



What circuits can do

Electricity can do much more than just make bulbs light. It can work other components, make heat and magnetism and even cause liquids to change.

Electricity can be used to make many things happen, not just light bulbs or work motors.

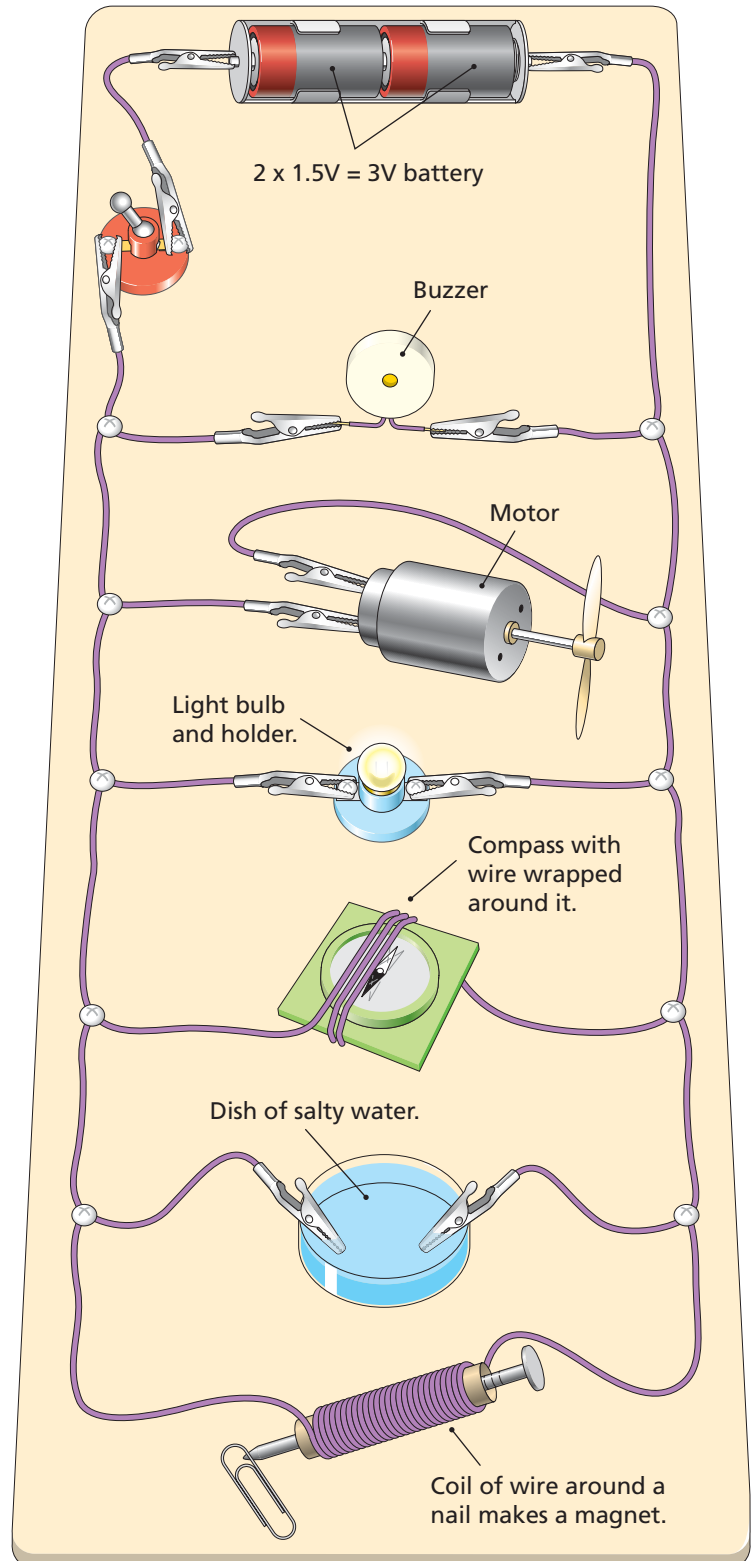
Many things at once

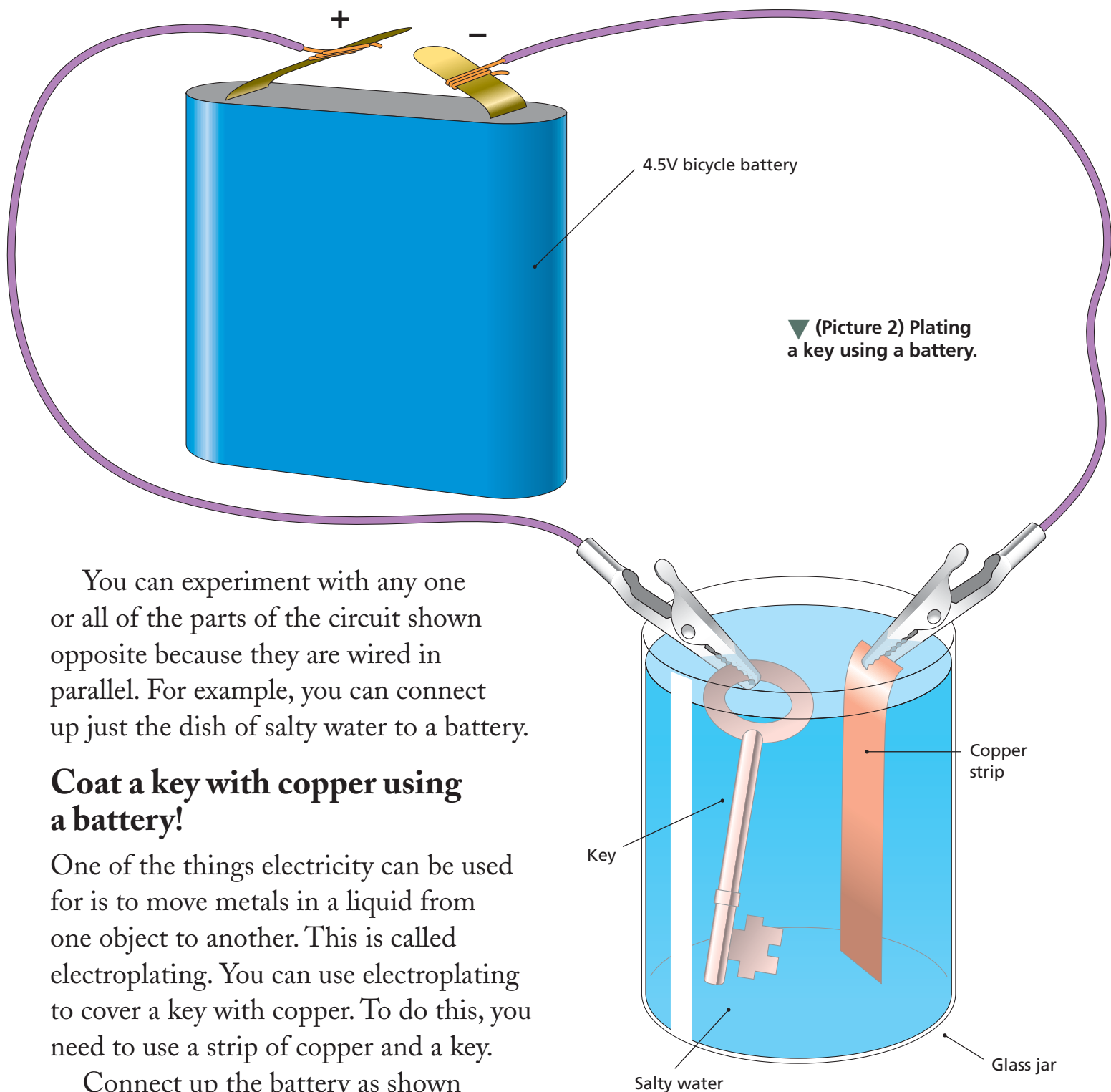
Circuits can be made to do many things at the same time. In Picture 1 you can see a circuit that shows some of these things. When the switch is closed, the buzzer will sound (electricity can produce sound); the motor will turn (electricity can cause movement); the bulb will light (electricity can produce light and heat); the compass will turn (electricity can make a coil of wire act as a magnet); the salty water will begin to bubble (electricity flows through liquids, and if you leave it connected long enough it can transfer metals in the liquid from one place to another); and the coil will pick up paper clips (another way that electricity can make magnetism).

Always make a loop

This is a parallel circuit, so all of these effects can go on at the same time. Notice that each component is in a loop with the battery, although some parts of the loop use shared wires.

► (Picture 1) Heat, light, sound, movement and magnetism can be created using a circuit.





You can experiment with any one or all of the parts of the circuit shown opposite because they are wired in parallel. For example, you can connect up just the dish of salty water to a battery.

Coat a key with copper using a battery!

One of the things electricity can be used for is to move metals in a liquid from one object to another. This is called electroplating. You can use electroplating to cover a key with copper. To do this, you need to use a strip of copper and a key.

Connect up the battery as shown in Picture 2 and watch as the bright chromium is covered by a coat of orange-coloured copper. This is electroplating. You will not be able to scrape off the copper!

Summary

- Electricity can produce sound, it can cause movement, it can produce light and heat, it can turn a wire into a magnet and it can transfer metals from one place to another.