

# Year 4 Electricity

Tick the objects that use mains electricity.



Fill in the missing letters.

Electricity is the flow of an electric c\_\_rr\_\_ \_\_ \_\_ or charge through a material.

Many everyday appliances rely on e\_\_ctr\_\_c\_\_t\_\_ for them to work. An appliance is a piece of equipment or device designed to do a j\_\_ \_\_, e.g. a washing machine or a fridge.

Some appliances need to be plugged into a so\_\_ \_\_et (mains electricity) while others require b\_\_ \_\_ \_\_eries to make them work.

A battery is a device that st\_\_r\_\_s electrical en\_\_ \_\_gy as a chemical.

Write **true** or **false** next to each statement. Correct any false statements.

To generate means to reduce. \_\_\_\_\_

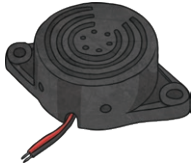
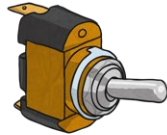
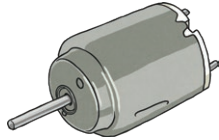
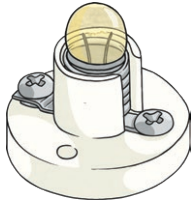
Lightening and static electricity are examples of electricity occurring naturally but for us to use electricity to power appliances, we must make it. \_\_\_\_\_

Coal, oil and natural gases are fossil fuels which can be used to generate electricity when cooled. \_\_\_\_\_

Electricity can be generated from wind power and hydroelectric power. The sun's rays can be converted into electricity by solar panels. \_\_\_\_\_

# Year 4 Electricity

Label the different parts of an electrical circuit below.



## Keywords

cell motor switch buzzer wires lamp/bulb

In detail, explain the job of a switch in a circuit?

Can you give an example of a renewable energy source?

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Can you give an example of a non-renewable energy source?

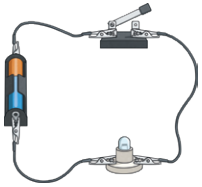
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Using a pencil and ruler, draw a simple circuit that includes a cell, wires, a bulb and a switch. Label your circuit.

# Year 4 Electricity

Look at each circuit below. Will the bulbs light? Explain your reasoning.

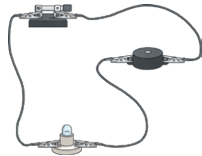


Will the bulb light? Why/why not?

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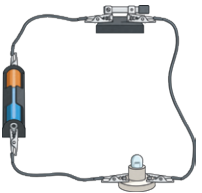


Will the bulb light? Why/why not?

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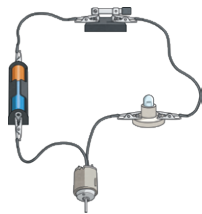


Will the bulb light? Why/why not?

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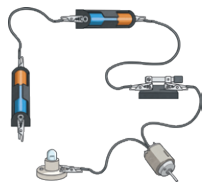


Will the bulb light? Why/why not?

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Will the bulb light? Why/why not?

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Fill in the gaps.

### Keywords

flow      energy      insulators      slow

Electrical conductors are \_\_\_\_\_ which allow \_\_\_\_\_ to pass through them.

Electrical \_\_\_\_\_ stop or \_\_\_\_\_ down energy. They do not allow electricity to \_\_\_\_\_ through.

Are these materials electrical conductors or insulators? Complete the table.

	Conductor	Insulator
wood		
brass		
plastic		
glass		
paper		
copper		
silver		
chalk		

# Year 4 Electricity Answers

Tick the objects that use mains electricity.



Fill in the missing letters.

Electricity is the flow of an electric **current** or charge through a material.

Many everyday appliances rely on **electricity** for them to work. An appliance is a piece of equipment or device designed to do a **job**, e.g. a washing machine or a fridge.

Some appliances need to be plugged into a **socket** (mains electricity) while others require **batteries** to make them work.

A battery is a device that **stores** electrical **energy** as a chemical.

Write **true** or **false** next to each statement. Correct any false statements.

To generate means to reduce. **false**

**(Generate means to make or produce.)**

Lightening and static electricity are examples of electricity occurring naturally but for us to use electricity to power appliances, we must make it. **true**

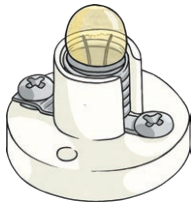
Coal, oil and natural gases are fossil fuels which can be used to generate electricity when cooled. **false**

**(When burned, they produce heat which can be used to generate electricity.)**

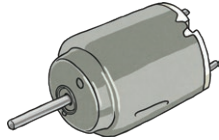
Electricity can be generated from wind power and hydroelectric power. The sun's rays can be converted into electricity by solar panels. **true**

# Year 4 Electricity Answers

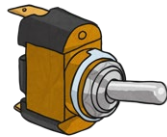
Label the different parts of an electrical circuit below.



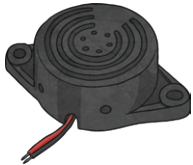
lamp/bulb



motor



switch



buzzer



wires



cell

## Keywords

cell motor switch buzzer wires lamp/bulb

In detail, explain the job of a switch in a circuit?

**Switches can be used to open or close a circuit. When off, a switch breaks the circuit to stop the flow of electrons. When the switch is on, the circuit is complete and the electrons are able to flow around the circuit.**

Can you give an example of a renewable energy source?

**Accept any of the following answers: wind power, hydro power, solar power, nuclear power, geothermal power.**

Can you give an example of a non-renewable energy source?

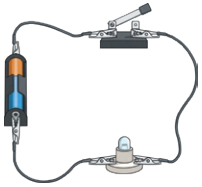
**Accept any of the following fossil fuels: coal, oil, natural gas.**

Using a pencil and ruler, draw a simple circuit that includes a cell, wires, a bulb and a switch. Label your circuit.

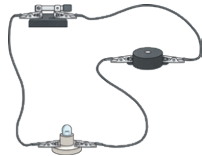
**Accept any diagram which contains a cell, wires connecting the elements, a lit bulb and a closed switch connected in a completed looped circuit, with labels.**

# Year 4 Electricity Answers

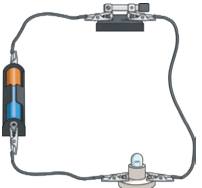
Look at each circuit below. Will the bulbs light? Explain your reasoning.



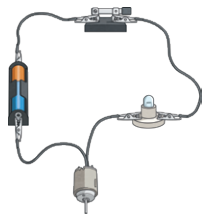
Will the bulb light? Why/why not? **no**  
**The switch is open so this breaks the circuit and stops the bulb from lighting.**



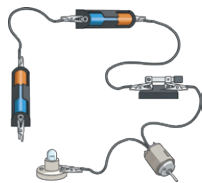
Will the bulb light? Why/why not? **no**  
**There is no cell. This is the power source.**



Will the bulb light? Why/why not? **yes**  
**There is a cell and a closed switch allowing the flow of electrons to light the bulb.**



Will the bulb light? Why/why not? **yes**  
**There is a cell and a closed switch so this allows the flow of electrons to light the bulb and power the motor. The bulb may be dimmer because one cell is powering both the motor and bulb at the same time.**



Will the bulb light? Why/why not? **no**  
**This not a complete circuit. One of the wires doesn't connect from the bulb back to the battery. This breaks the flow of electrons.**

Fill in the gaps.

## Keywords

flow      energy      insulators      slow

Electrical conductors are **materials** which allow **energy** to pass through them.

Electrical **insulators** stop or **slow** down energy. They do not allow electricity to **flow** through.

Are these materials electrical conductors or insulators? Complete the table.

	Conductor	Insulator
wood		✓
brass	✓	
plastic		✓
glass		✓
paper		✓
copper	✓	
silver	✓	
chalk		✓