

MAKE YOUR OWN SOLAR OVEN

MATERIALS

- Small, empty pizza box
- Aluminum foil
- Box cutter
- Permanent marker
- Tape
- Ruler
- Elmer's glue
- Plastic cling wrap
- Black construction paper

DIRECTIONS

- 1.** Begin by drawing a square on the lid of your pizza box. You should leave a 1 inch margin. Cut only 3 sides of the square, making a flap.
- 2.** Line the bottom of the pizza box and the bottom of the cover with tin foil. Then, take the plastic cling wrap and cover the hole made by the flap. Make sure to line the top and bottom of the hole.
- 3.** Tape or glue the black construction paper to the inside bottom of the pizza box.
- 4.** Use the ruler to keep the flap open and take the oven outside on a sunny day. Put in a cold piece of pizza or the ingredients to make s'mores with and put them in the oven. Make sure to get the right angle of sunlight so that it's hitting food inside.

STEM ACTIVITY CARDS



ACTIVITY FOUND AT:
[http://www.icanteachmychild.com/
make-your-own-solar-oven/](http://www.icanteachmychild.com/make-your-own-solar-oven/)

WHY?

The heat from the sun is trapped inside of your pizza box solar oven, and it starts getting very hot. Ovens like this one are called collector boxes, because they collect the sunlight inside. As it sits out in the sun, your oven eventually heats up enough to melt cheese, or cook a hot dog! How does it happen? Rays of light are coming to the earth at an angle. The foil reflects the ray and bounces it directly into the opening of the box. Once it has gone through the plastic wrap, it heats up the air that is trapped inside. The black paper absorbs the heat at the bottom of the oven.

Your solar oven can reach about 200° F on a sunny day and will take longer to heat things than a conventional oven. Although this method will take longer, it is very easy to use, and it is safe to leave alone while the energy from the sun cooks your food. We made a cheese roll up by melting cheese on a corn tortilla. It took about 45 minutes for our cheese to melt and the tortilla to become soft. The internal temperature of our pizza box solar oven was 125° F.

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SCIENCE TERMS FOR FURTHER DISCUSSION:

- Light
- Reflectivity
- Insulation
- Temperature