

## Grade 3 Science

70-80% of the school year should be spent on core units, and the remainder of the time should be spent on optional units or on further development of the core units. No less than 3 weeks (7.5 hours) and not more than 8 weeks (20 hours) should be spent on any core unit.

**1 Core Unit: Animals 2 Core Unit: Earth 3 Core Unit: Properties of Matter  
4 Core Unit: The Solar System 5 Optional Unit: Fire and Fuels  
6 Optional Unit: Heating and Cooling 7 Optional Unit: Plant Structures and Adaptations 8 Optional Unit: Simple Machines 9 Optional Unit: Sound**

### **1 Core Unit: Animals (pp. 304-307 in Science: A Curriculum Guide for the Elementary Level)**

#### **1. Explain some food chains and food webs:**

- 1.1 Identify foods for humans.
- 1.2 Identify foods for animals.
- 1.3 Describe some food webs involving humans.
- 1.4 Describe food webs in your locale which do not involve humans.
- 1.5 Apply the terms predator, prey, grazer, scavenger to the members of the food chains identified.

#### **2. Appreciate that animals can become endangered:**

- 2.1 Develop an operational definition of the term "endangered species."
- 2.2 List some endangered and extinct animals.
- 2.3 Examine some protective adaptations of animals.
- 2.4 Investigate reasons why animals become endangered or extinct.
- 2.5 Identify ways of protecting animals.

### **2 Core Unit: Earth (pp. 308-311 in Science: A Curriculum Guide for the Elementary Level)**

#### **1. Describe the structure of the Earth:**

- 1.1 Recognize that the Earth is a sphere.
- 1.2 Identify the core, mantle, and crust as the layers of the Earth.
- 1.3 Describe the features of the core, the mantle, and the crust.

#### **2. Describe some characteristics of the crust:**

- 2.1 Observe and describe the surface features of the local area.
- 2.2 Observe and describe the composition of soil.
- 2.3 Identify types of soils by their components.
- 2.4 Describe the process of soil formation.
- 2.5 Recognize the importance of soil.
- 2.6 Consider the interdependence of agriculture and the soil.

### **3 Core Unit: Properties of Matter (pp. 312-316 in Science: A Curriculum Guide for the Elementary Level)**

#### **1. Describe some characteristic properties of matter:**

- 1.1 Determine which properties of objects can be used to help identify them.
- 1.2 Develop skills in using a balance to measure the mass of matter.

- 1.3 Recognize solids, liquids, and gases as states of matter.
- 1.4 Examine some of the properties of solids, liquids, and gases.

**2. Identify some changes in matter:**

- 2.1 Recognize that the state of matter is a physical property.
- 2.2 Identify changes of state.
- 2.3 Associate changes of state with temperature changes.
- 2.4 Discuss ways of using changes of state to estimate temperatures.
- 2.5 Investigate some physical changes and some chemical changes.

**4 Core Unit: The Solar System (pp. 317-321 in Science: A Curriculum Guide for the Elementary Level)**

**1. Describe and demonstrate the motions of the Earth and the Moon:**

- 1.1 Define the terms revolution and rotation, with respect to the Earth and the Moon.
- 1.2 Describe how the rotation of the Earth produces day and night.
- 1.3 Recognize that the revolution of the Earth around the Sun produces the seasons.
- 1.4 Investigate why the full moon and new moon occur, using models.
- 1.5 Observe the full moon and the new moon in the sky.
- 1.6 Show how the eclipses of the Sun and the Moon occur.

**2. Describe the solar system:**

- 2.1 Compare the sizes of the Sun, the Moon, and the Earth.
- 2.2 Name the planets.
- 2.3 Describe some characteristics of each planet.
- 2.4 Locate the planets Venus, Mars, and Jupiter in the sky or on sky charts.

**5 Optional Unit: Fire and Fuels (p. 322 in Science: A Curriculum Guide for the Elementary Level)**

**1. Understand the components necessary for fire:**

- 1.1 Develop an operational definition of fire.
- 1.2 Identify some common fuels.
- 1.3 Identify oxygen as the most common substance which supports combustion of fuels.
- 1.4 Understand the concepts of ignition and kindling temperature.

**2. Describe the principles of extinguishing fires:**

- 2.1 Recognize the three components necessary for fire.
- 2.2 Describe how to remove or reduce each component.
- 2.3 Discuss inappropriate ways of removing or reducing components.
- 2.4 Develop classroom guidelines to use in case of fire.

**3. Discuss some uses of fire:**

- 3.1 Identify and describe uses of fire.
- 3.2 Propose alternatives to the use of fire.

**6 Optional Unit: Heating and Cooling (p. 323 in Science: A Curriculum Guide for the Elementary Level)**

**1. Recognize common sources of heat:**

- 1.1 Describe how other forms of energy can be converted into heat energy.
- 1.2 Describe how to detect the presence of heat.
- 1.3 Observe how heat can be transferred from one object to another.
- 1.4 Experiment with aiding and inhibiting heat transfer.
- 1.5 Contrast the concept of heat with the term "cold."

**2. Describe the effect of heat on matter:**

- 2.1 Observe and describe the effect of heat on solids.
- 2.2 Observe and describe the effect of heat on liquids.
- 2.3 Use the terms for the common changes of state.
- 2.4 Develop operational definitions for changes of state.

**7 Optional Unit: Plant Structures and Adaptations (p. 324 in Science: A Curriculum Guide for the Elementary Level)**

**1. Describe diversity in plant structure:**

- 1.1 Recognize roots, stems, leaves, and flowers as common structures of most plants.
- 1.2 Examine modifications of roots, stems, leaves, and flowers.
- 1.3 Discuss how plants are used by humans.

**2. Explain how the structures of a plant help it survive:**

- 2.1 Investigate the functions of roots, stems, leaves and flowers.
- 2.2 Observe and describe the response of plants to environmental stimuli.
- 2.3 Observe and describe how plants are adapted to environmental conditions.

**8 Optional Unit: Simple Machines (p. 325 in Science: A Curriculum Guide for the Elementary Level)**

**1. Recognize the different types of force and energy:**

- 1.1 Observe how gravity, magnetism, push and pull, and friction influence objects.
- 1.2 Observe how electrical, chemical, heat, light, sound, and kinetic energy influence objects.
- 1.3 Describe the relation between energy and force.

**2. Describe how simple machines convert force into motion:**

- 2.1 Examine levers, pulleys, screws, inclined planes, and wheels and axles.
- 2.2 Examine some compound machines.
- 2.3 Design and construct a simple or compound machine to complete a particular task.
- 2.4 Consider the relationship between energy and motion.

**9 Optional Unit: Sound (p. 326 in Science: A Curriculum Guide for the Elementary Level)**

**1. Explain the nature and properties of sound:**

- 1.1 Compare transmission of sound through air, water, and some solids.
- 1.2 Demonstrate that sound is produced by vibrations.
- 1.3 Investigate changing the pitch and the quality of a sound.
- 1.4 Discover a place where strong echoes are produced.

**2. Describe some uses of sound:**

- 2.1 Observe and describe some uses of sound.

- 2.2 Propose some new uses for sound.
- 2.3 Devise, or modify, devices which produce sound, in order to produce a sound for particular purpose.