

# Year 6 Electricity

Use the keywords to fill in the gaps and complete the sentences below.

**Keywords:** wires, small, measured, force, electrical, volts, energy, flow, cell, battery, chemical.

**amp** – This is how electric current is \_\_\_\_\_.

**cell/battery** – A device that stores \_\_\_\_\_ as a \_\_\_\_\_ until it is needed. A \_\_\_\_\_ is a single unit. A \_\_\_\_\_ is a collection of cells.

**circuit** – A path that an \_\_\_\_\_ current can flow around.

**current** – The current is the \_\_\_\_\_ of electrons, measured in amps.

**electron** – Electrons are very \_\_\_\_\_ particles that travel around an electrical circuit.

**voltage** – The \_\_\_\_\_ that makes the electric current move through the \_\_\_\_\_. The greater the voltage, the more current will flow. Voltage is measured in \_\_\_\_\_.

Match the component names to their symbols.

lamp/bulb



motor



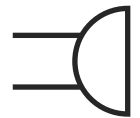
wire



buzzer



closed switch



cell



open switch



battery

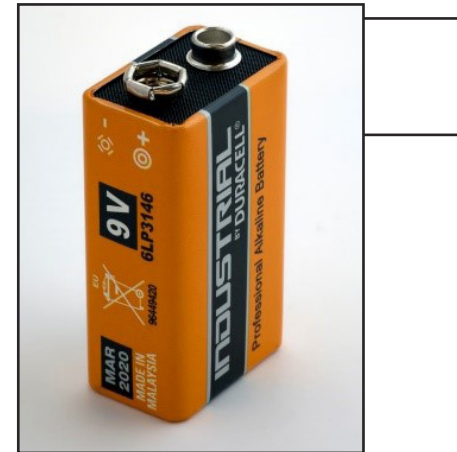
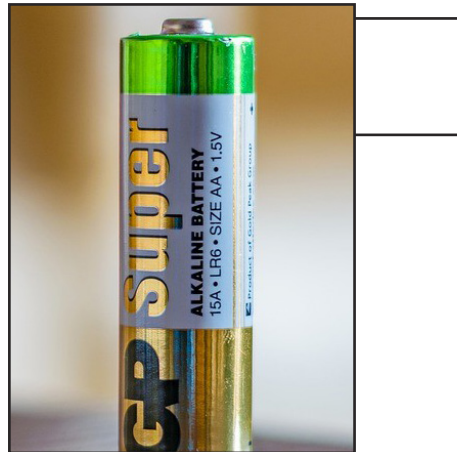
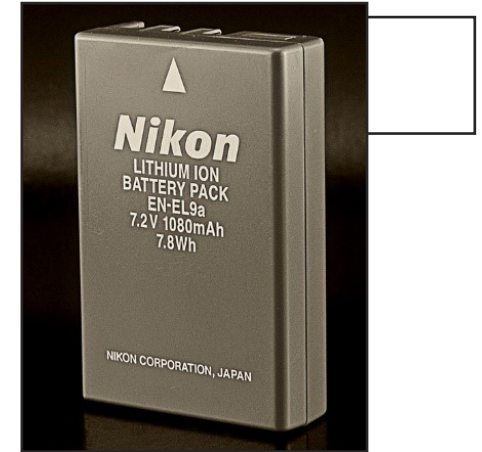
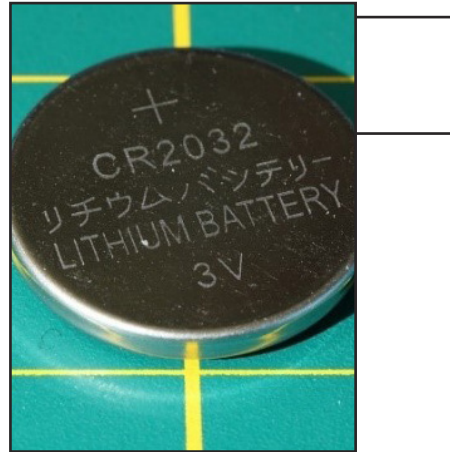


# Year 6 Electricity

Write the correct voltage next to each picture.

Circle the battery that could be used inside a remote control.

