sun of the planets in the solar system.	Our Solar System
S4E3. Students will differentiate between the states of water and how they relate to the water cycle and weather.	
a. Demonstrate how water changes states from solid (ice) to liquid (water) to gas (water vapor/steam) and changes from gas to liquid to solid.	Changing State
b. Identify the temperatures at which water becomes a solid and at which water becomes a gas.	Changing State
c. Investigate how clouds are formed.	Predicting the Weather Water Cycle
d. Explain the water cycle (evaporation, condensation, and precipitation).	Water Cycle
e. Investigate different forms of precipitation and sky conditions. (rain, snow, sleet, hail, clouds, and fog).	Predicting the Weather Water Cycle
S4E4. Students will analyze weather charts/maps and collect weather data to predict weather events and infer patterns and seasonal changes.	
a. Identify weather instruments and explain how each is used in gathering weather data and making forecasts (thermometer, rain gauge, barometer, wind vane, anemometer).	Predicting the Weather
b. Using a weather map, identify the fronts, temperature, and precipitation and use the information to interpret the weather conditions.	Predicting the Weather

c. Use observations and records of weather conditions to predict weather patterns throughout the year.	Predicting the Weather
d. Differentiate between weather and climate.	Predicting the Weather
Physical Science	
S4P1. Students will investigate the nature of light using tools such as mirrors, lenses, and prisms.	
a. Identify materials that are transparent, opaque, and translucent.	Shadows
b. Investigate the reflection of light using a mirror and a light source.	Reflection and Refraction
c. Identify the physical attributes of a convex lens, a concave lens, and a prism and where each is used.	
S4P2. Students will demonstrate how sound is produced by vibrating objects and how sound can be varied by changing the rate of vibration.	
a. Investigate how sound is produced.	Sounds
b. Recognize the conditions that cause pitch to vary.	Sounds
S4P3. Students will demonstrate the relationship between the application of a force and the resulting change in position and motion on an object.	
a. Identify simple machines and explain their uses (lever, pulley, wedge, inclined plane, screw, wheel and axle).	
b. Using different size objects, observe how force affects speed and motion.	Forces Gravity
c. Explain what happens to the speed or direction of an object when a greater force than the initial one is applied.	Forces
d. Demonstrate the effect of gravitational force on the motion of an object.	Gravity
Life Science	
S4L1. Students will describe the roles of organisms and the flow of energy within an ecosystem.	
a. Identify the roles of producers, consumers, and decomposers in a community.	Food Chains Interdependence
b. Demonstrate the flow of energy through a food web/food chain beginning with sunlight and including producers, consumers, and decomposers.	Food Chains
c. Predict how changes in the environment would affect a community (ecosystem) of organisms.	Habitats Adaptations Interdependence
d. Predict effects on a population if some of the plants or animals in the community are scarce or if there are too many.	Adaptations Interdependence

S4L2. Students will identify factors that affect the survival or extinction of organisms such as adaptation, variation of behaviors (hibernation), and external features (camouflage and protection).	
a. Identify external features of organisms that allow them to survive or reproduce better than organisms that do not have these features (for example: camouflage, use of hibernation, protection, etc.).	Adaptations
b. Identify factors that may have led to the extinction of some organisms.	Adaptations
Grade Five	
Earth Science	
S5E1. Students will identify surface features of the Earth caused by constructive and destructive processes.	
a. Identify surface features caused by constructive processes: deposition (deltas, sand dunes, etc.), earthquakes, volcanoes, faults)	Erosion, Transportation and Deposition
b. Identify and find examples of surface features caused by destructive processes: erosion (water—rivers and oceans, wind), weathering. impact of organisms, earthquake, volcano	Erosion, Transportation and Deposition
c. Relate the role of technology and human intervention in the control of constructive and destructive processes. Examples include, but are not limited to: seismological studies, flood control, (dams, levees, storm drain management, etc.), beach reclamation (Georgia coastal islands)	
Physical Science	
S5P1. Students will verify that an object is the sum of its parts.	
a. Demonstrate that the mass of an object is equal to the sum of its parts by manipulating and measuring different objects made of various parts.	
b. Investigate how common items have parts that are too small to be seen without magnification.	
S5P2. Students will explain the difference between a physical change and a chemical change.	
a. Investigate physical changes by separating mixtures and manipulating (cutting, tearing, folding) paper to demonstrate examples of physical change.	Separating Mixtures
b. Recognize that the changes in state of water (water vapor/steam, liquid, ice) are due to temperature differences and are examples of physical change.	Changing State
c. Investigate the properties of a substance before, during, and after a chemical reaction to find evidence of change.	Changing State Separating Mixtures
S5P3. Students will investigate the electricity, magnetism, and their relationship.	
a. Investigate static electricity.	
b. Determine the necessary components for completing an electric circuit.	Circuits

c. Investigate common materials to determine if they are insulators or conductors of electricity.	Insulators and Conductors
d. Compare a bar magnet to an electromagnet.	Electromagnets
Life Science	
S5L1. Students will classify organisms into groups and relate how they determined the groups with how and why scientists use classification.	
a. Demonstrate how animals are sorted into groups (vertebrate and invertebrate) and how vertebrates are sorted into groups (fish, amphibian, reptile, bird, and mammal).	Habitats
b. Demonstrate how plants are sorted into groups.	
S5L2. Students will recognize that offspring can resemble parents in inherited traits and learned behaviors.	
a. Compare and contrast the characteristics of learned behaviors and of inherited traits.	
b. Discuss what a gene is and the role genes play in the transfer of traits.	
S5L3. Students will diagram and label parts of various cells (plant, animal, single-celled, multi-celled).	
a. Use magnifiers such as microscopes or hand lenses to observe cells and their structure.	
b. Identify parts of a plant cell (membrane, wall, cytoplasm, nucleus, chloroplasts) and of an animal cell (membrane, cytoplasm, and nucleus) and determine the function of the parts.	
c. Explain how cells in multi-celled organisms are similar and different in structure and	
S5L4. Students will relate how microorganisms benefit or harm larger organisms.	
a. Identify beneficial microorganisms and explain why they are beneficial.	Microorganisms
b. Identify harmful microorganisms and explain why they are harmful.	Microorganisms