

Activity: Solar Oven

On SCOPE's Things that... are hot episode, you saw Julia make a solar oven.
Here's how she did it.

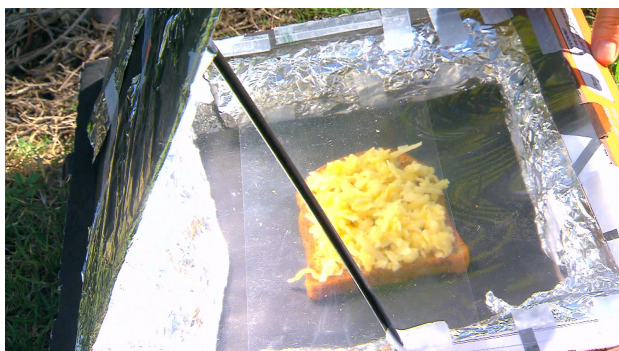


What you need:

- A sunny day!
- Empty pizza box
- Ruler
- Pencil
- Scissors
- Aluminium foil
- Sticky tape
- 2 A4 clear plastic sheets (you can buy them from the newsagent)
- Newspaper
- 1 A4 piece of black paper
- Glue
- 1 Straw
- Something to cook (e.g. cheese on toast)

What to do:

1. Draw a square on the lid of the pizza box about 2cm in from the edge.
2. Cut along three sides of the square so you can fold it up to make a flap.
3. Cover the inside of the flap with aluminium foil and stick it in place with sticky tape.
4. Cover the hole in the lid of the pizza box with the clear plastic sheet and sticky tape.
5. Scrunch up a few pieces of newspaper into a sausage and sticky tape it to the inside edges of the pizza box. This will create a wall of insulation about 10cm wide.
6. Cover the newspaper with aluminium foil and attach it with sticky tape.
7. Cut out a square of black paper and glue it to the inside base of the box.
8. Place the solar oven in the sun and position the flap so the foil reflects sunlight into the box.
9. Hold the flap in place with a straw and sticky tape.
10. Add some food to your oven. Remember the oven won't cook everything, especially meats, but it does do a mean cheese on toast!
11. It might take a while, but eventually the sun will cook your food, ready to be eaten!



What's happening?

Have you ever got into a car that's been sitting in the sun all day? Well you've probably noticed that the car gets hot – really, really hot! This is because the car captures sun light and traps all the heat inside.

The same things happens in the solar oven. The pizza box captures sunlight and the clear plastic sheet traps heat inside. The black paper helps to capture the sunlight because the colour black absorbs sunlight and heat, as opposed to white which reflects it. The newspaper and aluminium foil wall, as well as all the air that is trapped inside the wall, also provides insulation so the oven stays nice and hot.

Solar power is not only used for melting cheese, but as a renewable energy source, it will never run out! So scientists have created, and are improving on, solar cells which capture energy from the sun and convert it into electricity to power your home, large city buildings and even buses! There is a bus in Adelaide that is run entirely by on solar power- it is called Tindo!