3 Making a bulb light

To make a bulb light, you simply need to join the end of the bulb to each end of a battery.

You may think that it is hard to make electrical things. But as we have seen, if you take away the fancy cases, many electrical things are very simple. They are so simple, in fact, that we can make some battery-powered things with just a few items.

Metals carry electricity

It is important to remember that all metals allow electricity to flow through them. A material that does this is called a **CONDUCTOR**.

A material that doesn't allow electricity to flow through it is called an **INSULATOR**. Plastic and glass are insulators.
Now you can see why the equipment we looked at before was made mainly of plastic, glass and metal. The metal carried the electricity, while the glass and plastic protected us from it.

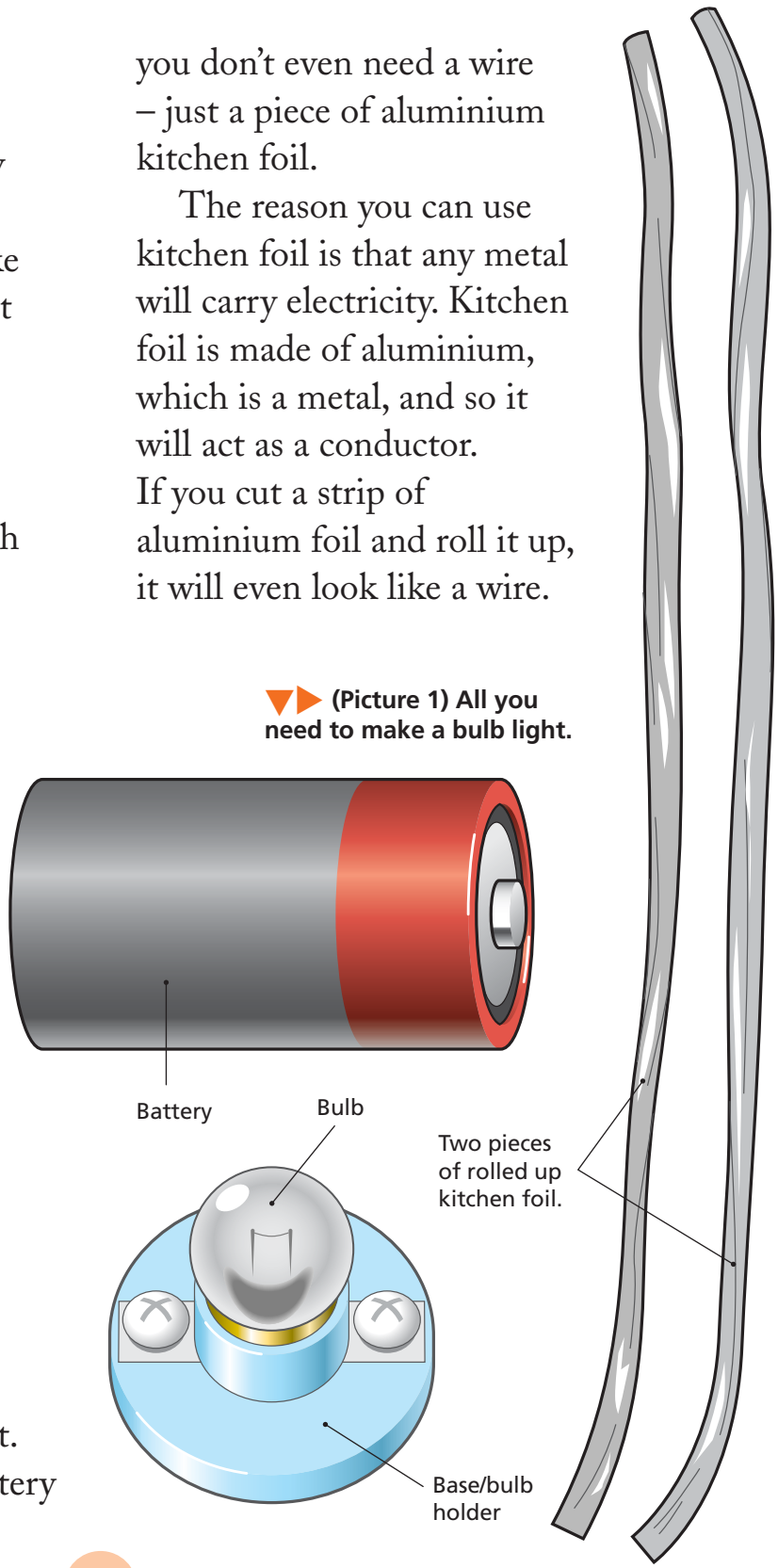
Make a connection

A connector is just a way of joining two things so electricity will be carried between them.

A wire is a connector. This has metal inside and plastic surrounding it. But for simple connections with a battery you don't even need a wire – just a piece of aluminium kitchen foil.

The reason you can use kitchen foil is that any metal will carry electricity. Kitchen foil is made of aluminium, which is a metal, and so it will act as a conductor.
If you cut a strip of aluminium foil and roll it up, it will even look like a wire.