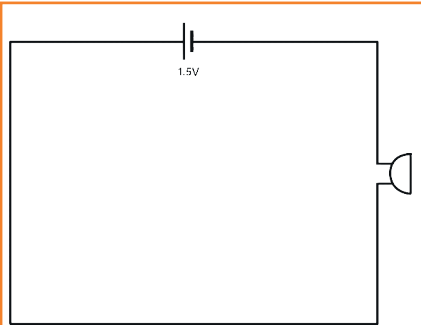
Tick the battery that could be used in a wrist watch.



# Year 6 Electricity

Explain how voltage would affect the buzzer in each circuit.

To work, the buzzer requires between 3 and 6 volts.



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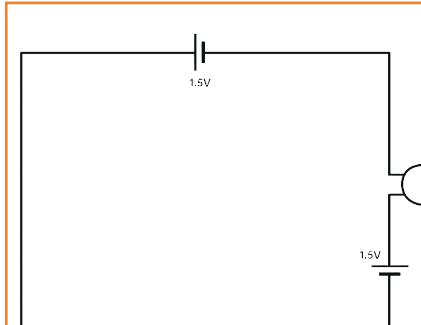
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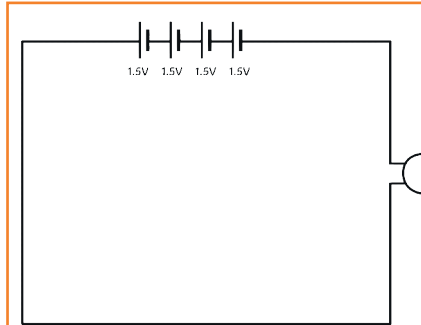
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Using symbols, draw a working circuit diagram below. The circuit must enable a motor to work.

How would using three (1.5V) cells affect the buzzer?

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What would happen to an electrical appliance that requires 3V if it was powered by 5V cell or battery?

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# Year 6 Electricity

Read the description of the circuit carefully. Place a tick in the column that describes what will happen to the bulb. Write an explanation of why you think this will happen. (You might want to sketch a diagram of the circuit to help you.)

	The bulb will not light.	The bulb will be dimmer than normal.	The bulb will be brighter than normal.	Explain why you think this will happen.
A circuit containing wires, a closed switch, a bulb, a buzzer and a motor.				
A circuit containing wires, two cells, one bulb and an open switch.				
A circuit containing wires, one cell, a closed switch, a bulb and a motor.				
A circuit containing wires, two cells, a closed switch and one bulb.				
A circuit containing shorter wires, a cell, a closed switch and one bulb.				

# Year 6 Electricity Answers

Use the keywords to fill in the gaps and complete the sentences below.

**Keywords:** wires, small, measured, force, electrical, volts, energy, flow, cell, battery, chemical.

**amp** – This is how electric current is **measured**.

**cell/battery** – A device that stores **energy** as a **chemical** until it is needed. A **cell** is a single unit. A **battery** is a collection of cells.

**circuit** – A path that an **electrical** current can flow around.

**current** – The current is the **flow** of electrons, measured in amps.

**electron** – Electrons are very **small** particles that travel around an electrical circuit.

**voltage** – The **force** that makes the electric current move through the **wires**. The greater the voltage, the more current will flow. Voltage is measured in **volts**.

Match the component names to their symbols.

lamp/bulb

motor

wire

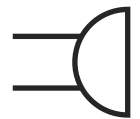
buzzer

closed switch

cell

open switch

battery



# Year 6 Electricity Answers

Write the correct voltage next to each picture.

Circle the battery that could be used inside a remote control.

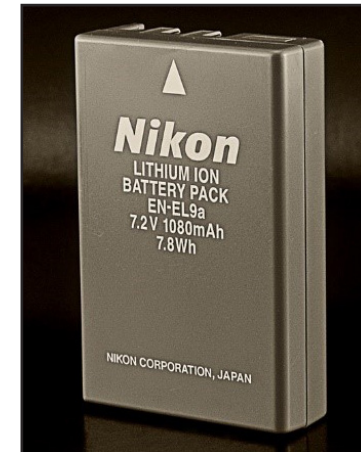
Tick the battery that could be used in a wrist watch.



