

Electrical Conductors and Insulators



LO: To recognise some common electrical conductors and insulators

I can recognise some common conductors.

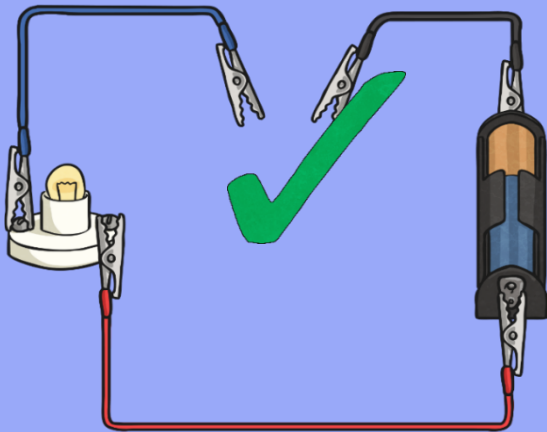
I can recognise some common insulators.

I know that metal is a good conductor

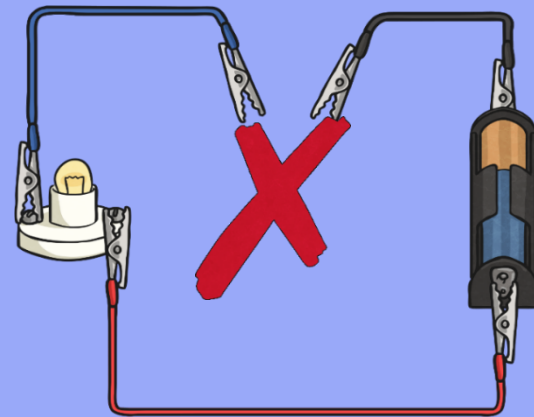
Odd one out



Electrical charge can flow through some materials, but not through others.



Materials that **do** allow electrical charge to flow freely through them are called **electrical conductors**. They conduct electricity.

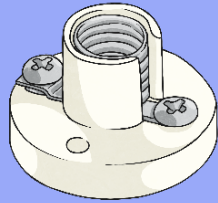


Materials that **do not** allow electrical charge to flow freely through them are called **electrical insulators**.

Before you start to test materials to identify if they are conductors or insulators, first create a complete circuit using the following parts:



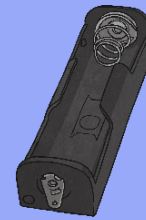
bulb



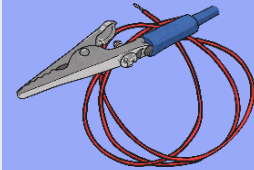
bulb holder



battery (cell)



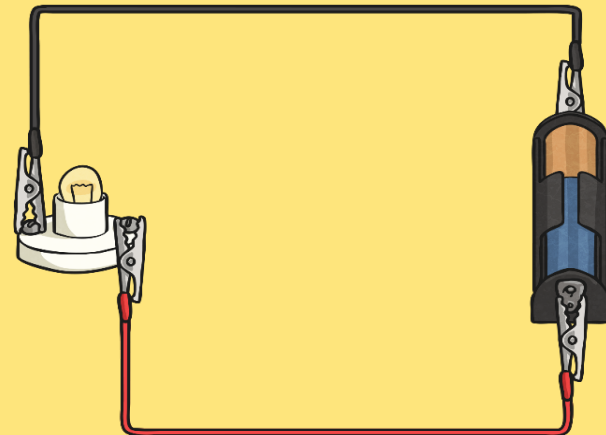
battery holder



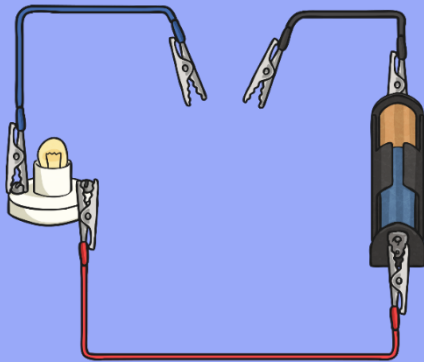
3 wires and crocodile clips

The circuit should look like the one on the right when complete.

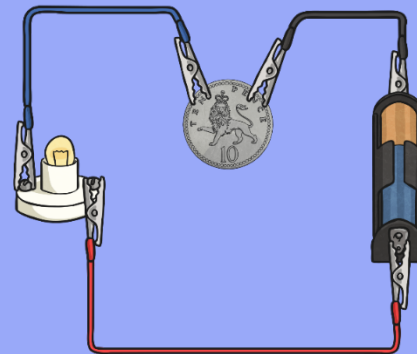
N.B. check that it works and the bulb lights. If the bulb is dim in this circuit, change either the bulb or the battery.



Connect it to your circuit so it now looks like this:



Choose a material and add it to the circuit so it looks like this:



If the **bulb lights**, then the material is an **electrical conductor**.
If the **bulb remains unlit**, the material is an **electrical insulator**.

N.B. Check that all parts of the circuit are connected properly.

L0: To recognise some common conductors and insulators



Remember to set up your circuit like this:



When you add the material to test if it is a conductor or an insulator, it should look like this:



<i>Insulators</i>	<i>Conductors</i>

Working Scientifically

recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables

Next Step: Testbase Question

Q6.

Electricity

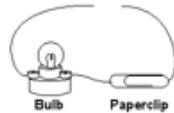
- (a) Peter is making a circuit with a bulb. He wants to use the circuit to find out if a metal paperclip allows electricity to pass through.

What name is given to the property of metals that allows electricity to pass through?

.....

1 mark

- (b) This is Peter's circuit:



Name the **ONE** piece of equipment Peter **must** add to his circuit to see if the paperclip allows electricity to pass through.

.....

1 mark

- (c) Peter can tell from his circuit that the paperclip allows electricity to pass through.

What happens in Peter's circuit to show him that the paperclip allows electricity to pass through?

.....

1 mark

- (d) Peter tests four more objects in his circuit.



Metal coin Iron nail Plastic ruler Steel spoon

Only **one** object does **not** allow electricity to pass through.

He puts his results in a table.

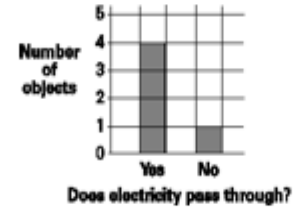
Write **yes** or **no** in each box of the table to show if electricity passes through each object.

.....

Name of object	Paper-clip	Metal coin	Iron nail	Plastic ruler	Steel spoon
Does electricity pass through?	yes				

2 marks

- (e) Peter draws a bar chart to show his results.



Peter says 'The table is better than the bar chart to show my results. It gives me extra information.'

Look carefully at the table and bar chart.

What extra information does the table give?

.....

1 mark