

## Modeling the lunar cycle



Ancient civilizations used the Moon to keep track of the passage of each month. The Moon revolves around Earth in a counterclockwise direction. As it revolves, its appearance from Earth changes in a repeating pattern called the lunar cycle.

In this part of the investigation, you will model the lunar cycle.

You will work with another student, as shown in Figure 1.

**Safety Note:** Your teacher will turn out the classroom lights once you have gathered

your materials. Be careful as you move about the classroom.

1. Place a foam ball on a pencil or stick. This ball represents the Moon.
2. Have another student hold a flashlight. The flashlight represents the Sun. Your head represents Earth.
3. Hold the ball above your head, at arm's length from your face. Stand about one meter from the flashlight, which is held at the same level as the ball.
4. Observe the Moon in each of the positions shown in Figure 2. Face the ball at each position.
5. For each position, indicate how much of the ball is dark and how much is illuminated, in the table below. Use a pencil to show the shaded regions.

### Materials

- Flashlight (bright-LED is best)
- 2 or 3 inch foam ball
- pencil

