

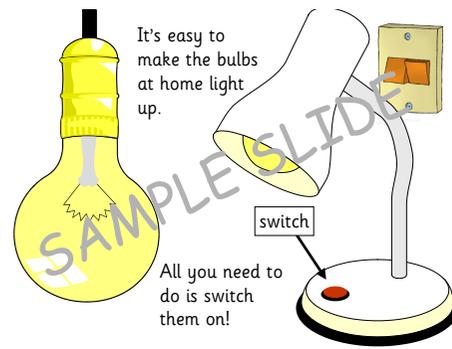
Will the bulb light up?

# Making Circuits

[QCA Link](#)

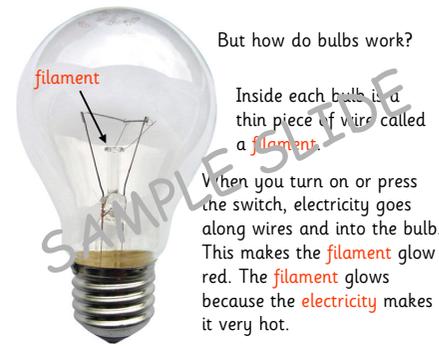
MD 2007

Unit 2F Section 4



It's easy to make the bulbs at home light up.

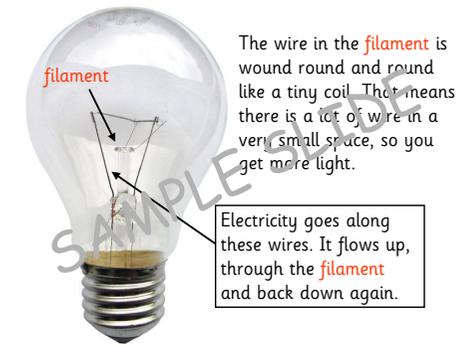
All you need to do is switch them on!



But how do bulbs work?

Inside each bulb is a thin piece of wire called a **filament**.

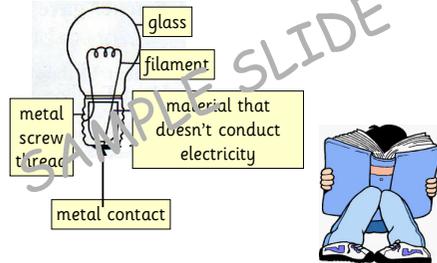
When you turn on or press the switch, electricity goes along wires and into the bulb. This makes the **filament** glow red. The **filament** glows because the **electricity** makes it very hot.



The wire in the **filament** is wound round and round like a tiny coil. That means there is a lot of wire in a very small space, so you get more light.

Electricity goes along these wires. It flows up, through the **filament** and back down again.

Here is a diagram to show you the different parts of a light bulb.



Bulbs in torches work in the same way but they are powered by batteries not mains electricity.

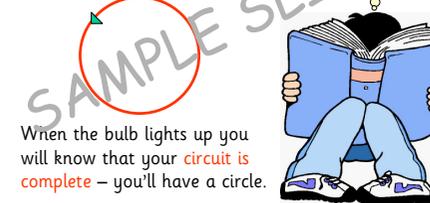
If the lights suddenly went out at night you would need a torch to see what you were doing!

Can you experiment to find out how to make a bulb light up?



If you want to make a bulb light up you will need to make an **electrical circuit**.

Here is a clue ... when you think of the word **circuit**, think of a **circle**.

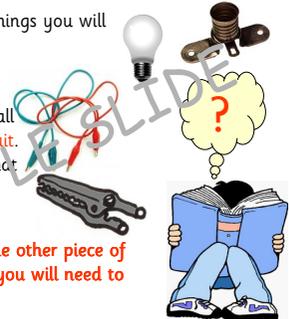


When the bulb lights up you will know that your **circuit is complete** - you'll have a circle.

Here are some things you will need.

They are used to make what we call an **electrical circuit**. Do you know what they are called?

**Do you know one other piece of equipment that you will need to make a circuit?**



Did you guess? You need a **battery**!

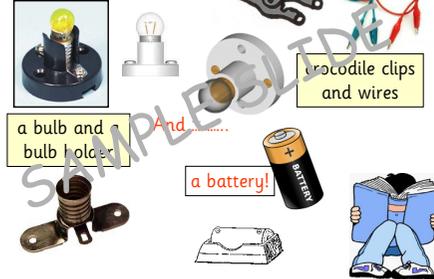
a battery

a battery in a battery holder

So what will you need? Can you remember? Go to the next slide and see if you are right.



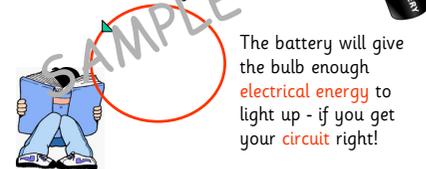
You will need .....



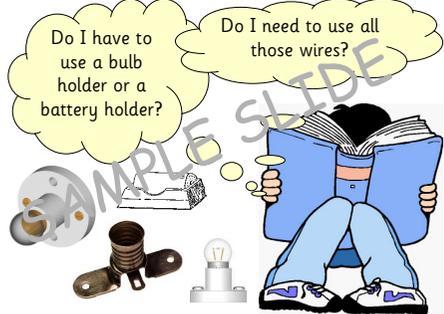
Why do you need a battery to make a circuit?

How do you make a circuit to light the bulb? Here is a clue .....

When you think of the word **circuit**, think of a **circle**.



The battery will give the bulb enough **electrical energy** to light up - if you get your **circuit** right!



Do I have to use a bulb holder or a battery holder?

Do I need to use all those wires?

How many wires do you need to make the bulb light up?

Can you explain how you made your circuit?

What are the important parts of the battery? Does it matter which part you use?

[Experiment Link](#)



Does it matter which way round the batteries go?

They have writing on them. What does it mean?



[Link \(1\)](#)

Batteries have **chemicals** inside them and they **store electricity**.

If you look carefully you will notice that both ends of the battery are **not** the same. How are they different? What else do you see?

Did you notice that the batteries have a little **+** sign on one end?

The **+** means positive and if you look carefully you will find a **-** sign which means negative.

This battery has **1.5 Volts** printed on it. The power of a battery is measured in Volts.



Do all batteries have **1.5 Volts** printed on them?



Can you see how many volts these batteries produce?  
Which one is the most powerful?

Why does it say **PowerCell** on this battery?



The proper name for a battery is a **cell** that's why it has PowerCell printed on the side!

Have fun finding out about circuits!



#### Unit 2F: Using electricity Section 4: Making a circuit

##### Objectives – Children should learn

- to make a complete circuit using a battery, wires and bulbs
- explore how to make a bulb light, explaining what happened, and using drawings to present results

##### Activities

- Present children with a collection of batteries, insulated wires and matched bulbs or buzzers. Challenge them to make the bulb light or buzzer sound. Ask children to draw pictures to show their working circuits and to explain their drawings indicating why the circuits work.

##### Outcomes – Children:

- make working circuits using bulbs and/or buzzers and make drawings of these

##### Points to note:

Children will find it easier to understand the concept of a circuit if they have many opportunities to construct circuits. On some occasions they should not use a bulb holder, because this helps them to see where the connections are. When children draw circuits at this stage they will not use standard symbols. However, they may design their own.

##### Interactive Links

The Electricity Book (Bgf) [Link](#)  
Electric circuits (Ngfl-cymru) [Link](#)  
Using Electricity (BBC) [Link](#)

Lesson Plan & Worksheets (circuits) [Link](#)  
Design & build a lighthouse [Link](#)

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