

# Kindergarten

The kindergarten standards stress the use of basic science skills to explore common materials, objects, and living things. Emphasis is placed on using the senses to gather information. Students are expected to develop skills in posing simple questions, measuring, sorting, classifying, and communicating information about the natural world. The science skills are an important focus as students learn about life processes and properties of familiar materials, such as magnets and water. Through phenomena including shadows, patterns of weather, and plant growth, students are introduced to the concept of change. The significance of natural resources and conservation is introduced in the kindergarten standards.

## Scientific Investigation, Reasoning, and Logic

- K.1 The student will conduct investigations in which
- basic properties of objects are identified by direct observation;
  - observations are made from multiple positions to achieve different perspectives;
  - objects are described both pictorially and verbally;
  - a set of objects is sequenced according to size;
  - a set of objects is separated into two groups based on a single physical attribute;
  - nonstandard units are used to measure common objects;
  - a question is developed from one or more observations;
  - picture graphs are constructed using 10 or fewer units;
  - an unseen member in a sequence of objects is predicted; and
  - unusual or unexpected results in an activity are recognized.
- K.2 Students will investigate and understand that humans have senses that allow one to seek, find, take in, and react or respond to information in order to learn about one's surroundings. Key concepts include
- five senses and corresponding sensing organs (taste – tongue, touch – skin, smell – nose, hearing – ears, and sight – eyes); and
  - sensory descriptors (sweet, sour, bitter, salty, rough/smooth, hard/soft, cold, warm, hot, loud/soft, high/low, bright/dull).

## Force, Motion, and Energy

- K.3 The student will investigate and understand that magnets have an effect on some materials, make some things move without touching them, and have useful applications. Key concepts include
- attraction/nonattraction, push/pull, attract/repel, and metal/nonmetal; and
  - useful applications (refrigerator magnet, can opener, magnetized screwdriver, and magnetic games).

## Matter

- K.4 The student will investigate and understand that the position, motion, and physical properties of an object can be described. Key concepts include
- colors (red, orange, yellow, green, blue, purple), white, and black;
  - shapes (circle, triangle, square, and rectangle) and forms (flexible/stiff, straight/curved);
  - textures (rough/smooth) and feel (hard/soft);
  - relative size and weight (big/little, large/small, heavy/light, wide/thin, long/short); and

e) position (over/under, in/out, above/below, left/right) and speed (fast/slow).

K.5 The student will investigate and understand that water flows and has properties that can be observed and tested. Key concepts include

- a) water occurs in different states (solid, liquid, gas);
- b) the natural flow of water is downhill; and
- c) some materials float in water, while others sink.

## **Life Processes**

K.6 The student will investigate and understand basic needs and life processes of plants and animals. Key concepts include

- a) living things change as they grow, and they need food, water, and air to survive;
- b) plants and animals live and die (go through a life cycle); and
- c) offspring of plants and animals are similar but not identical to their parents and to one another.

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

K.7 The student will investigate and understand that shadows occur when light is blocked by an object. Key concepts include

- a) shadows occur in nature when sunlight is blocked by an object; and
- b) shadows can be produced by blocking artificial light sources.

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

K.8 The student will investigate and understand simple patterns in his/her daily life. Key concepts include

- a) weather observations;
- b) the shapes and forms of many common natural objects including seeds, cones, and leaves;
- c) animal and plant growth; and
- d) home and school routines.

K.9 The student will investigate and understand that change occurs over time and rates may be fast or slow. Key concepts include

- a) natural and human-made things may change over time; and
- b) changes can be noted and measured.

## **Resources**

K.10 The student will investigate and understand that materials can be reused, recycled, and conserved. Key concepts include

- a) materials and objects can be used over and over again;
- b) everyday materials can be recycled; and
- c) water and energy conservation at home and in school helps preserve resources for future use.