The Reason for the Seasons

Overview

This lesson will help students understand the relationship between the Earth and the sun and how this relationship affects observable phenomena on Earth, such as the seasons. Students will reinforce their understanding by diagramming the Earth and sun during different seasons.

Episode Connection: Seasons, Weather

Objectives

Students will

- describe the differences between the four seasons;
- read about why the seasons occur, and draw diagrams showing the relationship between the Earth and the sun;
- diagram the relationship between the Earth and the sun today;
- label several cities, and predict what the weather might be like in these places at this time, based on the students' understanding of the seasons; and
- find out what the weather is actually like in these places, and compare actual readings with students' predictions.

Time Required: 1-2 class periods

Materials

- Writing and drawing materials
- Globe or maps of northern and southern hemispheres
- *Science Minutes* DVD, *Episode: Seasons*
- Computer with Internet access

Procedures

1. Ask students to describe the differences between winter, spring, summer, and fall that they notice as the seasons go by. Then ask them if they know why these seasons occur. What happens to the Earth to make the seasons change? Write their ideas on the board.
2. Show *Science Minutes, Episode: Seasons*. After the episode, have them draw two diagrams showing the relationship between the Earth and the sun—one during the winter and one during the summer in their hometown.
3. Hold a class discussion on the science behind the seasons to make sure students understand the basic concepts of why the seasons occur. Ask students to state

whether they are currently closest to the summer solstice, winter solstice, vernal equinox, or autumnal equinox.

4. Have students use new pieces of paper to draw diagrams showing the relationship between the Earth and the sun as it would be on the day they are doing this activity. Then have them sketch North and South America on the globe and place a small x in the location of their hometown.
5. Have students draw additional x's next to the following places on the Earth in their diagrams: Sarasota, Florida; Santiago, Chile; Melbourne, Australia; Belem, Brazil (at the mouth of the Amazon); and Fairbanks, Alaska.
6. Discuss what students think the weather is like in each of these places right now. They should base their predictions on their knowledge of the seasons, referring to their diagrams.

Go Further

- Have students visit CNN's weather page, www.cnn.com/weather, to find out what the weather is really like in these places right now. Have them record the current temperatures in each of these places and in their own hometown.
- Ask students what they think the weather is like near the Equator. They will probably say that it's always warm, which is true. Ask them if they think there are any seasons at all in equatorial regions. They might say no, but point out that these regions generally have a wet and a dry season. Have them research monsoons and write paragraphs explaining where and why the monsoons occur and what the students think it would be like to live in a region subject to monsoon seasons.

Resource: http://www.nationalgeographic.com/xpeditions/lessons/07/g35/seasons.html

Standards

Coming soon….

Connections to the National Geography Standards:
Standard 1: "How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective"
Standard 7: "The physical processes that shape the patterns of Earth's surface"