

SCIENCE CONTENT STANDARDS GRADE 1

In Grade One, students learn some of the general properties of solids, liquids, and gases. They also learn about the needs of plants and the functions of some of their external structures. These standards represent natural extensions of the science content studied in kindergarten. Students learn to use simple weather recording instruments, such as thermometers and wind vanes, and discuss daily and seasonal changes in weather. First grade students are adept at identifying the characteristics of objects and can either record those observations through pictures and numbers or begin to use written language. The investigation and experimentation strand emphasizes recording as essential to observing. It is important that students have opportunities to discuss their findings and results with their classmates as they explore scientific phenomena. Teachers should guide students to respond to who, what, when, where, and how questions. They should also encourage students to advance from following one-step instructions to responding to simple two-step directions that are part of the basic science skills needed for recording observations. Students can learn how to make new observations when discrepancies exist between two descriptions of the same object or phenomenon.

Physical Sciences

- **Matter comes in different forms (states) including solids, liquids, and gases.** As a basis for understanding this concept, students know:
 - matter has three forms: solid, liquid and gas.
 - **solids, liquids, and gases have different properties.**
 - the properties of substances can change when the substances are mixed, cooled, or heated.
 - water left in an open container evaporates (goes into the air), but water in a closed container does not.

Life Sciences

- **Plants meet their needs in different ways.** As a basis for understanding this concept, students know:
 - **different plants inhabit different kinds of environments and have external features that help them thrive in different kinds of places.**
 - plants and animals both need water and air; animals need food, and plants need light.
 - the germination, growth and development of plants can be affected by light, gravity, touch or environmental stress.
 - flowers and fruits are associated with reproduction.
 - **roots are associated with the intake of water and soil nutrients, green leaves with making food from sunlight.**

Earth Sciences

- **Weather can be observed, measured and described.** As a basis for understanding this concept, students know:
 - how to use simple tools (e.g., thermometer, wind vane) to measure weather conditions and record changes from day to day and over the seasons.
 - the weather changes from day to day, but trends in temperature or of rain or snow tend to be predictable during a season.
 - the sun warms the land, air, and water.
 - the origin of water used by their local communities.

Science Process Skills (Investigation and Experimentation)

- **Scientific progress is made by asking meaningful questions and conducting careful investigations.** As a basis for understanding this concept, and to address the content the other three strands, students should develop their own questions and perform investigations. Students will:
 - draw pictures that portray some features of the thing being described.
 - **record observations and data with pictures, numbers, and/or written statements.**
 - record observations on a bar graph.
 - describe the relative position of objects using two references (e.g., above and next to, below and left of).
 - make new observations when discrepancies exist between two descriptions of the same object or phenomena.