



# The Sun's Energy

BISCHOFF/STARK

## Earth Science

60 min.

Earth and Space: Understanding energy in Earth systems

### Objectives:

Students will learn about the importance of the sun's energy. They will also learn why some areas of the earth receive more heat and light than other areas.

### Background Information:

Provide students with some "fabulous facts": The fossil fuels coal, petroleum, and natural gas contain stored solar energy from millions of years ago. That is takes about eight minutes for light from the sun to reach earth. Every 40 minutes the sun delivers as much energy to the earth as all the people on earth use in one year. The sun is about 4,600,000,000 years old and will probably be a source of energy for another five billion years!

### Materials:

Waxed paper	toothpicks
Cloth	lamp
Felt	stopwatch
Construction paper	2 pieces of chocolate candy per student
Scissors	flashlight
Glue	class supply of white paper
Tape	ruler
Small ball of clay	

### Procedure:

(Model this step as a whole class) Fold paper in half: unfold it. Hold a flashlight about 12 inches directly over one half of the paper. Turn the flashlight on. Trace the outline of the light shining on the paper. Repeat this step, but hold the flashlight at a 45° angle about 12 inches above the opposite side of the paper. Discuss how the outlines are different, how is the flashlight like the sun? How is the paper like the earth? Discuss- students may write in their journal.

Pair students up and have them use the materials available to construct a shelter that will protect an animal (chocolate candy) from the sun's heat (lamp). They do not have to use all of the materials, but you must be able to



see the candy during the experiment.

After construction, students will place their shelter under the lamp. They will place one piece of candy inside and one on the outside. Predict what will happen. To test prediction, students will need to use a stopwatch to keep track of the amount of time it takes the chocolate candy to begin to melt. Students may want to touch candy every minute or so to detect when candy is getting soft.

**Assessment:**

When students have results have them discuss: 1) which melted faster? Why? 2) Would other materials have made a better shelter? If so, which one and why? 3) Why is it necessary for animals to have shelter from the sun? 4) What does the sun provide you?  
Heat, light, and other kinds of energy come from the sun. People, animals, and plants depend on this energy. We can use this energy in many ways. The heat from the sun can also be damaging and we need to protect ourselves.

**Additional Content:**

**References:**