

Ambergate Primary School



Topic: Inventions (Autumn Cycle B)

Focus subject: History

Class: 3

What Should I already know?

- **Electricity** is a form of **energy** that can be carried by wires and is used for heating and lighting, and to provide **power** for **devices**.
 - **Sources** of light and sound may need **electricity** to work.
- Y4 -> Y6 -----
- **Electricity** is a form of **energy** that can be carried by wires and is used for heating and lighting, and to provide **power** for **devices**.
 - **Sources** of light and sound may need **electricity** to work.
 - Where **electricity** comes from
 - Which **appliances** need **electricity**
 - What a **circuit** is, the **components** of a circuit and how it works.
 - What **electrical conductors** and **insulators** are.
 - What happens when a **switch** is added to a circuit.
 - What **forces** and **resistance** are

YEAR 4 — What will I find out by the end of the unit?

- **Electricity** is a form of **energy** that can be carried by wires and is used for heating and lighting, and to provide **power** for **devices**.
- **Sources** of light and sound may need **electricity** to work.
- Where **electricity** comes from
- Which **appliances** need **electricity**
- What a **circuit** is, the **components** of a circuit and how it works.
- What **electrical conductors** and **insulators** are.
- What happens when a **switch** is added to a circuit.
- What **forces** and **resistance** are



Scientific Skills and Enquiry

- Research how to work safely with electricity.
 - Make a variety of circuits, investigating which circuits work and why.
 - Name the basic parts including cells, batteries, wires, bulbs, switches, motors and buzzers.
 - Draw circuits using pictorial representations (not circuit symbols).
 - Create circuits using switches.
 - Investigate which materials are electrical conductors and insulators
- Y4 -> Y6 -----
- Match circuit symbols to their meanings and their words.
 - Predict, then investigate what happens when more batteries are added to a circuit. Explain why this happens.
 - Predict, then investigate what happens when more bulbs, motors are added to a circuit. Explain why this happens.
 - Systematically identify the effect of changing one component at a time in a circuit.
 - Use circuit symbols when representing a simple circuit in a diagram.
 - Design and make a set of traffic lights, a burglar alarm or some other useful circuit.
 - Investigate what happens when the voltage of the battery changes.
 - Investigate what happens when the length of the wires changes.
 - Investigate what happens when you add a resistor to a circuit.
 - Use ammeters to measure the current in a circuit.

Vocabulary

ammeter	measures the current in a circuit
appliances	a device or machine in your home that you use to do a job such as cleaning or cooking. Appliances are often electrical .
battery	small devices that provide the power for
bulb	the glass part of an electric lamp, which gives out light when electricity passes through it.
buzzer	an electrical device that is used to make a
cell	a synonym for battery
circuit	a complete route which an electric current
component	the parts that something is made of
conductor	a substance that heat or electricity can pass
current	a flow of electricity through a wire or circuit
device	an object that has been invented for a
electricity	a form of energy that can be carried by wires and in used for heating and lighting, and to provide power for devices
energy	the power from sources such as electricity
insulator	a non- conductor of electricity or heat
motor	a device that uses electricity or fuel to produce movement
resistance	a force which slows down a moving object or
resistor	a part of an electric circuit that provides resistance to some of the current
switch	a small control for an electrical device which
voltage	the force of an electric current as measured in volts
wires	a long thin piece of metal that is used to fasten things or to carry electric current

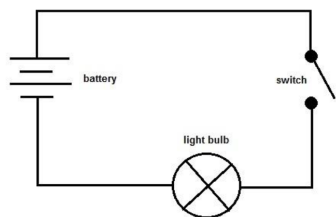


YEAR 6 — What will I find out by the end of the unit?

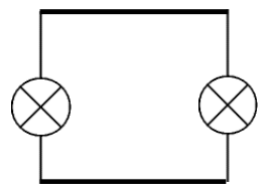
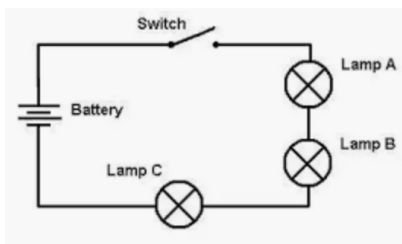
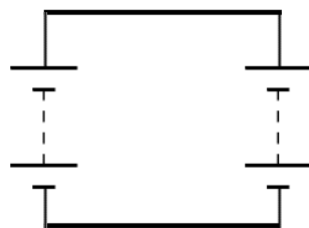
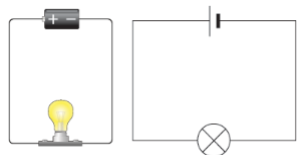
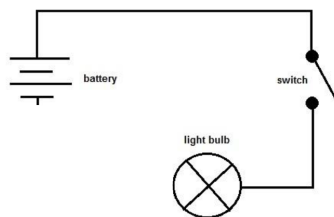
- Symbols and what they are within a circuit
- When circuits will not work and why
- The effect of shorter wires within a circuit
- The effect of additional batteries within a circuit
- The effect of additional bulbs within a circuit
- How to draw a circuit using scientific diagrams
- How to improve a circuit for a purpose

