

All About The Sun

Investigation Data Sheet



Make a Solar Oven

Solar energy — light from the sun — is the Earth's greatest source of heat and light energy, and is a clean, free power resource that can be used to do all sorts of work.

Objective

Make a solar oven to demonstrate how we can use the sun's energy to cook food.

Materials

- a thermometer
- a cardboard box
- several feet of aluminum foil
- several sheets of black construction paper
- tape
- a muffin or other food you can heat up

Safety Notice: All applicable laboratory safety rules must be followed. Students should not perform any experimental activity without the teacher's supervision and express permission. Students must follow safety guidelines and wear appropriate protective gear.

Procedure

1. Open the cardboard box and line all the inside surfaces of the box with aluminum foil. The foil will trap the heat in the box.
2. Using tape, cover the outside of the box with black construction paper. The black paper will absorb heat energy from the sun.
3. Place the muffin or other food item inside the box with the thermometer.
4. Place your newly-made solar oven in the sunlight. (If it is cool outside, try a sunny window sill.)
5. With the thermometer, observe the starting temperature and record it in your data table in degrees Celsius ($^{\circ}\text{C}$) or Fahrenheit ($^{\circ}\text{F}$).

6. Wait five minutes and check the temperature again. How has it changed? Be sure to record the temperature in the data table.

7. Continue to check and record the temperature inside the solar oven. How long did it take for your muffin or other food to heat up?

Conclusions

- Why was the inside of the oven lined with aluminum foil?

- Why was the solar oven covered in black paper?

- What are three other ways people use solar power?

- What would Earth be like without the sun?

Data Table

Starting Temperature Inside Solar Oven	Temperature after 5 minutes	Temperature after 10 minutes	Temperature after 15 minutes	Temperature after 30 minutes	Temperature after 60 minutes