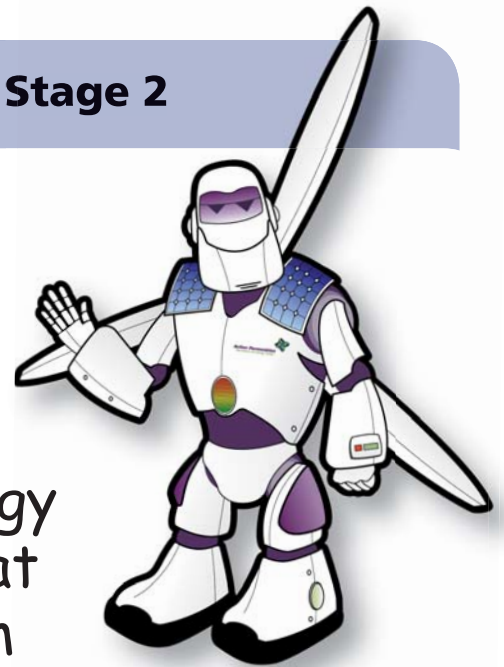
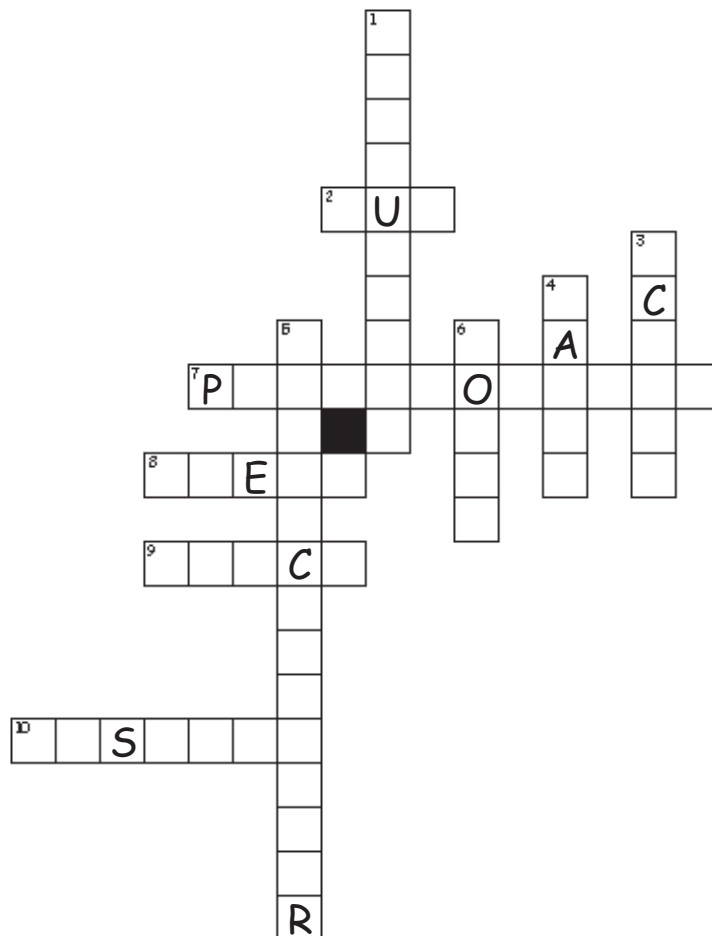


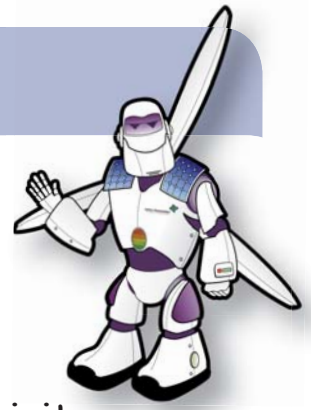
Solar Energy

Renewable Robbie has learnt that solar energy means energy that comes from the sun. Heat and electricity can come from the sun!



Complete the crossword below to help you remember what you have learnt about solar energy:



**Across**

2. The closest star to the earth
7. These cells allow sunlight to be changed into electricity
8. The outside of the solar collector is _____ which allows the sun's rays to pass through easily
9. The bottom of the solar collector is painted this colour
10. _____ solar heating attracts the sun through glass

Down

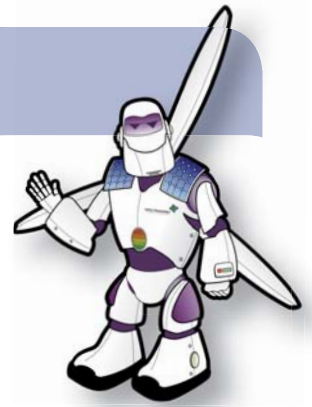
1. Small PV cells can power these
3. This type of solar heating needs a solar collector fitted to the roof of a building
4. In a solar collector, the pipes are filled with _____
5. A thin flat box that attracts the sun's rays
6. This type of energy means light or heat that comes from the sun

Renewable Robbie hopes you completed the crossword. He thinks you would enjoy this next experiment:

Solar Heating Experiment

Solar energy can be used to heat buildings. Renewable Robbie saw flat-plate collectors on a roof. Flat plate collectors are made of dark metal plates, covered with glass which absorbs heat. The heat is transferred to air or water which circulates round a building. Why don't you have a go at making a solar collector?





What you will need...

Different sizes of aluminium containers (deep, shallow, wide)

Black paint

Measuring jug

Water

Cling film

Newspapers

Thermometer

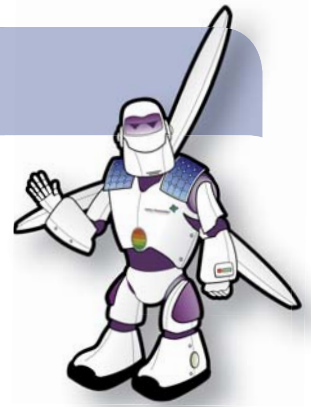
Instructions...

- Paint the inside of each container black
- Add 200 ml of water to each container
- Carefully cover the containers with cling film, tape in place if necessary
- Place the containers on a stack of newspapers in the sun for 10 minutes
- Place the containers on a stack of newspapers in the sun for 10 minutes
- After 10 minutes, pour the water into a container and measure and record the temperature. Repeat for each container.

Which shape works best as a solar collector?

Container	1	2	3	4	5
Temperature					





Draw a sketch of the best solar container and beside it, explain why you think it worked better than the others:

Why do you think the inside of the containers were painted black?

Renewable Robbie loves doing that experiment. Now, join him to learn about water energy.