Example of Diagrams

Functioning



Non-functioning



Circuit symbols

Component	Symbol
Ammeter	
Battery	
Bulb	
Buzzer	
Cell	
Motor	
Resistor	
Switch (open)	
Switch (closed)	



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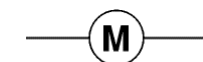
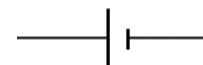
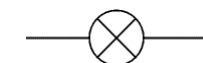
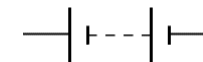
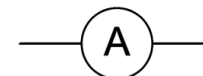
What happens to bulbs when an extra battery is added to a circuit?

What happens to bulbs in a circuit when the wires are shortened?

What happens to bulbs in a circuit when an additional bulb is added?

Draw a working circuit with two batteries, three bulbs, a closed switch and a buzzer

Name these symbols





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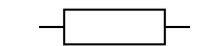
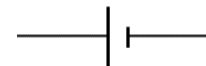
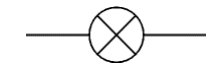
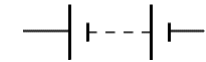
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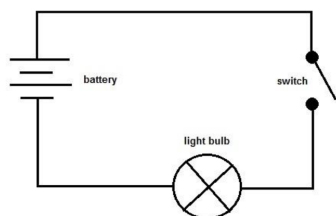
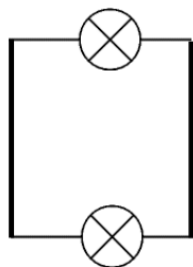
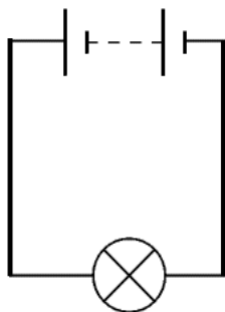
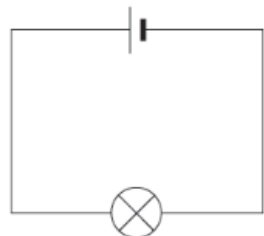
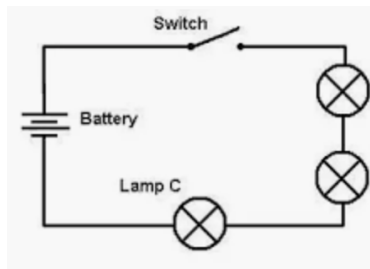
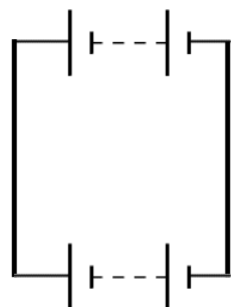
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Do these circuits work? Put a tick or cross in the boxes

Functioning

Non-functioning


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What do these words mean?

ammeter

appliances

battery

cell

circuit

conductor

current

device

electricity

energy

insulator

resistor

switch

voltage



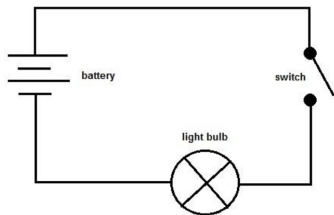
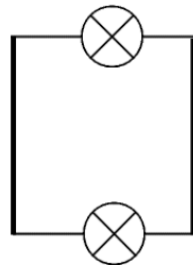
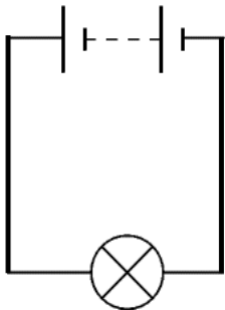
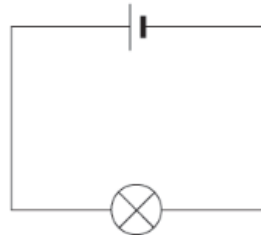
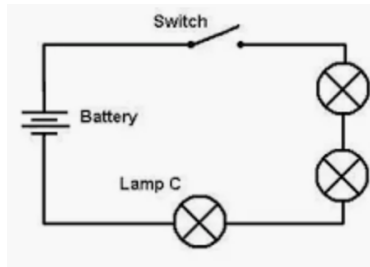
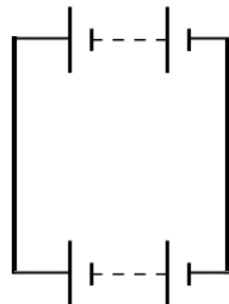
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