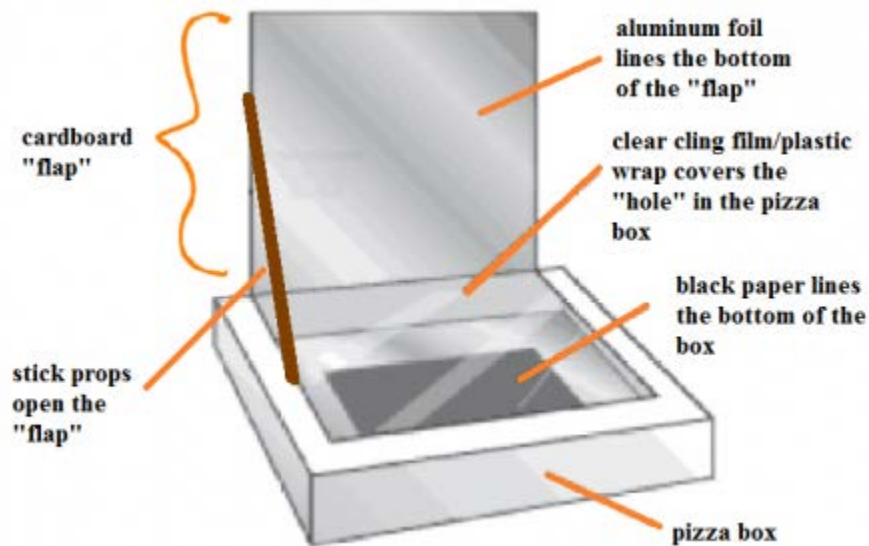


# Make your own solar oven!



A solar oven uses the sun's light to cook food. There are three main parts of a solar oven. Can you find these parts in the oven above?

1. **Light concentrator:** This is something that directs the light into the solar oven.
2. **Light to heat converter:** This is something that turns the light into heat.
3. **Heat trapper:** This is something that lets the light into the oven, but doesn't let the hot air in.

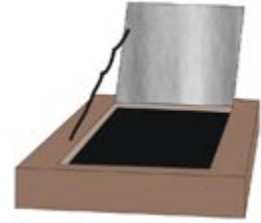
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## Materials:

<ul style="list-style-type: none"><li>• Cardboard pizza box</li><li>• Box knife or scissors</li><li>• Aluminum foil</li><li>• Clear tape</li></ul>	<ul style="list-style-type: none"><li>• Plastic wrap Black</li><li>• construction paper</li><li>• Newspapers</li><li>• Ruler, or wooden spoon</li></ul>
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## What to Do:

1. Use a box knife or sharp scissors to cut a flap in the lid of the pizza box. Cut along three sides, leaving about an inch between the sides of the flap and the edges of the lid. Fold this flap out so that it stands up when the box lid is closed. *It may help to score the side that must be bent.*
2. Cover the inner side of the flap with aluminum foil so that it will reflect rays from the sun. To do this, tightly wrap foil around the flap, then tape it to the back, or outer side of the flap.
3. Use clear plastic wrap to create an airtight window for sunlight to enter into the box. Do this by opening the box and taping a double layer of plastic wrap over the opening you made when you cut the flap in the lid. Leave about an inch of plastic overlap around the sides and tape each side down securely, **sealing out air**. If you use a plastic bag, cut out a square big enough to cover the opening, and tape one layer over the opening
4. Line the bottom of the box with black construction paper - black absorbs heat. The black surface is where your food will be set to cook.
5. To insulate your oven so it holds in more heat, roll up sheets of newspaper and place them on the bottom of the box. Tape them down so that they form a border around the cooking area. The newspaper rolls should make it so that the lid can still close, but there is a seal inside of the box, so air cannot escape. **Also you can try to close any holes you may see with paper, tape, etc.**
6. The best hours to set up your solar oven are when the sun is high overhead - from 11 am to 3 pm. Take it outside to a sunny spot and adjust the flap until the most sunlight possible is reflecting off the aluminum foil and onto the plastic-covered window. Use a ruler to prop the flap at the right angle. **We have popsicle sticks that can be taped together.**
7. To take food out of the oven, open up the lid of the pizza box, and using oven mitts or potholders, lift the glass dish out of the oven. You can place your food on clear plastic or glass. Your solar oven will reach about 200° F on a sunny day,



## Ideas for things you can cook at home:

- **S'mores:** Marshmallows and chocolate on a graham cracker. Some like to insert the chocolate inside the marshmallow before cooking.
- **Hot dogs**
- **Toast and butter**
- **Nachos and Cheese**
- <http://www.hometrainingtools.com/images/art/SolarOvenRecipes.pdf>