

Solar Oven Contest

Purpose: The purpose of this lab is to construct a solar oven that will hold a soda can filled with water and raise its temperature to the highest possible in 40 minutes.

Materials:

- Box
- Aluminum Foil
- Plastic Wrap
- Black Paint
- String
- Tape
- Scissors
- Thermometer

Rules:

1. The oven must be no longer than 70 cm wide, 50 cm tall and 50 cm deep
2. You and your group have one class period to build your oven
3. The can of water may be placed in any part of the solar oven, but no water can leak out the top
4. Extra credit will be given to the group(s) with the biggest temperature change

Design:

Sketch and describe your solar oven in the space below. Thoroughly explain your group's rationale for deciding on your particular design. Be sure to include or label the materials you used in your explanation.

Data:

Minutes	Temperature (° C)
0	
5	
10	
15	
20	
25	
30	
35	
40	

Analysis Questions:

1. What was the temperature increase in your can of water?
2. What feature(s) of your solar oven do you think raised the temperature of your water?
3. What feature(s) of the winning solar oven contributed to the raised temperature of the water?
4. What concepts from class did you consider when creating your solar oven?
5. If you were to redo this competition, what would you change in your experimental design?
6. What is the purpose of the black paint?
7. What effect did aluminum foil or plastic wrap have on the experiment's outcome? (If your group did not use either of these materials, consult with a group that did).