

Pre-Visit

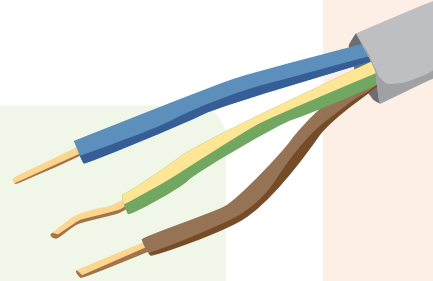
Activity 4 Resource

Electricity: Build a circuit



Electricity is an essential part of our daily lives. We need it to:

- Heat up water to use for our showers
- Keep food cold in the fridge so it doesn't go bad
- Charge our tablets and other electronic devices



Electricity in Malta is generated at the Power Station in Delimara. We also have electricity coming from an inter-connector under the sea between Baħar iċ-Ċagħaq, in Malta and Marina di Ragusa, in Sicily. Another source of electricity in our homes can come from solar panels or wind turbine.



Wires allow us to transport electricity to our households and to all our appliances. Wires are made of a material called a conductor.

A Conductor is a material that allows electricity to pass through. Copper is usually used for the wires we find in our appliances

What are wires covered in? Have you noticed that wires are always covered in another material, a type of plastic or rubber?

These materials are known as insulators. An Insulator is what we call materials that are good at stopping electricity from flowing through. This is very important as it stops us from being anywhere close to the conductor that's carrying a lot of electricity through it.

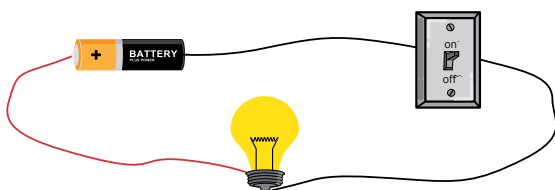
We use insulators around the conductor to make sure we are safe from an electrical shock. Remember an electrical system controls the rhythm of our heart, our heart beat.



Electricity: Build a circuit



Here is an example of a simple complete circuit. Electric current will flow from the battery to the lamp and back in the battery through the wires. This will make the lamp light up. You can use foil as your wire or you can get hold of some wire.

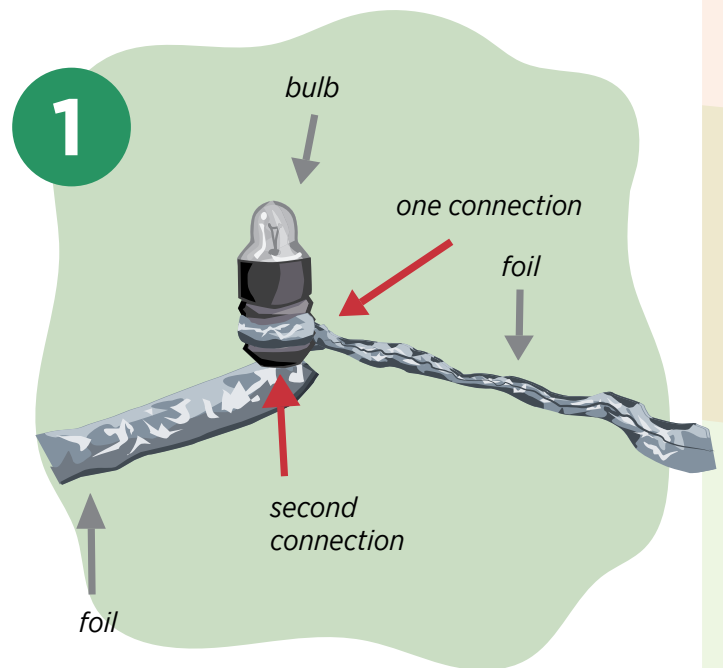


To complete the circuit, one piece of foil needs to be wrapped around the thread and the other piece of foil needs to be touching the bottom of the bulb.

If there is a loose connection anywhere in your circuit, the light bulb is broken, or the switch is open, the current would not flow as it would be an incomplete circuit.

When you have a complete circuit the bulb will light up.

The foil in this case is acting as the wires in a circuit, it is a good conductor and will allow electricity to flow through.



Electricity: Build a circuit



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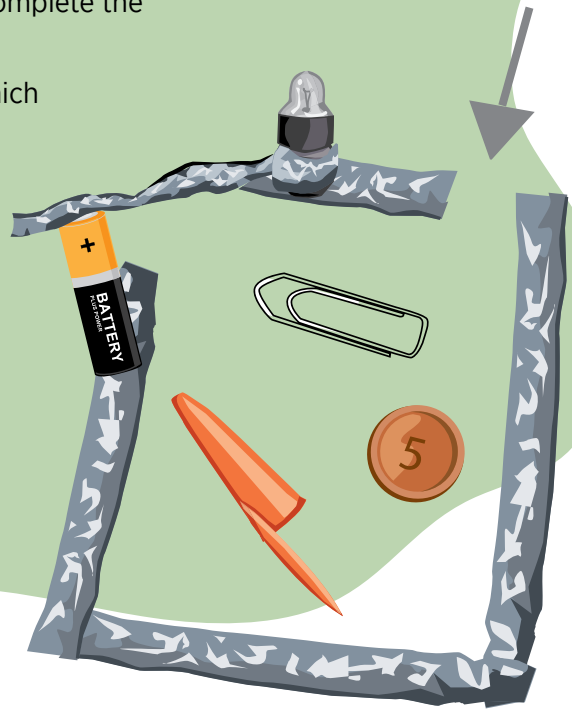
Now use the circuit you made. See how to complete the circuit using different objects/materials.

Leave a break in the circuit and try out which materials can or cannot conduct electricity.

Conductors allow electricity to flow through the circuit.
Insulators stop electricity from flowing through the circuit.

Try it out :

Which materials can be used to create a switch?

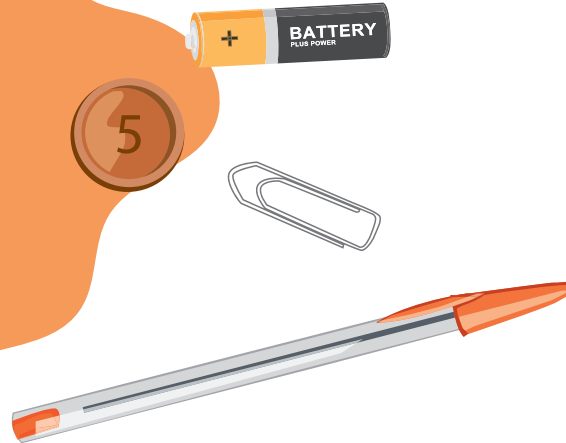


Predict and Experiment at home



You will need:

- 1x AA battery
- 1x simple lightbulb
- foil
- paper clips
- metal coin
- rubber band
- pencil
- biro



PREDICTIONS

Can you predict which items are conductors and insulators?

Conductors	Insulators

RESULTS

Following your experiment, list the conductors and insulators.

Conductors	Insulators

CONCLUSION

The items that conduct electricity are

The items that do not conduct electricity are
