

# Grade One

The first-grade standards continue to stress basic science skills in understanding familiar objects and events. Students are expected to begin conducting simple experiments and be responsible for some of the planning. Students are introduced to the concept of classifying plants and animals based on simple characteristics. Emphasis is placed on the relationships among objects and their interactions with one another. Students are expected to know the basic relationships between the sun and Earth and between seasonal changes and plant and animal activities. Students will also begin to develop an understanding of moving objects, simple solutions, and important natural resources.

## Scientific Investigation, Reasoning, and Logic

- 1.1 The student will conduct investigations in which
- differences in physical properties are observed using the senses;
  - simple tools are used to enhance observations;
  - objects or events are classified and arranged according to attributes or properties;
  - observations and data are communicated orally and with simple graphs, pictures, written statements, and numbers;
  - length, mass, and volume are measured using standard and nonstandard units;
  - predictions are based on patterns of observation rather than random guesses;
  - simple experiments are conducted to answer questions; and
  - inferences are made and conclusions are drawn about familiar objects and events.

## Force, Motion, and Energy

- 1.2 The student will investigate and understand that moving objects exhibit different kinds of motion. Key concepts include
- objects may have straight, circular, and back-and-forth motions;
  - objects may vibrate and produce sound;
  - pushes or pulls can change the movement of an object; and
  - the motion of objects may be observed in toys and in playground activities.

## Matter

- 1.3 The student will investigate and understand how different common materials interact with water. Key concepts include
- some liquids will separate when mixed with water, but others will not;
  - some common solids will dissolve in water, but others will not; and
  - some substances will dissolve more readily in hot water than in cold water.

## Life Processes

- 1.4 The student will investigate and understand that plants have life needs and functional parts and can be classified according to certain characteristics. Key concepts include
- needs (food, air, water, light, and a place to grow);
  - parts (seeds, roots, stems, leaves, blossoms, fruits); and
  - characteristics (edible/nonedible, flowering/nonflowering, evergreen/deciduous).

- 1.5 The student will investigate and understand that animals, including people, have life needs and specific physical characteristics and can be classified according to certain characteristics. Key concepts include
- a) life needs (air, food, water, and a suitable place to live);
  - b) physical characteristics (body coverings, body shape, appendages, and methods of movement); and
  - c) other characteristics (wild/tame, water homes/land homes).

### **Interrelationships in Earth/Space Systems**

- 1.6 The student will investigate and understand the basic relationships between the sun and the Earth. Key concepts include
- a) the sun is the source of heat and light that warms the land, air, and water; and
  - b) night and day are caused by the rotation of the Earth.

### **Earth Patterns, Cycles, and Change**

- 1.7 The student will investigate and understand the relationship of seasonal change and weather to the activities and life processes of plants and animals. Key concepts include how temperature, light, and precipitation bring about changes in
- a) plants (growth, budding, falling leaves, and wilting);
  - b) animals (behaviors, hibernation, migration, body covering, and habitat); and
  - c) people (dress, recreation, and work).

### **Resources**

- 1.8 The student will investigate and understand that natural resources are limited. Key concepts include
- a) identification of natural resources (plants and animals, water, air, land, minerals, forests, and soil);
  - b) factors that affect air and water quality; and
  - c) recycling, reusing, and reducing consumption of natural resources.