

Grade 1

Overview

The goal of science in grade one is to provide the opportunity for students to develop the skills of wondering, questioning, investigating, and communicating as the means of making sense of the world. Students will use scientific tools to gather data and carry out investigations and will continue to develop their observation skills as they learn about the life, earth, and physical sciences. First-grade students will explore the sciences within the framework of the following topics: “Plants” (basic needs, structures and life cycles); “Sun and Moon” (features and changes in appearance); “Earth Materials” (composition and properties); and “Exploring Motion” (push or pull and movement).

The grade-one science standards provide richness and a wide variety of learning experiences, materials, and instructional strategies to accommodate a broad range of students’ individual differences. Students will actively engage in their learning by observing, interacting with materials and with people, and asking questions as they explore new concepts and expand their understanding.

Science Standards: Grade 1

Scientific Inquiry

The skills of scientific inquiry, including knowledge and use of tools, are not taught as separate skills in science, but are embedded throughout because these process skills are fundamental to all science instruction and content. A table of the PK–12 of scientific inquiry standards and Indicators: is provided in appendix A.

Standard: **1Sa:** **The student will demonstrate an understanding of scientific inquiry, including the processes, skills, and mathematical thinking necessary to conduct a simple scientific investigation.**

Indicators: **1Sa.1:** Compare, classify, and sequence objects by number, shape, texture, size, color, and motion, using standard English units of measurement where appropriate.

1Sa.2: Use tools (including rulers) safely, accurately, and appropriately when gathering specific data.

1Sa.3: Carry out simple scientific investigations when given clear directions.

1Sa.4: Use appropriate safety procedures when conducting investigations.

Plants

Standard: **1Sb:** **The student will demonstrate an understanding of the special characteristics and needs of plants that allow them to survive in their own distinct environments. (Life Science)**

Indicators: **1Sb.1:** Recall the basic needs of plants (including air, water, nutrients, space, and light) for energy and growth.

1Sb.2: Illustrate the major structures of plants (including stems, roots, leaves, flowers, fruits, and seeds).

1Sb.3: Classify plants according to their characteristics (including what specific type of environment they live in, whether they have edible parts, and what particular kinds of physical traits they have).

1Sb.4: Summarize the life cycle of plants (including germination, growth, and the production of flowers and seeds).

1Sb.5: Explain how distinct environments throughout the world support the life of different types of plants.

1Sb.6: Identify characteristics of plants (including types of stems, roots, leaves, flowers, and seeds) that help them survive in their own distinct environments.

Sun and Moon

Standard: **1Sc:** **The student will demonstrate an understanding of the features of the sky and the patterns of the Sun and the Moon. (Earth Science)**

Indicators: **1Sc.1:** Compare the features of the day and night sky.

1Sc.2: Recall that the Sun is a source of heat and light for Earth.

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1Sc.3: Recognize that the Sun and the Moon appear to rise and set.

1Sc.4: Illustrate changes in the Moon's appearance (including patterns over time).

Earth Materials

Standard: **1Sd:** **The student will demonstrate an understanding of the properties of Earth materials. (Earth Science)**

Indicators: **1Sd.1:** Recognize the composition of Earth (including rocks, sand, soil, and water).

1Sd.2: Classify rocks and sand by their physical appearance.

1Sd.3: Compare soil samples by sorting them according to properties (including color, texture, and the capacity to nourish growing plants).

1Sd.4: Recognize the observable properties of water (including the fact that it takes the shape of its container, flows downhill, and feels wet).

1Sd.5: Illustrate the locations of water on Earth by using drawings, maps, or models.

1Sd.6: Exemplify Earth materials that are used for building structures or for growing plants.

Exploring Motion

Standard: **1Se:** **The student will demonstrate an understanding of the positions and motions of objects. (Physical Science)**

Indicators: **1Se.1:** Classify objects by observable properties (including size, color, shape, magnetic attraction, heaviness, texture, and the ability to float in water).

1Se.2: Compare the properties of different types of materials (including wood, plastic, metal, cloth, and paper) from which objects are made.

1Se.3: Illustrate the fact that sound is produced by vibrating objects.

1Se.4: Illustrate ways in which objects can move in terms of direction and speed (including straight forward, back and forth, fast or slow, zigzag, and circular).