Year 4 Autumn - Electricity

Knowledge Organiser
Year 4 – Electricity

Careers connected to this unit: electrician, electrical engineer, lighting designer

Lesson Sequence


1. Explore electrical appliances and electrical safety


2. Learn about electrical components in a series circuit


3. Investigate electrical circuits


4. Explore conductors and insulators


5. Learn about electrical switches


6. Apply knowledge of conductors and insulators

Key Facts

1. A series circuit contains a power source (cell or battery), wires and a component that requires electricity to work (bulb, bell or buzzer) in a single loop.
2. Electricity flows through the wires from the power source, around the circuit and back to the power source.
3. A switch can be added to the circuit to break or reconnect it.

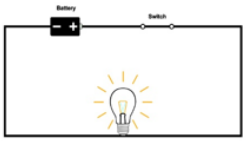
Conductors and Insulators

• 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.



Complete and Incomplete circuits

A complete circuit contains a power source, wires, and a component. They are connected in a loop with no breaks so that the electricity can flow from one end of the power source to the other.



The circuits below will not work. They are incomplete circuits.



Electrical Components


cell/battery


wire


bulb/lamp


buzzer


switch

Developing Experts Copyright 2025 All Rights Reserved

electricity	energy that powers electrical appliances and devices
series circuit	a type of electrical circuit where the components are connected in a single loop
cell	a single unit that is a source of electrical energy in a circuit
battery	a source of electrical energy made up of multiple cells
bulb	produces light in a circuit; can also be called a lamp
switch	a component within a circuit which allows the flow of electricity to be turned on and off
electrical conductor	a material which allows electricity to flow through it easily
electrical insulator	a material that doesn't let electricity pass through it easily