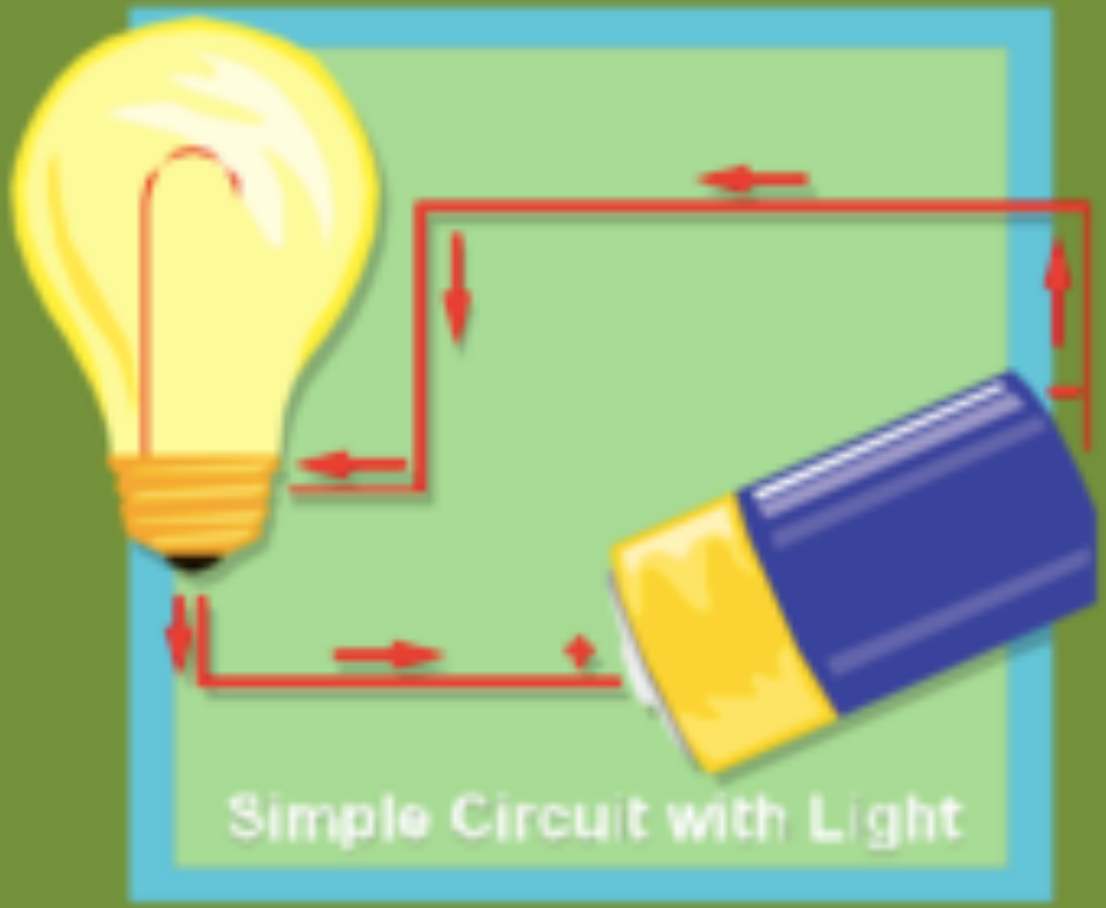
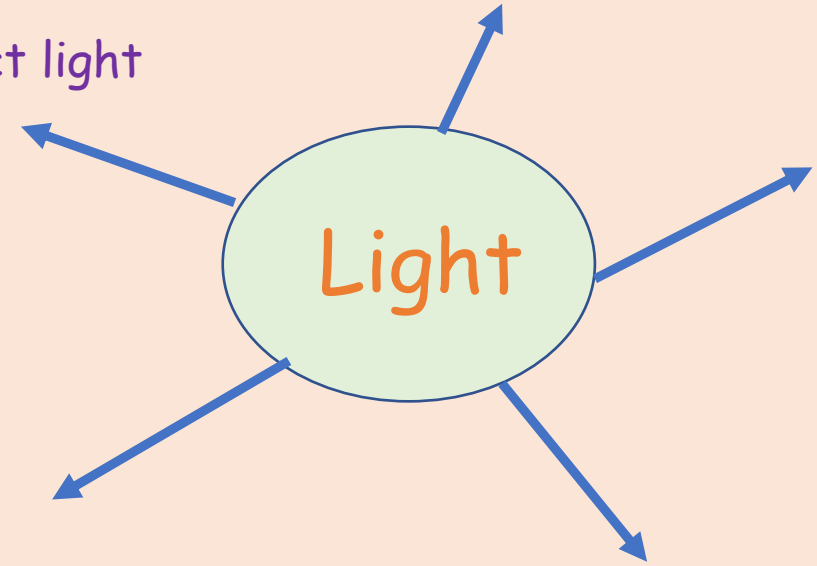
Year 6 Electricity



