

# Science

# Electricity

Year 4



## Key Vocabulary

WORD	DEFINITION
batteries	a pathway that electricity flows around
bulb	the glass case that contains the filament of an electric lamp
circuit	a pathway that electricity flows around
conductor	electrical conductors are materials which allow electricity to flow through them easily
control	manage the amount of something
current	the flow of electricity
electricity	energy that powers electrical appliances
hydropower	a process that produces electricity using the power of water
insulator	materials that do not let electricity pass through them easily
switch	a device which builds and breaks the connection in an electric circuit
voltage	the measure of electrical power
wind turbines	a device which produces electricity using the power of the wind



## Key Knowledge

1. A circuit contains a battery (cell), wires and a component that requires electricity to work (bulb, motor or buzzer).
2. Electrical current flows through the wires from the battery (cell) to the bulb, motor or buzzer.
3. A switch can break or reconnect a circuit.
4. 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.

### Components

cell: Normally, we would call this a **battery** but scientifically, this is a cell. Two or more cells joined together form a **battery**.



bulb: Lights up in a complete **circuit**.



buzzer: Makes a noise in a complete **circuit**.



wires: Used to connect the different components in the **circuit** together.



motor: Produces movement in a complete **circuit**.



switch: Used to turn other components in the **circuit** on or off.



### Circuits

#### Series Circuit

A **circuit** where the components are connected in a loop.

**Electricity** flows through each component in a single pathway.



#### Complete Circuit



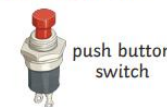
**Electricity** can flow. The components will work.

#### Incomplete Circuit

There is a break in the **circuit** that prevents the **electricity** from flowing. The components will not work.



Switches can be used to open or close a **circuit**. When off, a switch 'breaks' the **circuit** to stop the flow of **electricity**. When on, a switch 'completes' the **circuit** and allows the **electricity** to flow.



- Materials that allow electricity to pass through to create a complete circuit are called **electrical conductors**.
- Materials that do not allow electricity to pass through and do not complete a circuit are called **electrical insulators**.

#### Examples of Electrical Conductors



#### Examples of Electrical Insulators

