Section 1

Earth in Space

Reading Preview

Key Concepts

- How does Earth move in space?
- What causes the cycle of seasons on Earth?

Key Terms

- astronomy
- axis
- rotation
- revolution
- orbit
- calendar
- solstice
- equinox

Target Reading Skill

Using Prior Knowledge Your prior knowledge is what you already know before you read about a topic. Before you read, write what you know about seasons on Earth in a graphic organizer like the one below. As you read, write in what you learn.

What You Know
1. The sun's rays heat Earth.
2.

What You Learned
1.
2.

Lab zone Discover Activity

What Causes Day and Night?

1. Place a lamp with a bare bulb on a table to represent the sun. Put a globe at the end of the table about 1 meter away to represent Earth.
2. Turn the lamp on and darken the room. Which parts of the globe have light shining on them? Which parts are in shadow?
3. Find your location on the globe. Turn the globe once. Notice when it is lit—day—at your location and when it is dark—night.

Think It Over

Making Models What does one complete turn of the globe represent? In this model, how many seconds represent one day? How could you use the globe and bulb to represent a year?

Each year, ancient Egyptian farmers eagerly awaited the flood of the Nile River. For thousands of years, their planting was ruled by it. As soon as the Nile's floodwaters withdrew, the farmers had to be ready to plow and plant their fields along the river. Therefore, the Egyptians wanted to predict when the flood would occur. Around 3000 B.C., people noticed that the bright star Sirius first became visible in the early morning sky every year shortly before the flood began. The Egyptians used this knowledge to predict each year's flood. The ancient Egyptians were among the first people to study the stars. The study of the moon, stars, and other objects in space is called **astronomy.**

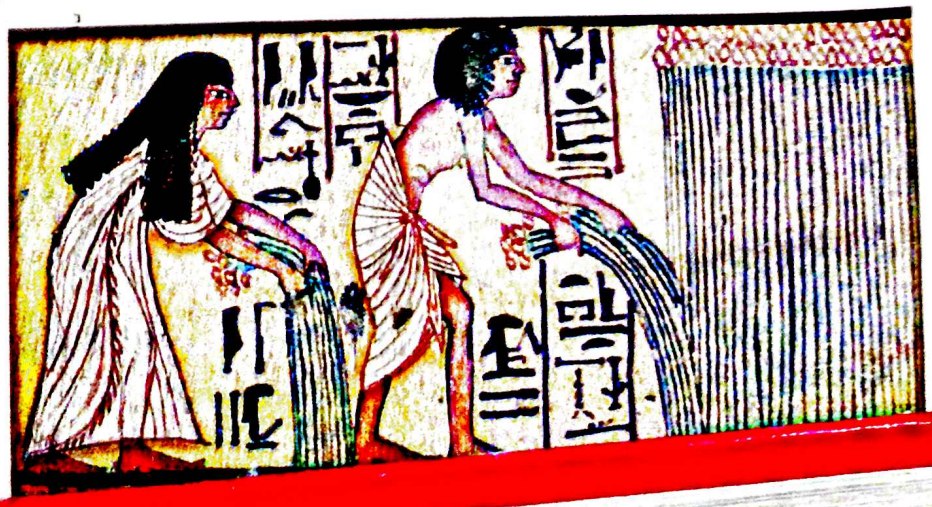

FIGURE 1
Ancient Egyptian Farmers
Egyptian farmers watched the sky in order to be prepared to plow and plant their fields.