



Sun-Earth Day

Celebrate the Connection!

Public Outreach

- Make and Take Activities

What You'll Need

- a manila folder or sheet
- Aluminum foil
- Glue
- Large paper clip
- solar cell (optional)
- Amp meter, or digital multimeter set to measure amps (optional)

Funnel the Sun

About this Activity

The simple foil funnel you will make focuses about three times the usual amount of light into its bottom. This activity uses the principle of REFLECTION.

(Age range: elementary and middle school)

(Modified from an activity from www.solarschoolhouse.org)

Preparation

Gather materials.

To Do and Notice

1. Cut a piece of manila paper to about 11.5 inches x 5.5 inches.
2. Glue aluminum foil shiny-side out onto the manila paper with white glue thinned with water.
3. Cut out a half-circle (centered on the bottom) from one of the long edges of the foil-coated manila paper. The size can vary (say, from 1-4 inches, or approx. twice the diameter of the final circle you want).
4. Roll the foil-coated paper into a funnel, foil side in, leaving a hole at the bottom. Fasten with clip.
5. Face the top of the funnel (the wide end) into the sun.
6. Put your finger at the bottom. Do you feel the warmth?
7. Try pointing the open end of the funnel into brighter sunshine. Notice any changes?

OPTIONAL: Put a solar cell at the bottom end of your funnel.

Attach leads from a digital multimeter to a solar cell and set to 10 amp mode. Note: red lead should be placed in the 10A port. Aim solar cell towards the sun and angle cell until you get the maximum amperage reading. Make a note of the reading.

Next, take your funnel and aim it towards the sun. Place solar cell (still attached to digital multimeter leads) in the bottom of the funnel cooker with the solar cell facing towards the sun.

Note amperage reading. What's the difference in readings when you use the funnel or don't?

Activity Notes

What you are doing is funneling light (or concentrating it into the bottom (narrow end). You can feel the heat it generates with your finger, by placing it at the bottom of the funnel. Or you can measure the increase in heat with an amp meter, or a digital multimeter set to measure amps. If you are using a solar cell in this activity, try to make the bottom opening of the funnel the same size as your solar cell, which you will place at the bottom of the funnel. When you cut the semi-circle in the paper (step 3), make the semi-circle approximately twice the size of the circle you want to end up with.

Solar cells are available for \$5 at solarschoolhouse.org.

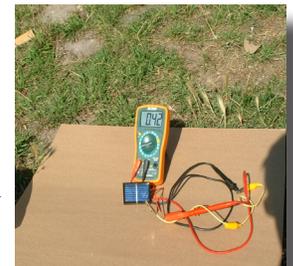
Teachers can buy them in bulk from Solar Winds at 916-486-4372. These kits will also come with motors and fans!

Related Websites

Visit our partners at www.solarschoolhouse.org



Foil-coated manila paper with cut-out half circle



Amp meter hooked up to solar cell



Solar cell (bottom of funnel) attached to meter.