

Challenge**LESSON 1****Earth's Motion****Seasons and Solstices**

Earth makes one complete revolution about the Sun each year. Changes in the seasons are caused not by the varying distance between Earth and the Sun but by the tilt of Earth on its axis during that revolution. As Earth orbits the Sun, there are times of the year when the North Pole is alternately tilted toward the Sun or tilted away from the Sun. At other times the axis is generally parallel to the incoming Sun's rays.

Draw a Diagram

On a separate sheet of paper, draw Earth in four positions—at the March and September equinoxes and the June and December solstices. Clearly indicate the tilt of Earth's axis. Include the Sun and the direction of Earth's revolution around the Sun. Indicate the angle of the Sun's rays at each position.

Directions: Respond to each statement on the lines provided.

- 1. Determine** Earth's season in each hemisphere at each solstice. Include relative daytime length.

- 2. Explain** why all locations on Earth have equal hours of day and night on about March 21 and September 23.

- 3. Decide** which position on Earth (equator or pole) receives the greatest intensity of sunlight on June 21. Justify your answer.
