Make It Go!



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Make It Go!

Key vocabulary

combustion engines, compressed, density, generators, hydroelectricity, magma, pistons, potential energy, renewable energy sources, reservoir, thermals, wind turbines

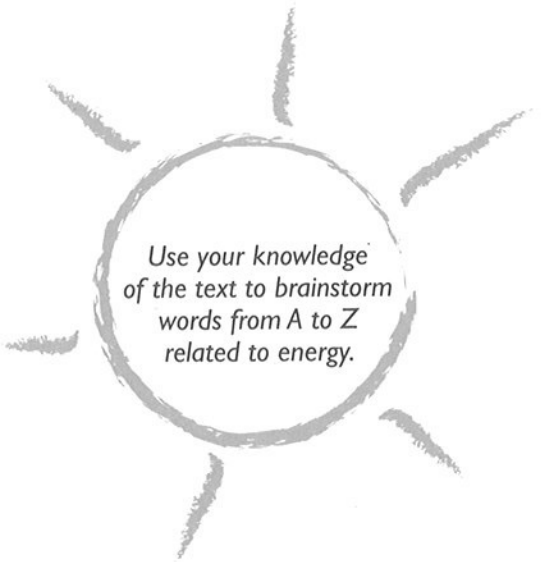
Grammatical conventions

- Prefixes: prehistoric, hydroelectricity, rechargeable
- Suffixes: powerful, combustion

Spelling

- Hyphenated words: super-fast, ultra-light
- Plural: countries, gases
- Compound words: greenhouse, hovercraft, quicksand, sunlight, underground

Creative thinking task – Knowledge



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Introduction

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Go into the street and look around you. Everywhere you turn there is movement: a person jogging past, a dog trotting along the street, a bird flying across the sky. But a lot of the moving things you see are machines. There are probably cars moving all around you, and buses, motor bikes and maybe trains. You're surrounded by machines with lots of moving parts.

All these things that move need fuel, or energy, to make them go. Humans and animals use food to make their muscles work. But have you ever wondered what makes machines go? Where does the energy come from?





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CHAPTER 1

Follow the Sun

Stand in the Sun. Feel its warmth on your skin. See how it lights up everything around you. You are experiencing solar energy – the energy of the Sun.

All the energy on Earth comes in one way or another from the Sun. We use its heat energy to dry clothes on a line, and we use its light energy when we open the curtains to brighten a room. But the power of the Sun can also be converted into other forms of energy that can make things move.

Did you know?

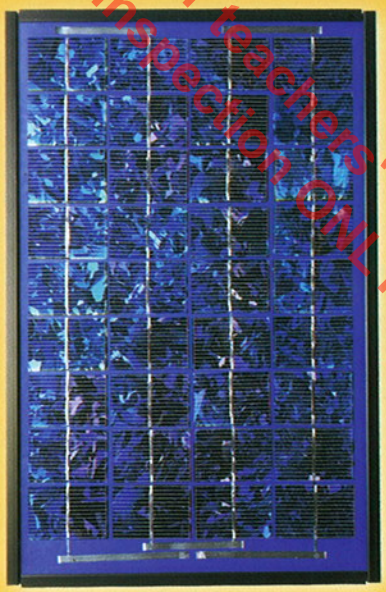
Solar energy is silent, leaves no waste and needs no fuel, but it is not very efficient. Only around 15% of the Sun's energy is converted into electricity in a solar cell – the rest is lost.

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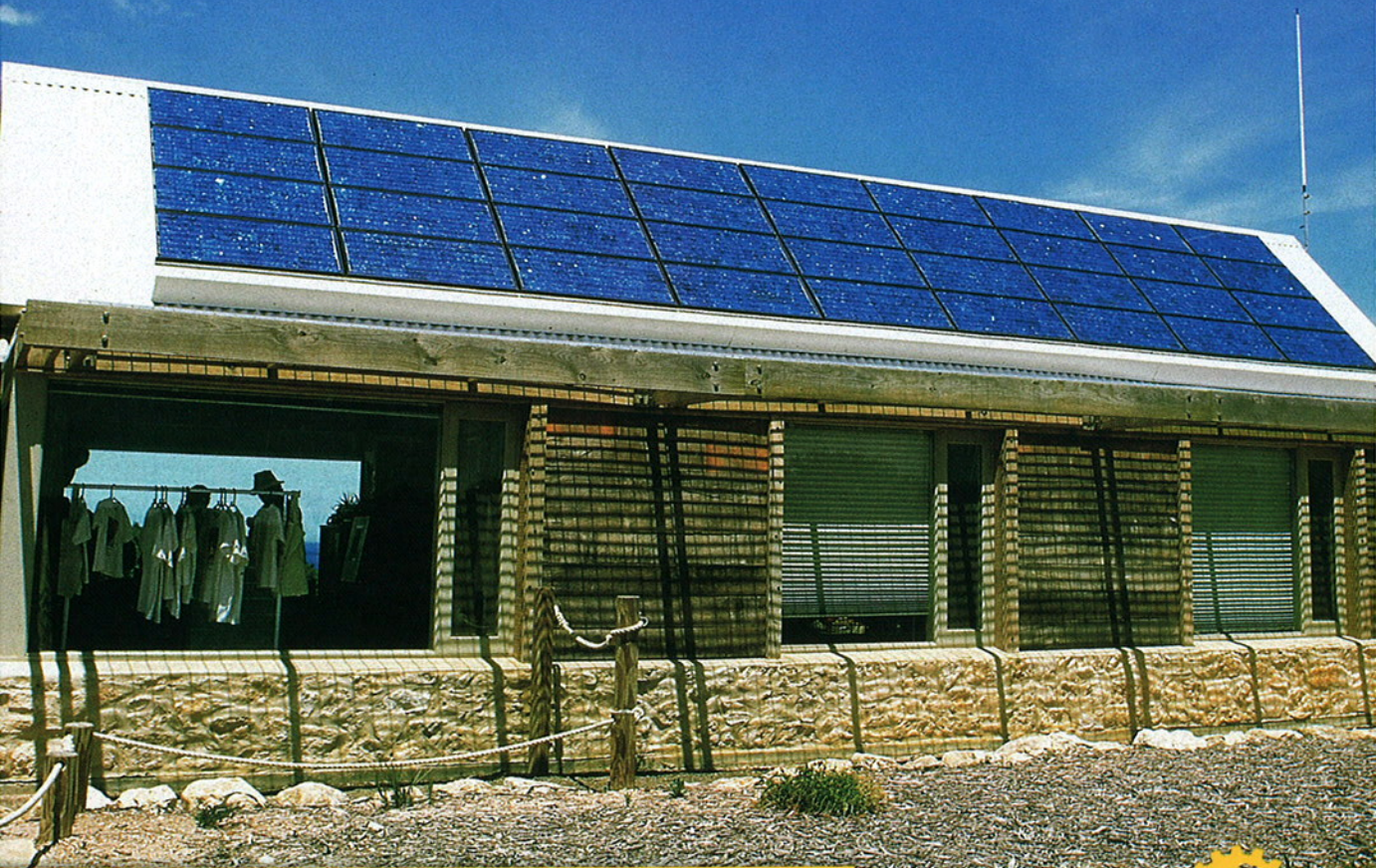
Solar Cells

Solar cells convert the Sun's light energy into electricity. When sunlight hits the solar cells, it goes through a process that forms an electrical current. This current can then be directed through wires to drive electric motors.

To get enough electricity to do this, solar cells are linked together in solar panels. The more panels you have, the more power you get. This power can be used straight away, or stored in batteries.



solar panel, made up of individual solar cells



This house gets its energy from the solar panels on its roof.

