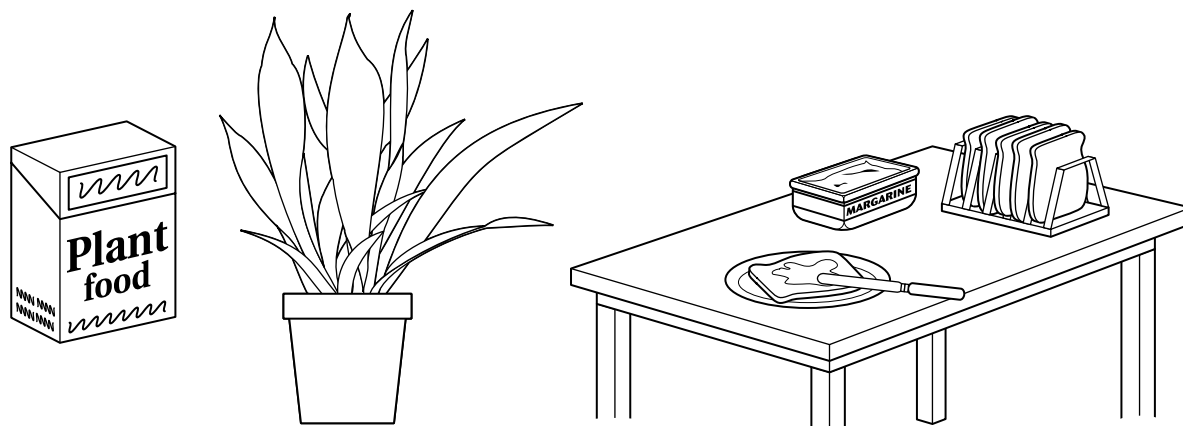


Hydrogen is a very useful chemical, and it is very common. Most of the Sun is made of hydrogen. Hydrogen is also part of most of the chemicals that make up your body. In fact, astronomers think that 90% of the universe is made of hydrogen!

Hydrogen can be used to make fertilisers. It can also be used to convert vegetable oil into margarine, and to make other chemicals such as hydrochloric acid (needed to make electronic equipment). Liquid hydrogen can be used as a rocket fuel, and it can even be used to generate electricity for spacecraft.



You have seen how hydrogen can be made by reacting a metal with an acid. However, this is not how hydrogen is made in industry. Many different chemicals contain hydrogen, and hydrogen can be obtained by splitting up these chemicals in different ways.

The gas that you burn in a Bunsen burner is called natural gas, and the chemical name for it is methane. Methane is made up of hydrogen and carbon. Methane can be made to react with steam, and one of the products of the reaction is hydrogen.

Water is another chemical that includes hydrogen. If electricity is passed through water, it splits up to form hydrogen and oxygen gases. Water can also be made to react with red hot iron, and hydrogen is one of the products of the reaction.

- ?**
- 1 Which is the most common substance in the Universe?
  - 2 Write down the names of two chemicals that contain hydrogen.
  - 3 Describe three different ways of making hydrogen from other chemicals.
  - 4 Why is hydrogen useful? Write down as many uses as you can.
  - 5 Some people think we should use hydrogen as a fuel for cars, instead of petrol. Do you think this is a good idea? Explain your answer.
  - 6 Find out:
    - how hydrogen can be made into a liquid
    - what a fuel cell is, and why it is so useful in spacecraft.

**S** literacy, knowledge, research