3V



3V



7.2V



1.5V

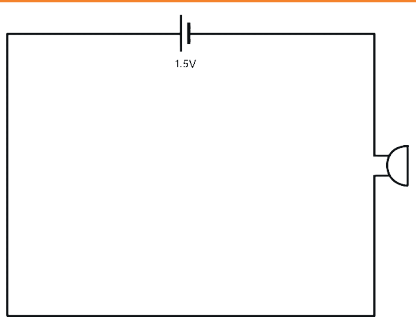


9V

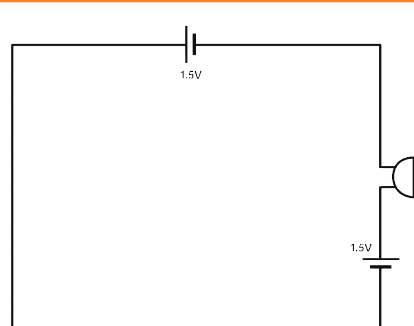
# Year 6 Electricity Answers

Explain how voltage would affect the buzzer in each circuit.

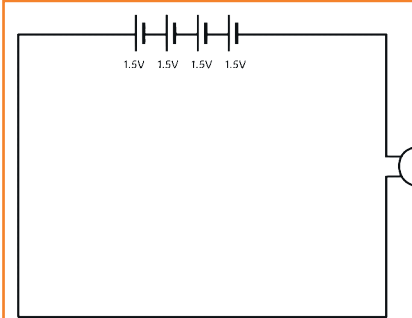
To work, the buzzer requires between 3 and 6 volts.



**The buzzer would not work as it requires at least 3 volts. The cell is only 1.5 volts.**

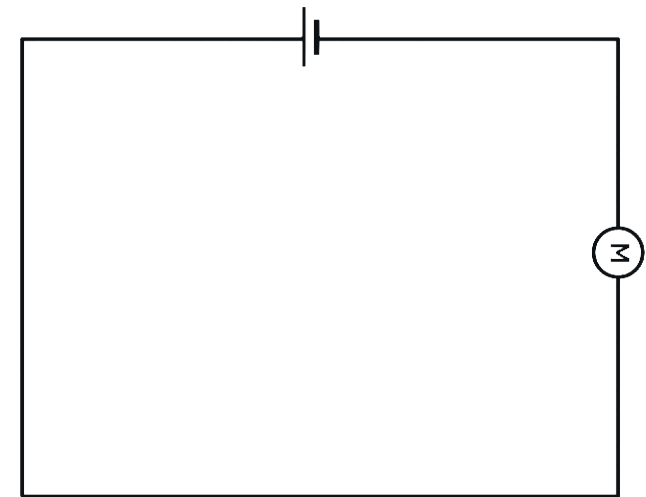


**The buzzer requires at least 3 volts to work. The cells add up to 3 volts so the buzzer would work although it may be quiet.**



**The buzzer requires between 3 and 6 volts to work. The cells add up to 6 volts meaning that the buzzer would work and be louder than in circuit two as the voltage is greater.**

Using symbols, draw a working circuit diagram below. The circuit must enable a motor to work.



How would using three (1.5V) cells affect the buzzer?

**The cells would add up to 4.5 volts. The buzzer requires between 3 and 6 volts to work and 4.5 volts is halfway between these two figures. This means that the loudness of the buzzer would be somewhere between the buzzer sound of circuits two and three.**

What would happen to an electrical appliance that requires 3V if it was powered by 5V cell or battery?

**The electrical appliance may get warm or overheat as 5V is more than required for it to work.**

# Year 6 Electricity Answers

Read the description of the circuit carefully. Place a tick in the column that describes what will happen to the bulb. Write an explanation of why you think this will happen. (You might want to sketch a diagram of the circuit to help you.)

	The bulb will not light.	The bulb will be dimmer than normal.	The bulb will be brighter than normal.	Explain why you think this will happen.
A circuit containing wires, a closed switch, a bulb, a buzzer and a motor.	✓			<b>There is no cell in the circuit so there is not a power source to light the bulb.</b>
A circuit containing wires, two cells, one bulb and an open switch.	✓			<b>The switch is open so this breaks the circuit and stops the current from flowing around the circuit.</b>
A circuit containing wires, one cell, a closed switch, a bulb and a motor.		✓		<b>The cell's power is shared between the bulb and the motor so the motor may run slower and the bulb may appear dimmer.</b>
A circuit containing wires, two cells, a closed switch and one bulb.			✓	<b>More batteries/higher voltage creates more power to flow through the circuit so this will make the bulb brighter.</b>
A circuit containing shorter wires, a cell, a closed switch and one bulb.			✓	<b>The bulb may appear brighter. If the wires are shorter, the electrons have less resistance to flow through.</b>