Science Subject Knowledge Bank
Year 4: Electricity

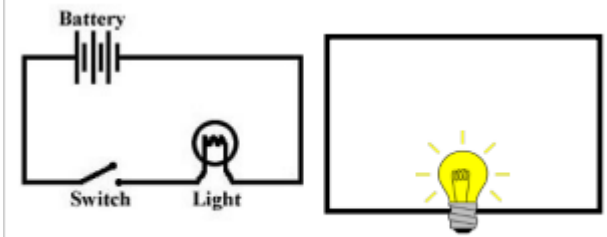
Vocabulary	Definition
Insulator	A material which does not easily allow electricity/heat through it.
Conductor	A material which does easily allow electricity/heat through it.

What are insulators and conductors?

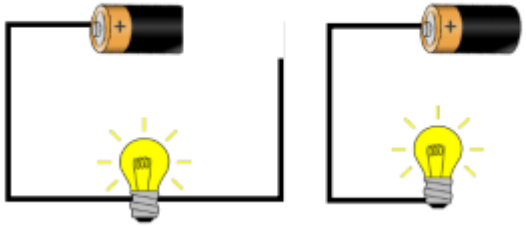
- When objects are placed in the circuits, they may or may not allow electricity to pass through.
- Objects that are made from materials that allow electricity to pass through create a complete circuit are called electrical conductors.
- Objects that are made from materials that do not allow electricity to pass through and do not complete a circuit are called electrical insulators.

How are appliances powered?

- Some appliances use batteries and some use mains electricity.
- The type of appliance being used affects the type of battery it needs to work. E.g. a car battery provides a big source of electricity and an AA battery in a remote control provides a smaller source of electricity.
- To use electrical devices, we need to follow rules to stay safe.



These are complete **circuits** - they have a **battery (cell)** and a **component (bulb).**
The **wires** are placed in the right places of the **battery** for the **circuit** to work.



These **circuits** will not work as they are incomplete.

What is an electrical circuit?

- A complete circuit is a loop that allows electrical current to flow through it.
- A circuit contains different electrical components: a cell or battery which push the electricity around the circuit, wires that the electricity flows through and an appliance that requires electricity to work (such as a bulb, motor or buzzer).
- The electrical current flows through the wires from the cell or battery to the bulb, motor or buzzer.

How do switches work?

- A switch can break or reconnect a circuit.
- A switch controls the flow of the electrical current around the circuit. When the switch is off, the current cannot flow. This is not the same as an incomplete circuit.