



### Key People/Scientists

**Nikola Tesla**  
(1856-1943)

He was an engineer and scientist known for designing the alternating-current (AC) electric system, which is the predominant electrical system used across the world today.



### Misconceptions/Key facts

**Misconception:** In an open circuit, current flows to the part where there is a gap and 'turns back' to the battery when it finds that it cannot flow through the gap.

**Fact:** In an open circuit, current does not flow at all.

**Misconception:** A change in one place of a circuit only affects the parts 'downstream' from the change (sequential model).

**Fact:** An electric circuit is a complete system and different parts of the circuit interact so that a change in one place affects the whole circuit.

### Key Questions

**What happens to a bulb when more batteries are added to a circuit?**

Increasing the voltage increases the brightness of the bulb.

**What happens to the volume of a buzzer when higher voltage batteries are used in a circuit?**

Using batteries with a higher voltage increases energy supply, thus making bulbs, buzzers or motors, brighter, louder or faster.

**What happens when you add two bulbs to a series circuit?**

If more light bulbs or other resistors are placed in a series circuit, there is more resistance in the circuit, and so the current, and the brightness of both bulbs would be reduced.

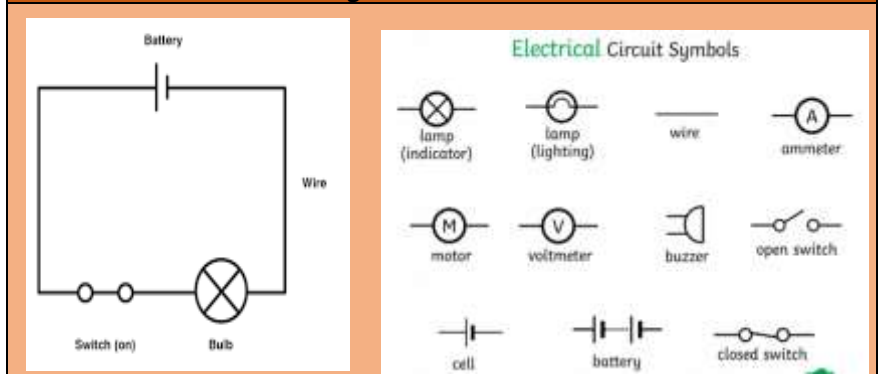
**What is the effect of having a gap in the circuit?**

If the circuit is broken at any point there won't be any current that will flow.

**What is electric current?**

Electric current is the rate of flow of electric charges.

### Diagrams/Visual Aids



### Key Vocabulary

<b>brightness</b>	The lightness or darkness of reflected light, determined in large part by the light's intensity.
<b>bulb</b>	A glass bulb which provides light by passing an electrical current through a filament.
<b>buzzer</b>	An electrical device that makes a buzzing noise and is used for signalling.
<b>diagram</b>	A simplified drawing showing the appearance, structure, or workings of something.
<b>motor</b>	A machine powered by electricity that supplies motive power for a vehicle or other moveable device.
<b>series circuit</b>	A complete and closed path around which a circulating electrical current can flow.
<b>switches</b>	A device for making and breaking the connection in an electrical circuit.
<b>symbols</b>	A drawing which represents the electrical component in the circuit.
<b>voltage</b>	An electrical force that makes electricity move through a wire, measured in volts.
<b>volume</b>	The quantity or power of sound; degree of loudness.