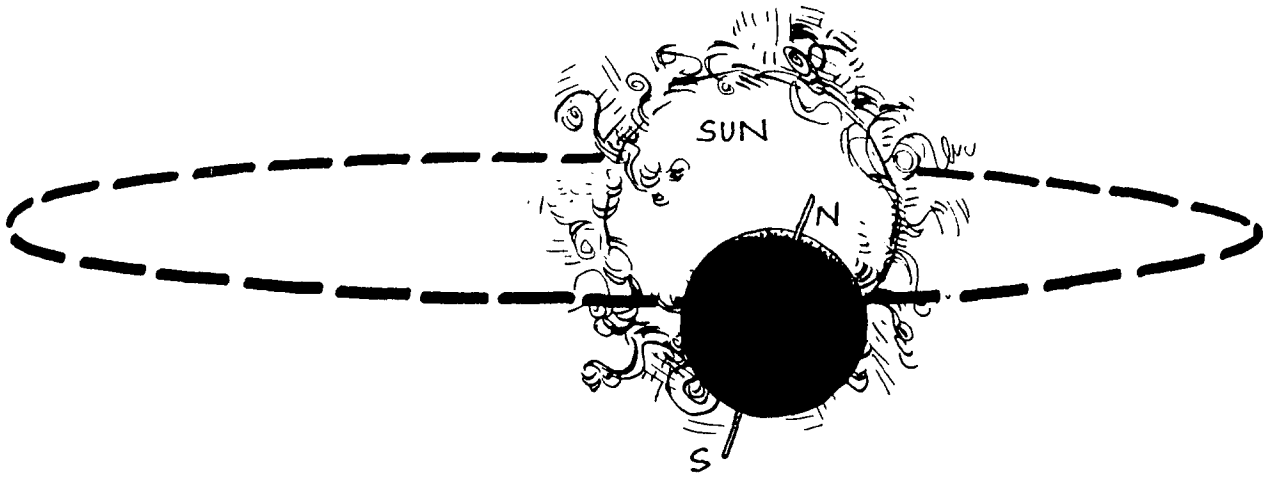
What and When Is Fall?



Use this activity at the beginning of the unit on fall. It will help students understand that the earth spins on its axis in its orbit around the sun. The earth completes one-quarter of its revolution between September 23 and the first day of winter, around December 21. The North Pole tilts away from the sun in the fall.

In this investigation the students will use a ball to represent the earth. Be sure they have it angled so the North Pole tilts away from the sun for one-quarter of its orbit.

The illustration on page 8 shows what the students will be acting out in the investigation, "What and When Is Fall?"

EQUIPMENT:

Globe
Flashlight, light, or clip light
Ball to represent the Earth, with North and South Poles marked
Pencil
Tape
Piece of string or rope about 12 feet long

DIRECTIONS:

1. Look at the globe and locate the North and South Poles and equator.
2. Mark the ball with the Poles and equator using the pencil.
3. The person holding the clip light or flashlight stands in the middle of an ellipse. The ellipse is made by taking the string or rope and placing it on the floor in the shape of an ellipse. Tape the ends of the string together.
4. The person holding the ball representing the earth walks along the rope in an ellipse pattern. Students observe the path of the earth. One quarter of the path represents a season. During fall, the earth must be turned so the North Pole tilts away from the sun.
5. The room is darkened and the sun shines as the clip light or flashlight is turned on. The earth moves in its orbit around the sun.
6. Discuss the different positions of the earth during the four seasons, as shown in the illustration on page 8.

HERE'S WHAT YOU'RE ACTING OUT:

THE EARTH IS TILTED ON ITS AXIS. IN OTHER WORDS, IF YOU WERE ABLE TO STICK A LONG POLE THROUGH THE EARTH, FROM THE NORTH POLE TO THE SOUTH POLE, IT WOULD LOOK LIKE THIS 

, AND NOT LIKE THIS 

. THIS TILTING OF THE EARTH CAUSES THE CHANGES IN TEMPERATURE AND WEATHER DURING THE DIFFERENT SEASONS OF THE YEAR. IT ALSO EXPLAINS WHY OUR DAYS ARE LONGER IN THE SUMMER AND SHORTER IN THE WINTER.

HERE'S HOW: