

# First Grade Science Indicators

Student's Name: \_\_\_\_\_

Teacher: \_\_\_\_\_

## Earth and Space Standard

**A** Observe constant and changing patterns of objects in the day and night sky.

**B** Explain that living things cause changes on Earth.

\_\_\_\_\_ 3 Explain that all organisms cause changes in the environment where they live; the changes can be very noticeable or slightly noticeable, fast or slow (e.g., spread of grass cover slowing soil erosion, tree roots slowly breaking sidewalks).

**C** Observe, describe and measure changes in the weather, both long term and short term.

**D** Describe what resources are and recognize some are limited but can be extended through recycling or decreased use

\_\_\_\_\_ 1 Identify that resources are things that we get from the living (e.g., forests) and nonliving (e.g., minerals, water) environment and that resources are necessary to meet the needs and wants of a population.

\_\_\_\_\_ 2 Explain that the supply of many resources is limited but the supply can be extended through careful use, decreased use, reusing and/or recycling.

## Life Standard

**A** Discover that there are living things, non-living things and pretend things, and describe the basic needs of living things (organisms).

\_\_\_\_\_ 1 Explore that organisms, including people, have basic needs, which include air, water, food, living space and shelter.

\_\_\_\_\_ 4 Investigate that animals eat plants and/or other animals for food and may also use plants or other animals for shelter and nesting.

**B** Explain how organisms function and interact with their physical environment.

\_\_\_\_\_ 2 Explain that food comes from sources other than grocery stores (e.g., farm crops, farm animals, oceans, lakes and forests).

\_\_\_\_\_ 3 Explore that humans and other animals have body parts that help to seek, find and take in food when they are hungry (e.g., sharp teeth, flat teeth, good nose and sharp vision).

\_\_\_\_\_ 5 Recognize that seasonal changes can influence the health, survival or activities of organisms.

**C** Describe similarities and differences that exist among individuals of the same kind of plants and animals.

## Physical Standard

**A** Discover that many objects are made of parts that have different characteristics. Describe these characteristics and recognize ways an object may change.

\_\_\_\_\_ 1 Classify objects according to the materials they are made of and their physical properties.

\_\_\_\_\_ 2 Investigate that water can change from liquid to solid or solid to liquid.

### Physical Standard

\_\_\_\_\_ 3 Explore and observe that things can be done to materials to change their properties (e.g., heating, freezing, mixing, cutting, wetting, dissolving, bending and exposing to light).

\_\_\_\_\_ 4 Explore changes that greatly change the properties of an object (e.g., burning paper) and changes that leave the properties largely unchanged (e.g., tearing paper).

**B** Recognize that light, sound and objects move in different ways.

\_\_\_\_\_ 5 Explore the effects some objects have on others even when the two objects might not touch (e.g., magnets).

\_\_\_\_\_ 6 Investigate a variety of ways to make things move and what causes them to change speed, direction and/or stop.

**C** Recognize sources of energy and their uses.

\_\_\_\_\_ 7 Explore how energy makes things work (e.g., batteries in a toy and electricity turning fan blades).

\_\_\_\_\_ 8 Recognize that the sun is an energy source that warms the land, air and water.

\_\_\_\_\_ 9 Describe that energy can be obtained from many sources in many ways (e.g., food, gasoline, electricity or batteries).

### Science and Technology Standard

**A** Explain why people, when building or making something, need to determine what it will be made of, how it will affect other people and the environment.

\_\_\_\_\_ 1 Explore that some kinds of materials are better suited than others for making something new (e.g., the building materials used in the *Three Little Pigs*).

\_\_\_\_\_ 3 Identify some materials that can be saved for community recycling projects (e.g., newspapers, glass and aluminum).

\_\_\_\_\_ 4 Explore ways people use energy to cook their food and warm their homes (e.g., wood, coal, natural gas and electricity).

\_\_\_\_\_ 5 Identify how people can save energy by turning things off when they are not using them (e.g., lights and motors).

**B** Explain that to construct something requires planning, communication, problem solving and tools.

\_\_\_\_\_ 2 Explain that when trying to build something or get something to work better, it helps to follow directions and ask someone who has done it before.

\_\_\_\_\_ 6 Investigate that tools are used to help make things and some things cannot be made without tools.

\_\_\_\_\_ 7 Explore that several steps are usually needed to make things (e.g., building with blocks).

\_\_\_\_\_ 8 Investigate that when parts are put together they can do things that they could not do by themselves (e.g., blocks, gears and wheels).

### Scientific Inquiry Standard

**A** Ask a testable question.

\_\_\_\_\_ 1 Ask "what if" questions.

\_\_\_\_\_ 2 Explore and pursue student-generated "what happens when" questions.

### Scientific Inquiry Standard

**B** Design and conduct a simple investigation to explore a question.

\_\_\_\_\_ 3 Use appropriate safety procedures when completing scientific investigations.

\_\_\_\_\_ 6 Use appropriate tools and simple equipment/instruments to safely gather scientific data (e.g., magnifiers, timers and simple balances and other appropriate tools).

**C** Gather and communicate information from careful observations and simple investigation through a variety of methods.

\_\_\_\_\_ 4 Work in a small group to complete an investigation and then share findings with others.

\_\_\_\_\_ 5 Create individual conclusions about group findings.

\_\_\_\_\_ 7 Make estimates to compare familiar lengths, weights and time intervals.

\_\_\_\_\_ 8 Use oral, written and pictorial representation to communicate work.

\_\_\_\_\_ 9 Describe things as accurately as possible and compare with the observations of others.

### Scientific Ways of Knowing Standard

**A** Recognize that there are different ways to carry out scientific investigations. Realize that investigation can be repeated under the same conditions with similar results and may have different explanations.

\_\_\_\_\_ 1 Discover that when a science investigation is done the same way multiple times, one can expect to get very similar results each time it is performed.

\_\_\_\_\_ 2 Demonstrate good explanations based on evidence from investigations and observations.

**B** Recognize the importance of respect for all living things.

**C** Estimate and compute various attributes, including length, angle measure, area, surface area and volume, to a specified level of precision.

\_\_\_\_\_ 3 Explain that everybody can do science, invent things and have scientific ideas no matter where they live.