The Reasons for the Seasons
5th Grade

Jonathan Clark, Nicole Clark (Hamilton), Gloria Arismendy (CSIA)

References: adapted from:
http://www.lpi.usra.edu/education/skytellers/seasons/activities/sequences.shtml

Benchmarks:
ES-3: Describe the characteristics of Earth and its orbit around the sun. In this experiment, the focus will be the Earth's tilted axis and why it causes the seasons.

Objectives:
Explain why the Earth has seasons and why different hemispheres experience "opposite" seasons.

Materials
Alcohol burners or tea light candles
Objects (apples or Styrofoam balls) to represent the Earth
Thermometers

Initial Observation/Demonstration:
I will ask the students: "What causes the seasons?" They will write their hypothesis in their science journals and some will share their answers. We will discuss some hypotheses and then discuss the Earth's tilt of 23.5°. I will demonstrate the proper way to light and work with the alcohol burners and describe the experiment.

Initial Observations:
Students will observe using their thermometers that the warmest spot around the "sun" is in a straight line away from it.

Initial Model:
Students will now write a hypothesis telling where they think the Earth (apple) will be the warmest.

Procedure:
Students should be broken into groups of 3.
Candles/burners should be passed out (and lit by you depending on the experience level of the students)
The worksheet that gives step by step directions and probing questions should be passed out, and the students can work within their groups.

Discussion/Summary: