

Make Your Own Solar Oven

- One large unused pizza box. The larger (outer) box should be slightly taller than the inner box. The inner box should fit inside the outer box with a 1" or 2" space between the two when they're nested. Make sure the inner box is taller than the dish you use for cooking.
- Saran wrap (or Plexiglas) the width and length of your outer box
- Roll of aluminum foil
- Black paper (cut to the size of the inner box)
- Glue
- Duct tape
- Sharpie
- Newspaper sheets, crumpled up
- Scissors or a box cutter
- Pencil or stick
- Ruler
- Warm, sunny day



Steps 1 & 2

Step 1: On the top of the pizza box's lid, draw a square that is about one inch inward from each edge.

Step 2: Get an adult's help to use a utility knife (and the ruler as a straightedge) to carefully cut along each side of the square you just drew except for the side that runs along the hinge of the box. Cut all the way through the cardboard on those three sides of the square. Then fold the flap back slightly along the attached side.



Step 3

Step 3: Line the inside of the cardboard flap with aluminum foil. Fold the edges of the foil over the flap to help hold the foil in place and glue the foil onto the flap. Keep the foil as smooth as possible. *What do you think the purpose of this foil is?*

Step 4: Cover the opening made by the flap (in the lid) with a layer of plastic wrap. Attach the plastic wrap to the opening's edges using shipping tape or black electrical tape. Make sure there are no holes in the plastic wrap and that all of its edges are completely attached to the lid. *Why do you think it's important to make sure the plastic wrap completely seals the lid's opening?*



Step 4



Step 5

Step 5: Line the inside of the box with aluminum foil so that when you shut the box the entire interior is coated with foil. It is easiest to do this by covering the bottom of the box with foil and then covering the inside part of the lid (going around the plastic-covered opening) with foil, too. Glue the foil in place. *Why do you think you should coat the inside of the box with foil like this?*

Step 6: Glue or tape a sheet of black paper to the bottom of the box, centered there. This will act as your solar oven's heat sink. *How do you think it will help cook your food?*



Step 6

Step 7: Use a wooden skewer, pencil or straw (and some tape) to prop the solar oven's lid up, at about a 90-degree angle from the rest of the box.

Step 8: Leave the solar oven outside on a hot day (non-windy days of at least 85degrees Fahrenheit work best). *Does the oven get very warm?*



Steps 7 & 8

Extra: If you want to cook a s'more, break a graham cracker in half and place a marshmallow and small piece of chocolate between the cracker halves. Place the prepared s'more on a small square of aluminum foil that is slightly larger than the s'more (this will serve as a tray) and put it in your solar oven on top of the black sheet of paper. Put the solar oven outside where it will get full, direct sunlight for at least 30 minutes and keep it turned so that the flap faces the sun. When the marshmallow is soft your s'more should be ready to eat and enjoy!