	3rd (S3) **DATES: (E1)1/20 – 3/4 ; (E2)3/8 – 3/31**	4TH (S4) **DATES: (E1/E2)1/19 – 2/25 ; (E3/E4) 2/29 – 3/31**	5th (S5) **DATES: (E1) 3/1 – 3/31**
Earth Science (E)	**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). 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). d. Determine how water and wind can change rocks and soil over time using observation and research. **S3E2. Students will investigate fossils as <u>evidence</u> 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. b. Describe how a fossil is formed.	**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. b. Compare the similarities and differences of planets to the stars in appearance, position, and number in the night sky. 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. d. Identify how technology is used to observe distant objects in the sky. **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. b. Explain the sequence of the phases of the moon. c. Demonstrate the revolution of the earth around the sun and the earth's tilt to explain the seasonal changes. d. Demonstrate the relative size and order from the sun of the planets in the 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. b. Identify the temperatures at which water becomes a solid and at which water becomes a gas. c. Investigate how clouds are formed. d. Explain the water cycle (evaporation, condensation, and precipitation).	**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 **b.** Identify and find examples of surface features caused by destructive processes. • Erosion (water—rivers and oceans, wind) • Weathering • Impact of organisms • Earthquake • Volcano **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)

		e. Investigate different forms of precipitation and sky conditions. (rain, snow, sleet, hail, clouds, and fog). **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). b. Using a weather map, identify the fronts, temperature, and precipitation and use the information to interpret the weather conditions. c. Use observations and records of weather conditions to predict weather patterns throughout the year. d. Differentiate between weather and climate.	
Physical Science: Physics	**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. **b.** Investigate how magnets attract and repel each other. **DATES: 12/15 -1/15**	**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. **b.** Investigate the reflection of light using a mirror and a light source. **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. **b.** Recognize the conditions that cause pitch to vary. **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. **c.** Explain what happens to the speed or direction of an object when a greater force than the initial one is applied.	**S5P3. Students will investigate the electricity, magnetism, and their relationship.** **a.** Investigate static electricity. **b.** Determine the necessary components for completing an electric circuit. **c.** Investigate common materials to determine if they are insulators or conductors of electricity. **d.** Compare a bar magnet to an electromagnet. **DATES: 1/12 -2/26 (P/3)**

		d. Demonstrate the effect of gravitational force on the motion of an object. **DATES: 10/19 -11/19 (P1/P2)** **11/30 -1/14 (P3)**	
Physical Science: Chemistry	**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. b. Investigate how insulation affects heating and cooling. c. Investigate the transfer of heat energy from the sun to various materials. d. Use thermometers to measure the changes in temperatures of water samples (hot, warm, cold) over time. **DATES: 11/2 -12/11**	**NONE**	**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. **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. **c.** Investigate the properties of a substance before, during, and after a chemical reaction to find evidence of change. **DATES: 11/9 - 1/8 (P1/P2)**

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. c. Identify features of animals that allow them to live and thrive in different regions of Georgia. d. Explain what will happen to an organism if the habitat is changed. **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. b. Identify ways to protect the environment. • Conservation of resources • Recycling of materials **DATES: 8/17 -10/29**	**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. **b.** Demonstrate the flow of energy through a food web/food chain beginning with sunlight and including producers, consumers, and decomposers. **c.** Predict how changes in the environment would affect a community (ecosystem) of organisms. **d.** Predict effects on a population if some of the plants or animals in the community are scarce or if there are too many. **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.). **b.** Identify factors that may have led to the extinction of some organisms. **DATES: 8/17 -10/15 (Ecology)**	**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). **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 function to single-celled organisms. **S5L4. Students will relate how microorganisms benefit or harm larger organisms.** **a.** Identify beneficial microorganisms and explain why they are beneficial. **b.** Identify harmful microorganisms and explain why they are harmful. **DATES: 8/17 - 9/14 (L3/L4)** **9/16 -10/13 (L2); 10/15 – 11/5 (L1)**