

COOK TOAST IN A SOLAR OVEN

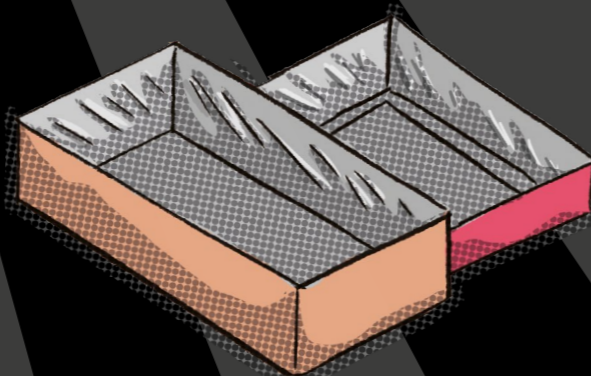
Have you ever noticed that some spacecraft have shiny, golden panels sticking out of them? These are solar panels. They collect light energy from the Sun and turn it into electricity to power the spacecraft.

We can also use the heat, or infrared energy, from the Sun. If you ever get stuck on an alien planet, you might need a way to cook food. A great way to do this is to make a solar oven. It collects heat from the Sun and magnifies it to a temperature high enough to cook food. In this experiment you will make toast in your own solar oven!

YOU WILL NEED:

- an empty shoebox
- a pencil
- scissors
- aluminium foil
- PVA glue
- some black card
- cling film
- sticky tape
- two straws
- a small plate (small enough to fit inside the shoebox)
- a slice of bread

1 Draw a rectangle in the middle of the shoebox lid with a 3 cm border all the way around. Cut along two short and one long side of the rectangle to make a flap.

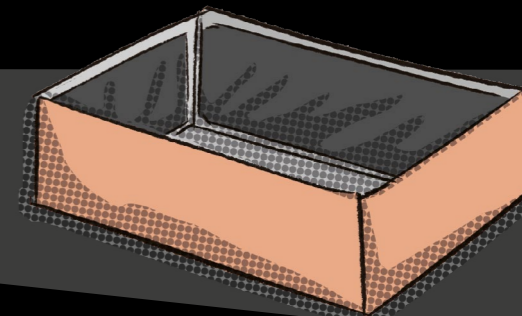


RED ALERT!

Ask an adult to help you with this activity. Be careful with your solar oven. If it is left out in the sun it can get very hot inside!

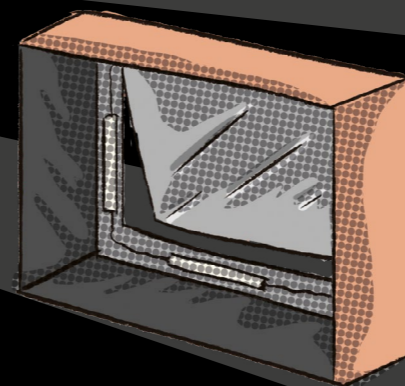
3

Cut the black card to fit the four sides inside the box and glue them into place over the foil.



4

On the underside of the lid, stretch some cling film across the opening where the flap is and tape it in place.



5

Now the good bit! Place the slice of bread on the plate and inside the box. Replace the lid. Put it in direct sunlight and prop the flap open with the straws. Check the bread regularly and before long you should have a piece of toast!

The foil concentrates the Sun's heat energy inside the box. The black card absorbs the heat (lighter colours would reflect back some of the heat), making the oven nice and toasty!

SPACE FACT

When an astronaut goes out on a spacewalk in direct sunlight, there is a danger that their spacesuit could act like a solar oven! Special materials help to keep out a lot of heat, but the astronaut will still get hot. To keep cool, they wear underwear that has lots of tubes inside it. Cold water runs through the tubes to keep the astronaut's body cool.