



Build A Solar Oven

Energy demand is constantly increasing, but the fossil fuels that we have depended on will begin to run out. Renewable, clean resources, like solar energy, should be part of the solution for powering the future.

Objective

Build a solar-powered oven, thereby converting solar energy to heat energy.

Materials

- a large cardboard box with a lid
- a small pizza box
- some old newspapers for insulation
- black construction paper
- spare cardboard strips
- aluminum foil
- a pencil
- scissors
- glue
- tape
- a heavy-weight, clear piece of plastic
- marshmallows
- graham crackers
- a chocolate candy bar

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. Cut a trap door in the lid of the large box one inch from the edges and make a window on the inside of the box by fitting the heavy duty plastic over the opening in the lid and taping it securely.
2. Line the bottom of the pizza box with black construction paper.
3. Cut out strips of aluminum foil and glue them to the sides of the pizza box.
4. Fold back the flap of the pizza box and glue foil on it too.
5. Line the large box with crumpled newspaper for insulation.
6. Place the pizza box on top of the paper and fill in all the extra space around it with more newspaper.
7. Prop open the flap of the pizza box with a pencil so the foil lining will reflect as much sunlight as possible.
8. Place the spare cardboard pieces over the insulated spaces.

9. Find a sunny spot and place the oven there.
10. Layer the chocolate and marshmallow on top of the graham cracker inside the pizza box and place the lid on the large box.
11. Observe through the window every ten minutes. Remove the graham cracker when the marshmallow and chocolate have melted.
12. Eat your results.

Conclusions

- What is the purpose of the aluminum foil in the experiment?

- What is the purpose of the black construction paper?
