

Name _____

Date _____



The Reasons for the Seasons Family Page



Question: *Do shadows change with the seasons?*

What's Happening in Class?

Your child is conducting a controlled investigation to determine the length of the sun's shadow on a fixed object such as a flagpole or telephone pole. This investigation takes place over a three-day period (one day in the fall, one in the winter, and one in the spring). This concrete experience acts as a springboard to the abstract understanding of the positioning of the sun and Earth as it relates to the seasons. In March (after the final observation) a classroom activity using a lamp and globe will reinforce the connection between the Earth's tilt, its revolution, and seasonal change. For more specific information on this lesson, visit the *Science for Ohio* website at www.environmentaleducationohio.org and click on *The Reasons for the Seasons* inquiry.

What Can We Do at Home?

- 1) Research the meanings of the following terms and find out how they are related to the seasons:
rotation northern hemisphere season
revolution southern hemisphere axis
axial tilt counterclockwise vertical
- 2) Discuss answers to the following questions:
 - Why is it warmest in the summer?
 - How do the seasons of the northern hemisphere relate to the seasons of the southern hemisphere?
 - How would the Earth's seasons be different if it had no tilt?
 - Why does the sun appear to "rise in the East and set in the West?"
 - The Earth makes one complete rotation on its axis in _____ (time frame). The Earth makes one complete revolution around the sun in _____ (time frame).
- 3) Choose an object around your home whose shadow can be measured. Take monthly measurements at the same time of day. Keep a bar graph of the shadow measurements and watch for any patterns. Note: take your measurement one hour earlier once Daylight Savings Time ends and Standard Time resumes (the end of October).

