

# Science Knowledge Organiser

**Electricity**

**Yr 6**

**Main Foci: Physics**

## 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.
- 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.

## Circuit Symbols

Symbol	Component
	<b>ammeter</b>
	<b>battery</b>
	<b>bulb</b>
	<b>buzzer</b>
	<b>cell</b>
	<b>motor</b>
	<b>resistor</b>
	<b>switch (open)</b>
	<b>switch (closed)</b>

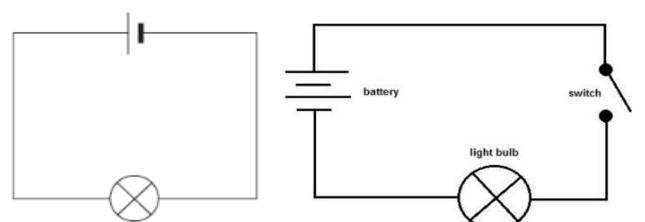
## Procedural Knowledge

- 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 <b>current</b> in a <b>circuit</b>
appliances	a <b>device</b> or machine in your home that you use to do a job such as cleaning or cooking. <b>Appliances</b> are often <b>electrical</b> .
battery	small <b>devices</b> that provide the <b>power</b> for <b>electrical</b> items such as torches
bulb	the glass part of an <b>electric lamp</b> , which gives out light when <b>electricity</b> passes through it.
buzzer	an <b>electrical device</b> that is used to make a buzzing sound
cell	a synonym for <b>battery</b>
circuit	a complete route which an <b>electric current</b> can flow around
component	the parts that something is made of
conductor	a substance that heat or <b>electricity</b> can pass through or along
current	a flow of <b>electricity</b> through a <b>wire</b> or <b>circuit</b>
device	an object that has been invented for a particular purpose
electricity	a form of <b>energy</b> that can be carried by <b>wires</b> and is used for heating and lighting, and to provide <b>power</b> for <b>devices</b>
energy	the <b>power</b> from <b>sources</b> such as <b>electricity</b> that makes machines work or provides heat
fuel	a substance such as coal, oil, or petrol that is burned to provide heat or <b>power</b>
generate	cause it to begin and develop
insulator	a non- <b>conductor</b> of <b>electricity</b> or heat
mains	where the supply of water, <b>electricity</b> , or gas enters a building
motor	a <b>device</b> that uses <b>electricity</b> or fuel to produce movement
power	<b>Power</b> is <b>energy</b> , especially <b>electricity</b> , that is obtained in large quantities from a fuel <b>source</b> 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 <b>circuit</b> that provides resistance to some of the <b>current</b>
source	where something comes from
switch	a small control for an <b>electrical device</b> which you use to turn the <b>device</b> on or off
voltage	the force of an electric current as measured in <b>volts</b>
wires	a long thin piece of metal that is used to fasten things or to carry <b>electric current</b>

## Diagrams

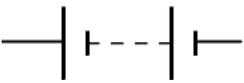
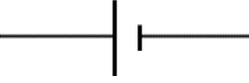


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Question 1: Write the name for the component that each of these symbols represent.	Start of unit:	End of unit:
		
		
		
		
		
		

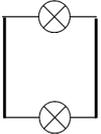
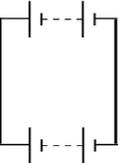
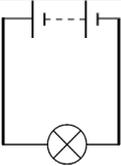
Question 4: Explain what will happen if another bulb is added to a working circuit.	Start of unit:	End of unit:

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

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

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

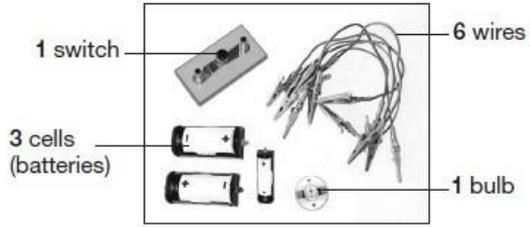
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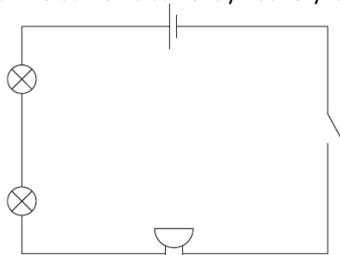
Question 8: Imagine you only have this equipment.  
Draw a circuit using circuit symbols featuring this equipment.



Start of unit:

End of unit:

Question 9: 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: