

SOME LIKE IT HOT!

Activity Objective: Girls discuss the topic of climate change and experiment with solar energy.

Toward Leadership Outcomes:

Through this activity, girls will:

- ✓ Gain practical life skills—Girls are more knowledgeable of how science, technology, engineering and mathematics affect everyday things in their environment globally and locally. **(Discover)**

Experience Overview:

2 minutes	<i>Introduction (Talking Points)</i>
45 minutes	<i>A Solar Experiment</i>
5-10 minutes	<i>Reflection/Discussion</i>

Supplies Needed:

- ✓ Large pad and marker (or chalkboard)
- ✓ Pizza box (use the pizza box or boxes from Science and Tech Trek Activity 8A)
- ✓ Newspapers
- ✓ Scissors, ruler, tape
- ✓ Black construction paper
- ✓ Clear plastic wrap and aluminum foil

Prepare Ahead:

- ✓ Make copies of the “It’s a HOT Issue” handout.
- ✓ Read over the entire activity before you meet with girls.

SCIENCE & TECH
ACTIVITY 9

DISCOVER:

» Gain practical life skills

Step-by-Step Instructions:

» Introduction (Talking Points) (2 minutes)

- ✓ Say something like this: “You have probably heard of global warming, right? That is because it is one of the ‘hottest’ environmental issues. Global warming is often used synonymously with the phrase ‘climate change.’ Many scientists predict that the current trend toward changes in the climate, or increases in the earth’s temperature, will have serious and devastating effects for the planet and the people who live on it. Today we will learn a bit about climate change, and also begin to think about what kinds of things we personally can do to make a difference.”

» A Solar Experiment (45 minutes)

- ✓ Distribute copies of “It’s a HOT Issue” handout. Ask a girl (or girls) to read it aloud.
- ✓ Say something like this: “Using power generated by the sun is one way to reduce global warming. By providing heat, the sun can help us save fuel. Has anyone ever heard of or know someone who has a house with solar energy panels?”
- ✓ Continue by saying something like this: “Solar ovens are another way to save fuel and reduce global warming. Solar ovens have been around since the 1830s, when astronomer John Herschel used one to cook food during an African expedition. And we can make one out of a pizza box!”
- ✓ As a group, work together to create a solar oven. (If resources are available, consider dividing girls into smaller groups, so that each girl is more likely to be engaged.) Follow these steps:
 - » Draw an 8½-inch x 11-inch rectangle in the lid of the assembled box.
 - » Cut out three sides of the square, and fold back the flap along the uncut edge.
 - » Cover the inside of this flap with aluminum foil, using tape to hold the edges securely.
 - » Line the inside bottom of the box with black construction paper. Use tape to hold down the edges.
 - » Create insulation by rolling up some newspaper (about 1½-inch thick) and fitting it around the inside edges of the box.

- » Tape the underside of the lid opening with one piece of plastic wrap (stretched tightly). Tape another piece on the top of the lid opening to create a layer of insulation that will help hold the heat inside the box.
- » Prop the box at an angle facing the sun. Use a ruler to prop open the flap.

» Reflection/Discussion (5-10 minutes)

- ✓ Tell girls that you would like to put your solar oven (or ovens) to use, and that you can schedule another time on a sunny day. Ask them to consider uses for their ovens, such as making treats. (See “Put Your Ovens to Use!” for two ideas.)
- ✓ Ask girls: “What other things can we personally do to stop climate change?” Create a list on the large pad.
- ✓ Have the group vote on one or two things they will commit to do during the next week (or before the next meeting).

GLOBAL WARMING ACTION PLAN!

Encourage girls to create an action plan to reduce global warming in their own community. Start by having girls look at the list of things they can do to reduce global warming to inspire ideas for a Take Action project. Next, help the group to decide what “course of action” to take. Since the Take Action project will be a group project, girls should brainstorm issues that relate to their school or community and vote on which one to do. While girls should come up with their own suggestions, as a facilitator you can help them choose an issue that is relevant and achievable. Aim for action steps that are realistic, attainable, and have impact.

Go to the “Take Action” section of this guide for steps for planning a Take Action project.

PUT YOUR OVENS TO USE!

Schedule a time to use your ovens on a sunny day!

On a hot, sunny day the temperature can reach 200°F in your oven! Use it to make s’mores or to warm some muffins. Use different containers to cook food in your ovens—like bowls or cans. Paint the cans different colors and see if these colors make a difference. Test the temperature (with a thermometer) inside the container with and without a plastic covering. How do different containers affect the cooking temperature?