Australian Government
Department of Industry
Innovation, Science, Research
and Tertiary Education

Questacon
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Questacon Science Squad Activity – Solar powered oven

The video for this transcript can be found on the Questacon Science Squad website at:

http://sciencesquad.questacon.edu.au/activities

Transcription from video:

(Sound of bubbles popping)

Tim: Hi everyone, my name's Tim and I from the Questacon Science Squad. Today I'm going to show you how to make a solar powered oven. To do this.

You need:

- pizza box, which has been painted black
- a thumb tack
- a piece of string
- a nail
- some chocolate

(Tim says 'yum, yum, yum, yum, yum')

- some clear plastic sheets and,
- some aluminium foil

So, the first step is to cut out a window from the top of the pizza box.

(Tim lifts a flap that's been cut out)

I've measured five centimetres from this side, this side and this side and left a hinge along the bottom here.

(Tim points at each side to demonstrate his measurement)

Once you've done that, you can take one of the pieces of plastic, lay it across the top. Take some tape, tape it along one hedge here.

(Tim inserts the sheet of plastic and tapes it to the top of the box)

Take two more pieces of tape and tape along the other edges. And you want to give this a double glazing effect, so they can open it up and take another piece of plastic, get some pieces of tape and tape this across the top.

(Tim opens up the main part of box and inserts the plastic sheet to the other side where the insert has been cut out)

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OK, that piece is held in. Take two pieces of tape and put one piece across the bottom and one more piece of tape at the top – just across this edge here and hold it down.

(Looking at the screen Tim applies the tape to the top right corner)

So, you can close that up now.

(Tim closes the constructed box)

And we're going to make a mirror edge along this piece here.

(Tim lifts the cut out flap up)

To do that, take your aluminium foil, hold it at the base and then just fold it across the back.

(Tim is attaching the aluminium foil to the insert)

To give you a nice, smooth mirror surface. Scrunch it across the back. And that is your mirror surface. You want to be able to adjust this mirror, because at the moment you want to make it so the sun can go straight in there, to do that you can take a piece of string and a thumb tack. Put the thumb tack through the piece of string and push that through the top.

(Tim puts the thumb tack through the string and then secures the string to the foiled insert)

Swing this around.

(Tim swings the box around 180 degrees)

Push a nail through the base, just here.

(Tim inserts the nail through the middle of the base of the box – not all the way though)

Take the string and you can adjust the string around the nail to whatever level you want it to be.

(Tim is securing the piece of string to the nail at the back of the box by winding the string around the nail)

So, just wind it around a few times, push the nail in.

(Tim pushes the nail right into the box and then turns the box back around 180 degrees)

And once you have that, you can open it up, put your chocolate inside.

(Camera zooms in as Tim opens the lid to the main part of the box and puts a piece of chocolate inside)

Point it in the direction of the sun.

(Tim adjusts the foil panel)

And you can wait for the chocolate to melt.

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(Camera zooms out on the box and back to Tim)

If you want to find out to make your own solar powered oven, head to the Questacon Science Squad website