

- 4 aluminium drink cans of which:
  - 3 are painted with matt black paint (or blackboard paint) of which:
    - 2 have been insulated with pieces of insulation that is safe to handle – sheeps wool for example covering the back half or two thirds of the can of which:
      - 1 is placed in a clear plastic bag or container such as a clear 2l bottle with the bottom cut off
- Thermometer
- Recording sheet

Explain to the class that they are going to take part in a solar water heating experiment. Ask for volunteers to help you set up the experiment.

You will need to set up – one shiny can, one matt black can, one matt black can which has insulation attached to the back half, one matt black can with insulation attached to the back half and placed in a clear, sealed plastic bag.

Each can is filled with cool water and the temperature taken and recorded. You will need to set the cans on a sunny windowsill with the black sides facing the sun. Take the temperature readings every hour (or more frequently if it is a very sunny day) and record the temperature on the whiteboard. Very shortly (if it is a sunny enough day!) you will see a clear pattern beginning to emerge.

The water will heat more quickly with each of the modifications to the can. Use this to explain how solar water heating panels are made. Ask the pupils which time of year solar water heating is most effective.

**!! Warning: if it is a very hot day the can might get too hot to touch !!**

