First Grade Standards

The Science Georgia Standards of Excellence are designed to provide foundational knowledge and skills for all students to develop proficiency in science. The Project 2061's *Benchmarks for Science Literacy* and the follow up work, *A Framework for K-12 Science Education* were used as the core of the standards to determine appropriate content and process skills for students. The Science Georgia Standards of Excellence focus on a limited number of core disciplinary ideas and crosscutting concepts which build from Kindergarten to high school. The standards are written with the core knowledge to be mastered integrated with the science and engineering practices needed to engage in scientific inquiry and engineering design. Crosscutting concepts are used to make connections across different science disciplines.

The Science Georgia Standards of Excellence drive instruction. Hands-on, student-centered, and inquiry-based approaches should be the emphasis of instruction. The standards are a required minimum set of expectations that show proficiency in science. However, instruction can extend beyond these minimum expectations to meet student needs. At the same time, these standards set a maximum expectation on what will be assessed by the Georgia Milestones Assessment System.

Science consists of a way of thinking and investigating, as well a growing body of knowledge about the natural world. To become literate in science, students need to possess sufficient understanding of fundamental science content knowledge, the ability to engage in the science and engineering practices, and to use scientific and technological information correctly. Technology should be infused into the curriculum and the safety of the student should always be foremost in instruction.

The First Grade Georgia Standards of Excellence for science engage students in raising questions about the world around them and seeking answers by making observations. First graders use whole numbers to analyze scientific data. They identify how magnets pull on all things made of iron and either attract or repel other magnets. First graders create drawings that correctly depict something being described. The students are asked to plan and carry out simple investigations to understand patterns (shadows, sound, weather, and daily needs of plants and animals) observed in the world around them and make predictions based on these investigations. They follow safety rules.

Earth and Space Science

S1E1. Obtain, evaluate, and communicate weather data to identify weather patterns.

a. Represent data in tables and/or graphs to identify and describe different types of weather and the characteristics of each type.
b. Ask questions to identify forms of precipitation such as rain, snow, sleet, and hailstones as either solid (ice) or liquid (water).
c. Plan and carry out investigations on current weather conditions 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, on a calendar, and graphically.
d. Analyze data to identify seasonal patterns of change.
(*Clarification statement:* Examples could include temperature, rainfall/snowfall, and changes to the environment.)

Physical Science

S1P1. Obtain, evaluate, and communicate information to investigate light and sound.

a. Use observations to construct an explanation of how light is required to make objects visible.
b. Ask questions to identify and compare sources of light.
c. Plan and carry out an investigation of shadows by placing objects at various points from a source of light.
d. Construct an explanation supported by evidence that vibrating materials can make sound and that sound can make materials vibrate.
e. Design a signal that can serve as an emergency alert using light and/or sound to communicate over a distance.

S1P2. Obtain, evaluate, and communicate information to demonstrate the effects of magnets on other magnets and other objects.

a. Construct an explanation of how magnets are used in everyday life.
(*Clarification statement:* Everyday life uses could include refrigerator magnets, toys, magnetic latches, and name tags.)
b. Plan and carry out an investigation to demonstrate how magnets attract and repel each other and the effect of magnets on common objects.

Life Science

S1L1. Obtain, evaluate, and communicate information about the basic needs of plants and animals.

a. Develop models to identify the parts of a plant—root, stem, leaf, and flower.
b. Ask questions to compare and contrast the basic needs of plants (air, water, light, and nutrients) and animals (air, water, food, and shelter).
c. Design a solution to ensure that a plant or animal has all of its needs met.