

## Learning Objectives

- 1) Know that our sun, located about 93,000,000 miles away, is the closest star to earth. Also, our sun is not very large or hot relative to the numerous other stars in the universe.
- 2) Understand the concept of night and day. Though it appears that the sun rises and falls, it is the earth that is moving. During the night, the earth has rotated toward the sun. One full rotation, from night to day and back to night, is one day.
- 3) Realize that the stars we see at night are so far away that they appear small; however, many are even larger than the earth's sun. In addition, know that the groups of stars that can be seen are called constellations, many of which are named after the object they resemble.
- 4) Understand that the earth is part of a solar system, made up of comets, asteroids, and nine planets (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, and Pluto) orbiting the sun.
- 5) Recognize that Earth is a planet, a huge sphere. The earth looks flat from a human's perspective on land because only a small part of the planet can be seen.
- 6) Know that the earth is made up of mostly rock on the inside covered, in large part, by water.
- 7) Understand the concept of gravity, the invisible force that pulls everything toward the center of an object. Gravity keeps everything from falling off the earth and causes the planets to orbit the sun.
- 8) Know what an orbit is. As a verb, orbit means to move around. Planets and their moons, asteroids, and comets orbit around the sun. It takes about 365 days for the earth to complete one full orbit around the sun. This period of time is called a year.
- 9) Realize that the sun provides the creatures of earth with the energy needed to survive. The earth is just the right distance from the sun to support life.
- 10) Understand that the sun is responsible for the weather. The sun heats the air, causing wind, and it heats the water, causing evaporation. This evaporated water will later fall back to earth in the form of rain, sleet, snow, and hail.
- 11) Know that the tilt of the earth influences the seasons. Summer occurs when the earth is tilted toward the sun,

and winter occurs when the earth is tilted away from the sun.

- 12) Realize that the moon affects the tides. The moon's gravity pulls on the ocean waters, causing some areas of water to rise and others to lower.
- 13) Understand that the sun shines on the moon. As the moon orbits the earth, different regions of the moon are lit, allowing those regions to be visible. A waxing moon is one that is increasingly lit by the sun; a waning moon is a moon that is lit less and less. A moon that is not lit is called a new moon. It takes twenty-nine and a half days for the moon to cycle through its changes, which requires a full orbit around the earth.
- 14) Know what an eclipse is. Two types of eclipses exist, a solar eclipse and a lunar eclipse. During a solar eclipse, the sun, moon, and the earth are aligned; the moon passes between the sun and earth, casting a shadow on the earth. In a lunar eclipse, the sun, the earth, and the moon are aligned again; however, the earth passes between the sun and moon, casting the shadow on the moon.
- 15) Realize that space is very large. In fact, it is so large that it is incomprehensible. The brightest star that can be seen from Earth is fifty-four trillion miles away.

## Suggested Activities

### 1) Before Viewing the Video

- a) **Anticipatory Set:** Ask the following questions: What is the sun? What is a star? What is our earth? How are they the same? (They are spheres.) How are they different? (Two are stars and the earth is a planet.) Discuss each question. Watch the video to provide answers and to learn more about the earth, our home in space.

### 2) After Viewing the Video

- a) **Making the Game, "What is it?"** Make 12 large circles on tagboard and color each as follows: Sun (yellow-orange), Mercury (brown with holes), Venus (yellow-brown), Earth (blue with white swirling clouds), Mars (red, with white polar caps), Jupiter (orange, yellow, white, and reddish bands), Saturn (butterscotch with large rings), Uranus (blue-green), Neptune (blue), Pluto (white), our moon (pale yellow), and a star (small, white and far-away). Also, make a large rock shape (asteroid) and a smaller one

(meteoroid). Make a comet (rounded head and two sweeping tails in white). Label the back of each with the correct name. With older students, the children might be required to make the cards themselves. Review the video and refer to books about planets, if needed.

- b) **To Play the Game** Have the class form two lines facing one another. Give the cards to half of the class. If there are more than thirty children, make asteroids and meteoroids. A child with a card picks a child from the opposite line to identify his/her picture and then turns it around to reveal the correct answer. The selected child takes the card if he/she answered correctly. When all the cards have been given away, have the new holders of the pictures select someone from the original side to tell one fact about the picture in order to obtain it.
- c) **Other Uses for the Cards** 1. For a class test, the teacher can flash the cards as the class writes down the names of each. Younger children can just say the names of the heavenly bodies as they are shown. 2. Pass out the cards to groups of two. The groups must write three characteristics about their object and draw a picture of where it is located in our solar system. Younger children can tell each other what they learned.

## Vocabulary

**Asteroid** – a rock made out of leftovers from the formation of the solar system. Asteroids orbit the sun.

**Comet** – a ball of rock, ice, dust, and gas with tails of dust and gas that orbits the sun

**Rotate** – to spin around.

**Sphere** – a ball shaped object.

**Star** – a large ball of hot burning gases that gives off a lot of energy.

