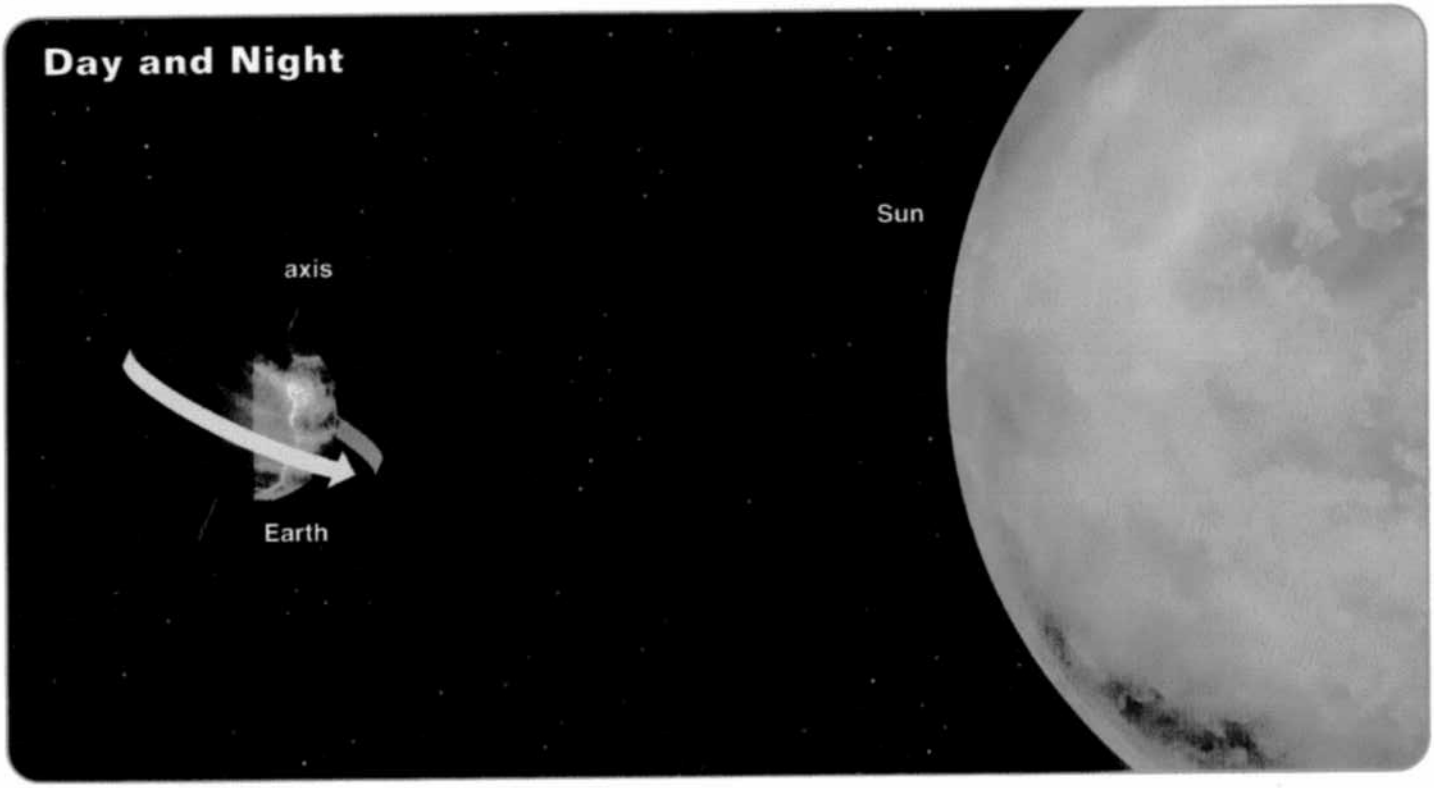
What Causes Days and Years?



▲ **Figure 10** Day and night are caused by Earth's rotation on its axis. Only the half of Earth facing the Sun is lighted and has day. The other half of Earth is dark and has night.

READ TO UNDERSTAND

- How is Earth's rotation related to day and night?
- How is time related to your location on Earth?
- Why is the length of a year different for each planet?

VOCABULARY

axis	revolution
rotation	year
day	ellipse
time zone	
International Date Line	

Days

Earth turns like a spinning top. Earth's **axis** is an imaginary line that runs through the center of Earth from the North Pole to the South Pole (Figure 10). The spinning motion of Earth on its axis is called **rotation.** All planets rotate, although not always in the same direction. Looking down on the North Pole from space, Earth rotates in a counterclockwise direction. The period of time it takes for a planet to complete one rotation is a **day.** Earth's day is about 24 hours long. Other planets take different amounts of time to complete one rotation. For example, Venus rotates so slowly that its day equals about 243 Earth days.

A day is divided into a period of daylight and a period of darkness, or night. As Earth rotates, the part of Earth that faces toward the Sun has daylight, or day. The part of Earth that faces away from the Sun has darkness, or night. If you look up at the sky from a point on Earth's surface, the Sun appears to rise in the east, move across the sky, and set in the west. The direction of Earth's rotation causes this.