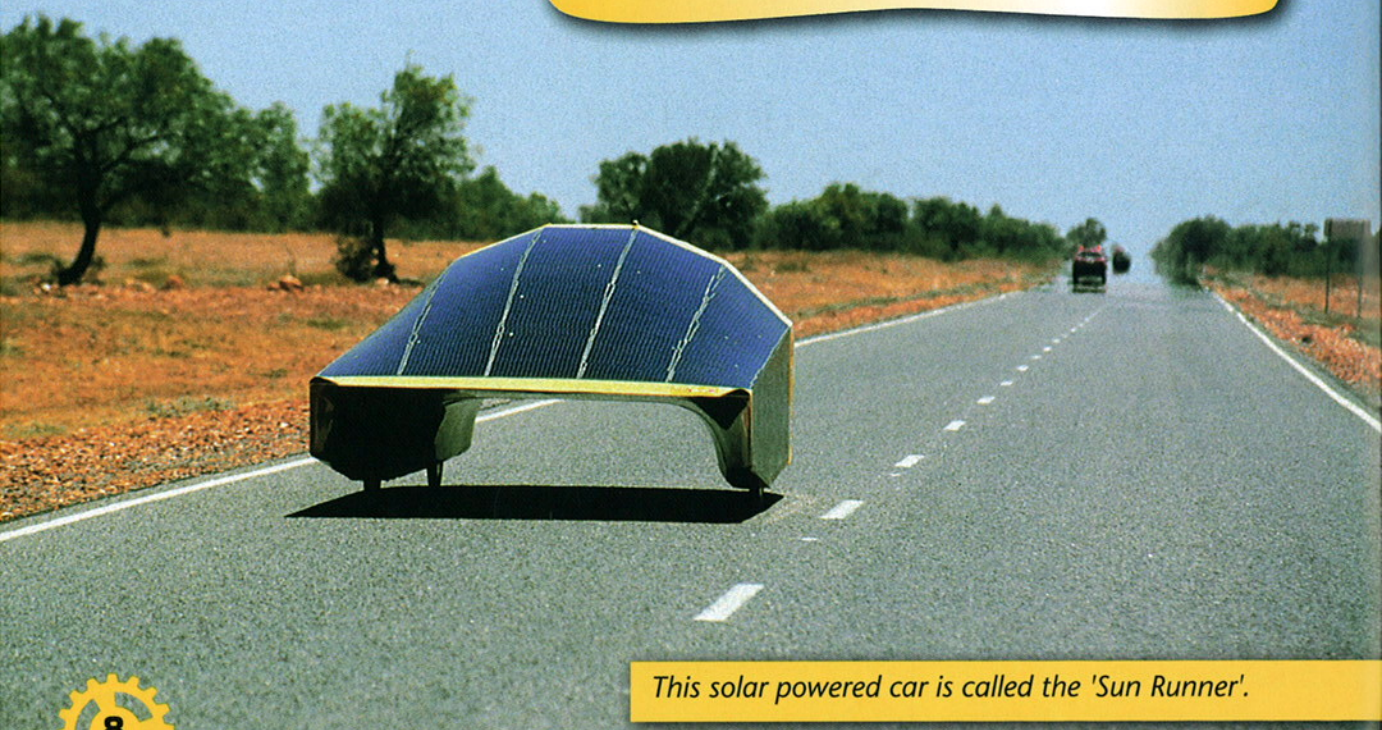
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Fuelled by Sunlight

It takes a lot of energy to move cars, boats and other vehicles, so they need lots of solar panels. You can see in the picture of the solar cruiser that most of the front of the boat is taken up with flat solar panels. It also has solar panels on its roof, which look like wings. To power a fast car, you'd need so many solar panels that the car would be too heavy to move! So solar cars are light-weight, usually carry only one person, and move quite slowly.

Did you know?

The largest solar boat in the world is the 'Alster Sun' in Hamburg, Germany. It is twenty-seven metres long, weighs thirty-four tonnes and carries 120 passengers. It travels at five kilometres an hour using its solar powered motor to drive two propellers.



This solar powered car is called the 'Sun Runner'.