

PIZZA BOX SOLAR OVEN

Presented by



WHAT YOU WILL NEED:

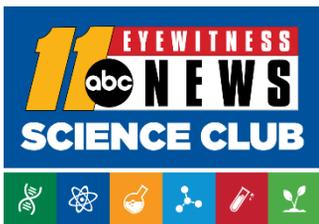
- Cardboard pizza box
- Pencil
- Scissors
- Aluminum foil
- Tape
- Black construction paper
- Plastic wrap
- Newspaper
- Oven mitt
- Pie plate
- (optional) Thermometer that goes to 250 degrees F



INSTRUCTIONS:

1. Clean out your pizza box. No bits of cheese please!
2. Using a pencil, draw a line one inch in from the edges of the box top.
3. Use a box cutter or scissors to cut out three of the four sides of the line you just drew.
4. Make a crease along the uncut side of the square to create a flap that stands up.
5. Cut a piece of aluminum foil large enough to cover the inner side of the cardboard flap. You may need two pieces.
6. Wrap the foil tightly and secure with tape. *What is the purpose of the foil?*
7. Line the bottom of the pizza box with black construction paper. *What purpose does the black paper serve? Would white paper work the same way?*
8. Cut two pieces of plastic wrap that are the same size as the top of the pizza box.
9. Use tape to secure the plastic wrap to the inside edges of the square window you cut into the box. You are creating an airtight window. *Why do you want to make your oven airtight?*
10. Roll up some newspaper pages and stuff them into the sides of the box. *What purpose will the newspaper serve?*
11. It's time to cook! The best time to use this oven is 11AM and 2PM when the sun's rays are most direct. Make sure you put your food on a dish so you don't mess up the interior of your oven.
12. Solar s'mores or nachos, anyone?





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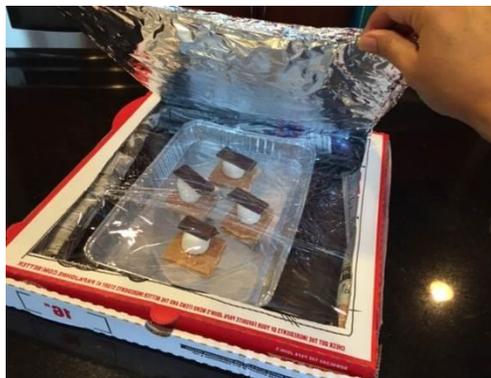


Going Camping? Interested in methods of cooking that don't add greenhouse gasses to the atmosphere? If you're patient and willing to move your oven where the sun is, you'll be rewarded with hot, yummy food!

Several scientific phenomena are involved in making your oven:

- **HEAT** is the form of (thermal) energy that is transferred by a difference in temperature. You want to transfer the sun's heat to your solar oven.
- **REFLECTION** is throwing back of light, heat or sound by a body or surface (like a mirror). The foil you'll use in your oven will reflect the sun's light and heat inside your oven.
- **ABSORPTION** is when energy is taken into a material, rather than reflected. In your oven, the black paper will absorb the heat that the foil is reflecting into it.
- **CONVECTION** is the transfer of heat by the movement of a gas or liquid. You'll use the clear wrap to make your oven airtight so the warmed air cannot leave through convection.
- **INSULATION** Your newspaper will help prevent the heat from leaving the oven through **RADIATION**.

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