

Year 4 Science Knowledge Organiser Spring Term 2025



Knowledge Organiser: Year 4 - Electricity

Careers connected to electricity:
electrician, electrical engineer



Lesson Sequence



1. Understand electrical appliances and safety



2. Learn about electrical compounds in a series circuit



3. Investigate electrical circuits



4. Explore conductors and insulators



5. Learn about electrical switches



6. Investigate how electrical components can change within a circuit

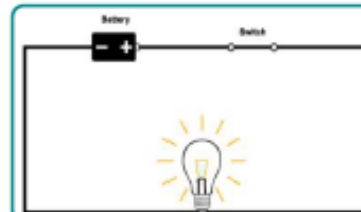
Key Facts

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.

Conductors and Insulators

- 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.

conductors	
steel	copper
insulators	
wood	plastic

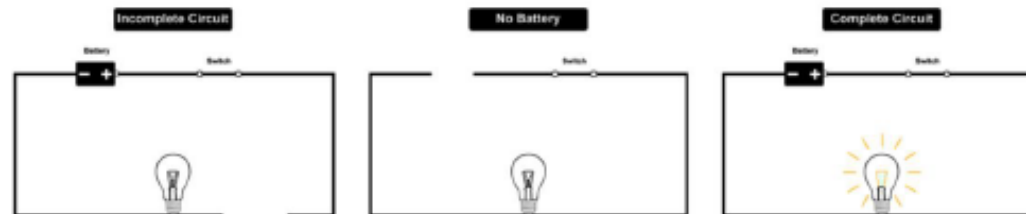


Simple Circuit

A complete circuit is a loop that allows electrical current to flow through wires.

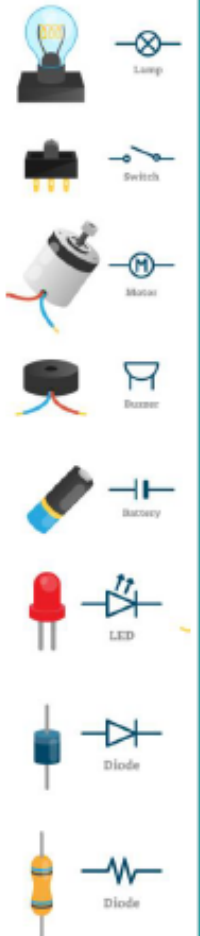
Simple Electrical Circuit

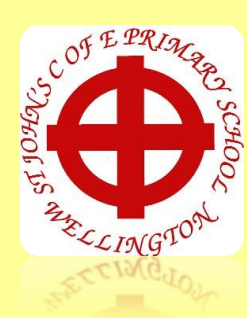
These are complete circuits - they have a battery (cell) and a component (bulb). The wires are placed in the right places of the battery for the circuit to work.



These circuits will not work as they are incomplete.




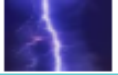








Electrical Components





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Rocket Words

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