



Unit of work
Electricity

Year group
6

Prior learning

- **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.

National Curriculum

Pupils should be taught to:

- identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood
- recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function
- describe the ways in which nutrients and water are transported within animals, including humans.

Knowledge/ Skills

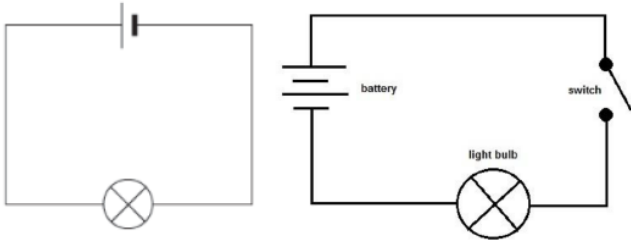
Circuit Symbols	
Symbol	Component
	ammeter
	battery
	bulb
	buzzer
	cell
	motor
	resistor
	switch (open)
	switch (closed)

- Construct simple series circuits, to help them to answer questions about what happens when they try different components, for example, switches, bulbs, buzzers and motors.
- They should learn how to represent a simple circuit in a diagram using recognised symbols. N.B. Pupils are expected to learn only about series circuits, not parallel circuits.
- Pupils should be taught to take the necessary precautions for working safely with electricity.

Vocabulary and definitions

Word	Definition
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 electrical items such as torches
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 buzzing sound
cell	a synonym for battery
circuit	a complete route which an electric current can flow around
component	the parts that something is made of
conductor	a substance that heat or electricity can pass through or along
current	a flow of electricity through a wire or circuit
device	an object that has been invented for a particular purpose
electricity	a form of energy that can be carried by wires and is used for heating and lighting, and to provide power for devices
energy	the power from sources such as electricity that makes machines work or provides heat
fuel	a substance such as coal, oil, or petrol that is burned to provide heat or power
generate	cause it to begin and develop
insulator	a non- conductor of electricity or heat
mains	where the supply of water, electricity , or gas enters a building
motor	a device that uses electricity or fuel to produce movement
power	Power is energy , especially electricity , that is obtained in large quantities from a fuel source and used to operate lights, heating, and machinery.
resistance	a force which slows down a moving object or vehicle
resistor	a part of an electric circuit that provides resistance to some of the current
source	where something comes from
switch	a small control for an electrical device which you use to turn the device on or off
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

Diagram



Investigate

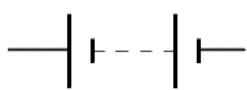
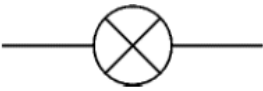
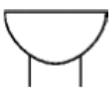
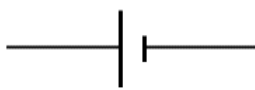


- Match circuit symbols to their meanings and their words.
- Predict, then investigate what happens when more batteries are added to a circuit. Explain why this happens.
- Predict, then investigate what happens when more bulbs, motors are added to a circuit. Explain why this happens.
- Systematically 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.

Significant people

Nicholas Tesla
(1856-1943)



Nicholas Tesla was a Serbian-American engineer and physicist. He invented the first alternating current (AC) motor and developed AC generation and transmission technology. He worked for Thomas Edison when he first moved to New York.

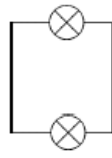
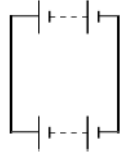
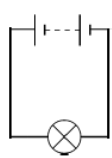
Question 1: Write the name for the component that each of these symbols represent.	Start of unit:	End of unit:
		
		
		
		
		
		

Question 3: Explain what will happen if another battery is added to a circuit with a bulb.	Start of unit:	End of unit:

Question 5: Shorter wires will make bulbs brighter. True or False?	Start of unit:	End of unit:
true		
false		

Question 7: A circuit will not work if...(tick three):	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		

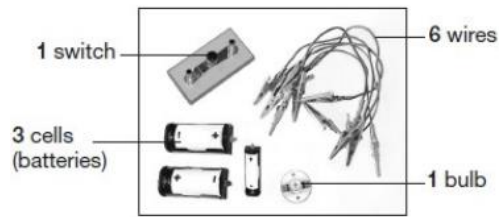
Question 8: What is the function of an ammeter in a circuit?	Start of unit:	End of unit:
measures the length of the wires in a circuit		
measures the current in a circuit		
measures how heavy the components are		

Question 2: Which of these circuits will light?	Start of unit:	End of unit:
		
		
		

Question 4: Explain what will happen if another bulb is added to a working circuit.	Start of unit:	End of unit:

Question 6: Explain what a conductor will do when added to a circuit.	Start of unit:	End of unit:

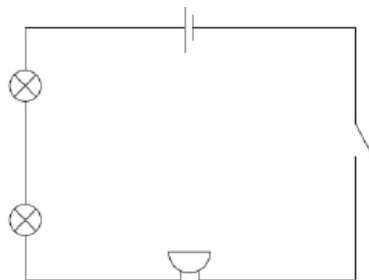
Question 9: Imagine you only have this equipment.
 Draw a circuit using circuit symbols featuring this equipment.



Start of unit:

End of unit:

Question 10: Look at this circuit. The buzzer is currently not very loud. What could you do to make it louder?



Start of unit:

End of unit: