

At the end of the school year, students will be able to...

### GOAL 11 Inquiry

*(Integrated into the whole year) Understand the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.*

#### STANDARD A

**Know and apply the concepts, principles and processes of scientific inquiry.**

- \_\_\_\_\_ Describe an observed event.
- \_\_\_\_\_ Develop questions on scientific topics.
- \_\_\_\_\_ Collect data for investigations using measuring instruments and technologies.
- \_\_\_\_\_ Record and store data using available technologies.
- \_\_\_\_\_ **\*Arrange data into logical patterns and describe the patterns.**
- \_\_\_\_\_ Compare observations on individual and group results.

#### STANDARD B

**Know and apply the concepts, principles and processes of technological design.**

- \_\_\_\_\_ **\*Given a sample design problem, formulate possible solutions.**
- \_\_\_\_\_ Design a device that will be useful in solving the problem.
- \_\_\_\_\_ Build the device using the materials and tools provided.
- \_\_\_\_\_ Test the device and record results using given instruments, techniques and measurement methods.
- \_\_\_\_\_ Report the design of the device, the test process and the results in solving a given problem.

### GOAL 12 Concepts

*Understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences.*

#### STANDARD A

**Know and apply concepts that explain how living things function, adapt and change.**

#### STANDARD B

**Know and apply concepts that describe how living things interact with each other and with their environment.**

#### UNIT A1 PLANTS

- \_\_\_\_\_ Classify plants based on their characteristics and identify basic needs.
- \_\_\_\_\_ **\*Identify structure and function of plant parts.**
- \_\_\_\_\_ Identify characteristics of seeds and how they can be scattered.

#### UNIT A2 ANIMALS

- \_\_\_\_\_ **\*Describe the life cycle of animals (e.g., frog, butterfly).**
- \_\_\_\_\_ **\*Classify animals as mammals, reptiles, amphibians, birds, insects, arachnids, or fish.**
- \_\_\_\_\_ Identify features that enable animals to live in various habitats.
- \_\_\_\_\_ Identify ways animals protect themselves.

#### UNIT A3 FOSSILS

- \_\_\_\_\_ Identify dinosaurs and their characteristics.
- \_\_\_\_\_ **\*Explain what fossils are and how they are formed.**
- \_\_\_\_\_ Identify events that may have contributed to the extinction of dinosaurs.

#### STANDARD C

**Know and apply concepts that describe properties of matter and energy and the interaction between them.**

#### UNIT B1 MATTER

- \_\_\_\_\_ Describe properties of matter.
- \_\_\_\_\_ **\*Compare and contrast solids, liquids, and gases.**
- \_\_\_\_\_ Describe ways to change matter.

#### UNIT B2 SOUND, HEAT and LIGHT

- \_\_\_\_\_ Identify that sound is produced by vibrations and describe how to change pitch and volume.
- \_\_\_\_\_ **\*Identify sources and properties of light, heat and sound.**
- \_\_\_\_\_ Explain how electricity moves and ways to use it safely.

## STANDARD D

Know and apply concepts that describe force and motion and the principles that explain them.

### UNIT B3 FORCE, MAGNETS and ELECTRICITY

\_\_\_\_\_ \*Identify properties of magnets, electricity, force and gravity and how they affect objects.

\_\_\_\_\_ Explain how electricity moves and ways to use it safely.

## STANDARD E

Know and apply concepts that describe the features and processes of the Earth and its resources.

## STANDARD F

Know and apply concepts that explain the composition and structure of the universe and the Earth's place in it.

### UNIT C1 THE EARTH

\_\_\_\_\_ Identify Earth features (mountains, lakes, and types of rocks).

\_\_\_\_\_ Describe how volcanoes and earthquakes can change the Earth.

\_\_\_\_\_ \*Identify natural resources and how to protect them. (Basic materials are land water and air.)

### UNIT C2 WEATHER and SEASONS

\_\_\_\_\_ Identify and give the use for measuring instruments.

\_\_\_\_\_ Identify seasonal weather changes and their effect on living things.

\_\_\_\_\_ \*Describe the water cycle.

### UNIT C3 THE SOLAR SYSTEM

\_\_\_\_\_ \*Describe how the rotation of the Earth causes day and night.

\_\_\_\_\_ Identify and sequence the phases of the moon.

\_\_\_\_\_ Identify the objects in the solar system.

## GOAL 23 Human Body

*Understand human body systems and factors that influence growth and development.*

## STANDARD A

Describe and explain the structure and functions of the human body systems and how they interrelate.

## STANDARD B

Explain the effects of health-related actions on the body systems.

### UNIT D1 HOW YOUR BODY WORKS

\_\_\_\_\_ \*Describe the function of the brain, heart and lungs.

\_\_\_\_\_ Measure and describe lung capacity and pulse rate.

### UNIT D2 NUTRITION

\_\_\_\_\_ \*Classify foods in the Food Guide Pyramid, identify healthy food choices and describe the digestive process.

### UNIT D3 KEEPING HEALTHY

\_\_\_\_\_ \*Demonstrate how exercise, cleanliness, and proper nutrition are good for health.

## GOAL 13 Connections

*Understand the relationship among science, technology and society in historical and contemporary contexts*

## STANDARD A

Know and apply the accepted practices of science.

\_\_\_\_\_ \*Use basic safety practices (e.g., not tasting materials without permission, "stop/drop/roll").

\_\_\_\_\_ Explain why similar results are expected when procedures are done the same way.

\_\_\_\_\_ Explain how knowledge can be gained by careful observation.

## STANDARD B

Know and apply concepts that describe the interaction between science, technology and society.

\_\_\_\_\_ Explain the uses of common scientific instruments (e.g., ruler, thermometer, balance, probe, computer).

\_\_\_\_\_ Explain how using measuring tools improves the accuracy of estimates.

\_\_\_\_\_ Describe contributions men and women have made to science and technology.

\_\_\_\_\_ Identify and describe ways that science and technology affect people's everyday lives (e.g., transportation, medicine, agriculture, sanitation, communication occupations).

\_\_\_\_\_ \*Demonstrate ways to reduce, reuse and recycle materials.