



Topic: Electricity

Year 6

Strand: Physics

What I should know by the end of this unit:

- The brightness of a lamp or sound of a buzzer is associated with the number and voltage of the cells used in a circuit
- There are reasons for how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches
- There are recognised symbols to use when representing a single circuit in a diagram.

Key Vocabulary

Spelling	definition
bulb	A glass bulb which provides light by passing an electrical current through a filament
buzzer	An electrical device that makes a buzzing noise and is used for signalling (e.g. in a burglar alarm)
cell / battery	A device that stores energy as a chemical until it is needed. A cell is a single unit. A battery is a collection of cells.
circuit	a complete path that an electric circuit can flow around
circuit diagram	A visual representation of an electrical circuit using symbols to represent the electrical components
current	A flow of electricity, measured in amps
motor	A machine that produces motion or power for doing work
switch	An electrical component that can make or break an electrical circuit
symbol	A visual picture that stands for something
voltage	The force that makes electricity move through a wire

Simple Series Circuit

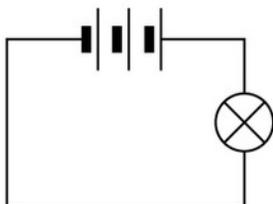
In order for electricity to flow, a circuit needs 3 things:

1. A source of electricity
2. No gaps in the circuit
3. 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 and so 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.

What will make a bulb brighter?

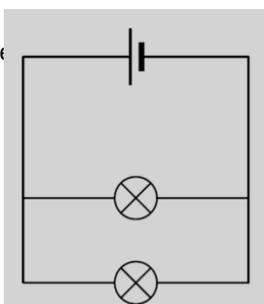
More batteries or a higher voltage create more power to flow through the circuit



What will make a bulb dimmer or a buzzer quieter?

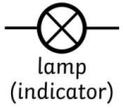
Fewer batteries or a lower voltage give less power to the circuit. More buzzers or bulbs mean the power is shared by more components.

There are 2 bulbs so they will be dimmer shared

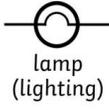




Electrical components symbols



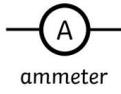
lamp
(indicator)



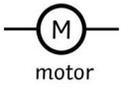
lamp
(lighting)



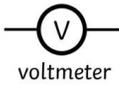
wire



ammeter



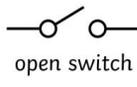
motor



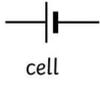
voltmeter



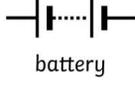
buzzer



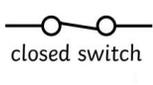
open switch



cell

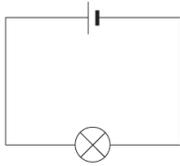


battery



closed switch

These symbols can be used to create electrical circuit diagrams





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Write the name of each component	Start of unit	End of unit

Which of these circuits will work?	Start of unit	End of unit

Explain what will happen if another cell is added to a circuit with one bulb	Start of unit	End of unit

Explain what will happen if another bulb is added to a circuit with one cell	Start of unit	End of unit



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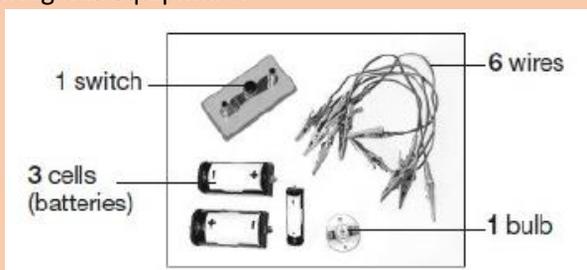
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Shorter wires will make bulbs brighter. True or false	Start of unit	End of unit
true		
false		

A circuit will not work if ... ? (Tick 3)	Start of unit	End of unit
there is no battery		
the switch is off		
there is a break in the circuit		
there is no switch		

Imagine you only have this equipment. Draw a circuit, using the correct symbols, featuring this equipment.



Start of unit

End of unit