(Picture 1) All you need to make a bulb light.



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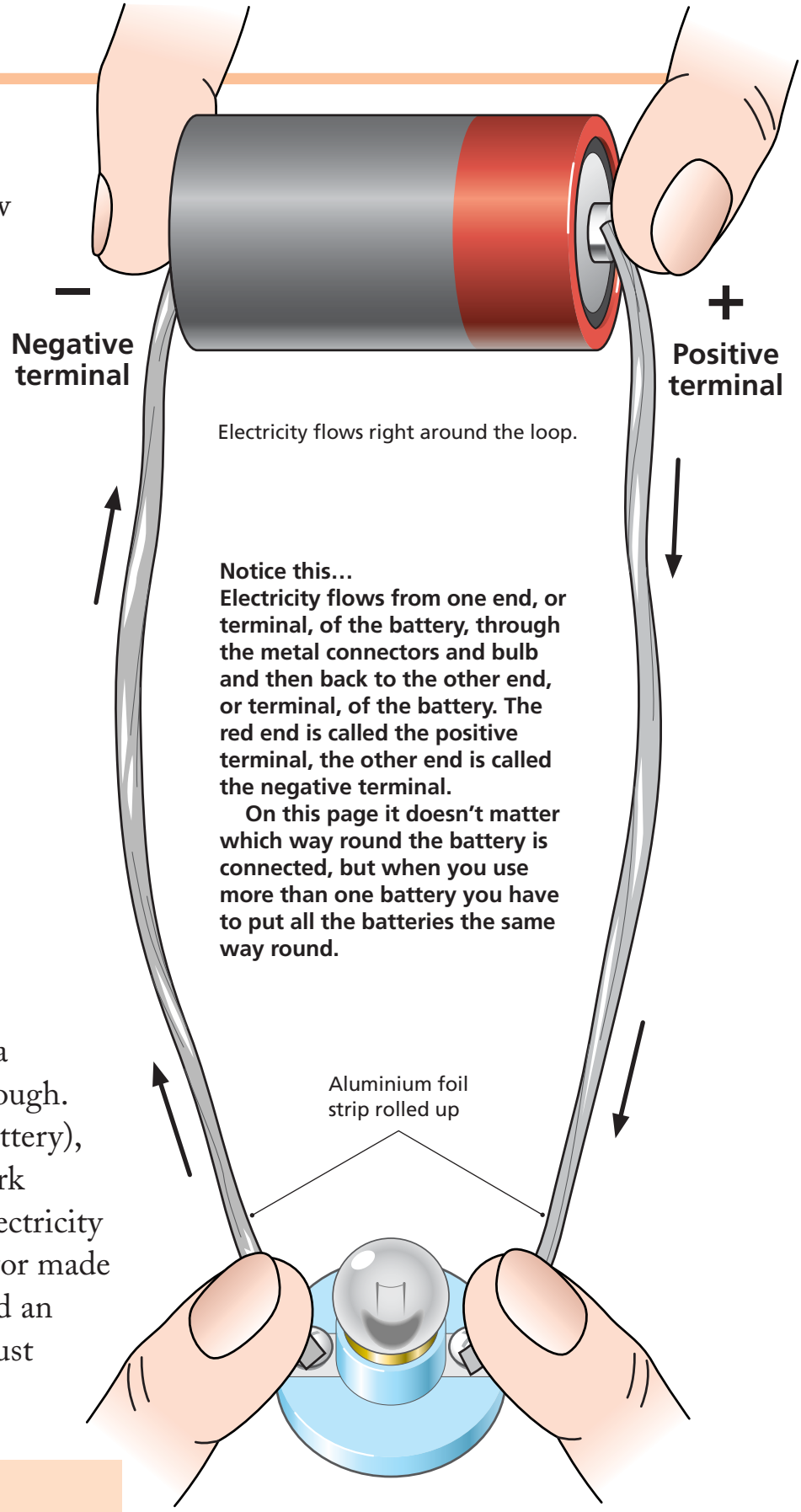
Make it work

You need to get electricity to flow from one end, or **TERMINAL**, of the battery through the bulb and back to the other end of the battery. If you can make this happen, the bulb will light. All you need is two pieces of rolled up kitchen foil, a battery, a bulb holder and a torch bulb (Picture 1). You simply hold the foil strips against the ends of the battery, and then get someone else to touch the other ends of the foil strips against the connections of the bulb holder (Picture 2). Then the bulb will light. It's as simple as that.

Circuit

What you have done is to make a loop that electricity will flow through. It has a source of electricity (a battery), something you want to make work (a bulb) and a way of allowing electricity to flow between them (a conductor made of aluminium). This loop is called an electric **CIRCUIT**, and you have just made the simplest circuit.



▲ **(Picture 2) This diagram shows how to connect a battery to a bulb.**

Summary

- **Metals carry electricity.**
- **A loop carrying electricity is called a circuit.**
- **To make something work, electricity must flow out of one end of a battery and in to the other.**

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