

Lesson 8	Solar Photovoltaic (PV) Uses and Applications		
Level	Key Stage 2	Time required	30 minutes
National Curriculum Links			
Science, D&T, Geography (view scheme of work for full details of links)			
Aims			
<ul style="list-style-type: none"> Using the solar panels the children will explore simple circuits and learn that the sun can produce electricity They will also learn that electricity must flow around a circuit in order for it to work. 			
Resources required			
Solar Photovoltaic Kit, optional: lamp (with incandescent bulb)			
Web search keywords			
Solar panel, photovoltaics, PV, solar power, sun electricity			

Photovoltaic Kit

Instructions are included with the Photovoltaic Kit. These can be downloaded in PDF format from: http://www.ecostyle.co.uk/products/solar_photovoltaic_kit/photovoltaic_kit_activity_sheets_v2.15.pdf

The solar electric panel works like a battery, so to make it power something you will need a complete circuit.

The LED and buzzer modules are polarity-dependant, so care must be taken to ensure the red plug is inserted into the red socket, and black plug into the black socket. The motor module will operate regardless of polarity, but the LED and buzzer modules will only when operate when properly connected.

Risk assessment

The lamp will get hot during use. Avoid burns to students or melting the solar cell. The solar cell must not touch the bulb. Ask the students to turn the lamps off when not in use.

Task 1

Connect the PV cell to the motor module. Make sure you have made a complete circuit.

Put the PV cell in sunlight or under an incandescent lamp, dimpled clear plastic facing towards the light source. NB – fluorescent, low-energy or halogen bulbs provide enough energy to power the PV cell effectively.

The blue propeller on the motor module will rotate. The higher the light level, the faster the propeller will spin.

Disconnect the motor module, and then connect the red LED (light-emitting diode) module. The LED will illuminate. The higher the light level, the brighter the LED will become.

Disconnect the LKED module, and then connect the buzzer module. The buzzer module will sound. The higher the light level, the greater the pitch/volume of the buzzer.

Task 2

In pairs ask the children to think about where in the world this technology could best be used. Would cold and cloudy, cold and sunny, hot and cloudy, hot and sunny be best?