

Science

Electricity

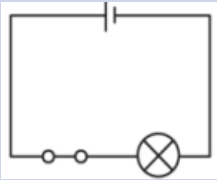
Year 6

Summer 1

Key Knowledge

Series Circuit

In order for electricity to flow, a circuit needs 3 things: a source of electricity, no gaps in the circuit and conductors. A series circuit has only one route for the current to take. If more bulbs or buzzers are added, the power has to be shared, therefore they will be dimmer or quieter. If just one part of this series circuit breaks, the circuit is broken and the flow of current stops.



Brighter Bulb and Louder Buzzer

More batteries or a higher voltage create more power to flow through the circuit, increasing the brightness of the bulb and volume of the buzzer. Shortening the wires means that electrons have less resistance to flow through.

Dimmer Bulb and Quieter Buzzer

Fewer batteries or a lower voltage give less power to the circuit. More buzzers or bulbs mean the power is shared by more components, therefore the bulb will be dimmer and the buzzer will be quieter.

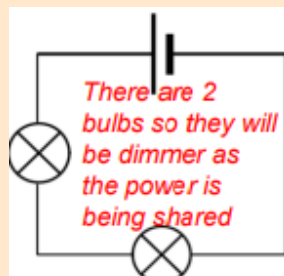
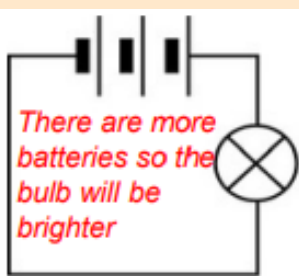
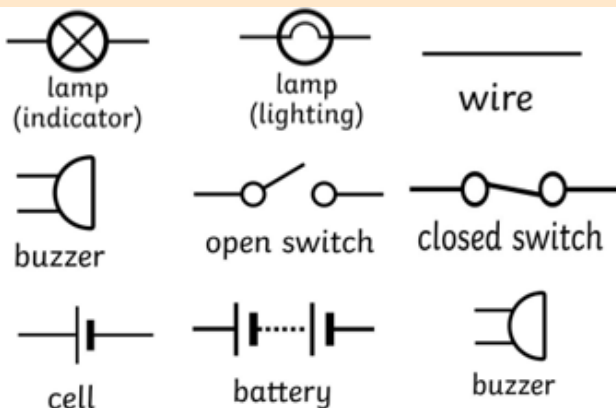
Statutory Requirements

- Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit
- Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches
- Use recognised symbols when representing a simple circuit in a diagram

Key Vocabulary

Circuit	A path that an electrical current can flow around.
Circuit diagram	A visual representation of an electrical circuit using symbols to represent the electrical components.
Cell/ Battery	A device that stores energy as a chemical unit until it is needed. A cell is a single unit and a battery is a collection of cells.
Switch	An electrical component that can make or break an electrical circuit.
Voltage	The force that makes electricity move through a wire.
Bulb	A glass bulb which provides light by passing an electrical current through a filament.
Buzzer	An electrical device that makes a buzzing sound.
Current	A flow of electricity, measure in amps
Motor	A machine that produces motion or power for doing work.

Pictures and Diagrams



Possible Experiences

- Design and make a set of traffic lights, a burglar alarm or another useful circuit.
- Investigate what happens when the voltage of the battery changes.
- Systematically, identify the effect of changing one component at a time in a circuit. Explain why this happens.
- Investigate what happens when the length of the wires changes.
- Use ammeters to measure the current in a circuit.