



WONDERVERILLE ACTIVITY

SUN, EARTH AND MOON SIMULATION

Try these activities in your classroom with a partner. You will need:

- **A bright light source (Sun)**
- **A tennis ball (Moon)**
- **Your head and eyes (You on the Earth)**
- **Pencil and paper**

1. Your head is the Earth and you are on the Earth looking out into the sky. The top of your head is the North Pole. Stand up and face the bright light in the room. In order to mimic the rotation of the Earth, which spins toward the east, you must turn on the spot in a counter-clockwise direction (to the left). The Earth is actually tilted on its axis, but it is too hard for you to spin and tilt at the same time, so we'll leave the tilting out! We'll leave out the Earth's orbit for now too. Observe where your eyes would notice sunrise, sunset, noon and midnight. Draw a diagram of your location relative to the Sun at each of these times.

Sunrise	Sunset	Noon	Midnight

2. Still using your head as the Earth, have your partner hold the tennis ball so that it is seen by you as a full moon. Draw your position in relation to the Sun and the Moon.

3. The Moon orbits the Earth in the same direction as the Earth rotates. That means that as you spin in a counter-clockwise direction (to the left), the Moon also orbits around you to the left. With your partner holding the tennis ball and moving around you while you spin, identify and draw your relative positions for each of the following:

- **New moon**
- **Waxing crescent moon**
- **First quarter moon**
- **Waxing gibbous moon**
- **Waning gibbous moon**
- **Last quarter moon**
- **Waning crescent moon**