What can you remember about our Science topic from last half-term?



Light allows us to see different colours

Mirrors can be used to reflect light

Light travels in straight lines

When light is blocked by an object, a shadow is formed

Refraction is the bending of light as it travels between different mediums

Tuesday 23rd February 2021

S.K.L.O: To use recognised symbols when representing a simple circuit in a diagram

W.S.L.O: To record using scientific diagrams and labels

Success Criteria:

To recognise standard symbols

To explain how a circuit is formed

To select the appropriate symbol

Key Words

Vocabulary:

electricity

simple circuit

light bulb

cell

wire

buzzer

switch

motor

battery

series circuit

conductor

insulator

voltage

components

symbols

circuit diagram

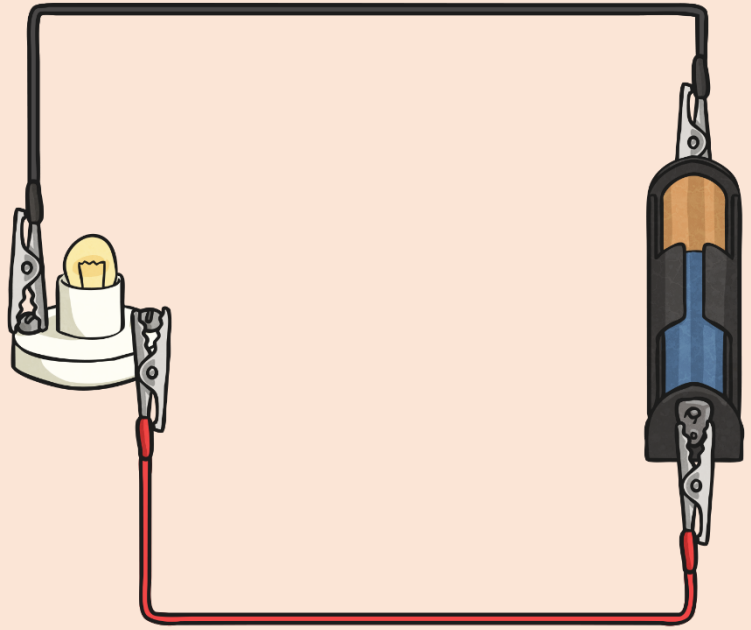
What is a circuit?

What parts do all circuits contain?

Can you draw a circuit which includes a bulb?

Recap from Year 4

Circuit Diagram



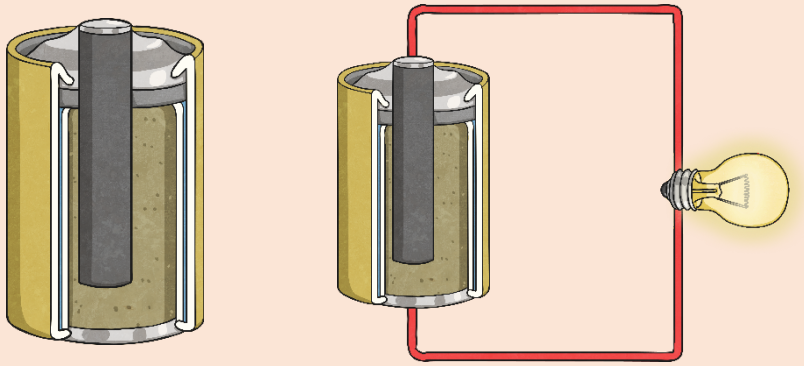
Is there anything about this circuit diagram you don't remember or understand?

Battery or Cell?

In everyday language we call a single cell a 'battery' but this is not the correct scientific usage.

Scientifically, this is a cell. It is a single unit, containing two electrodes and an electrolyte.

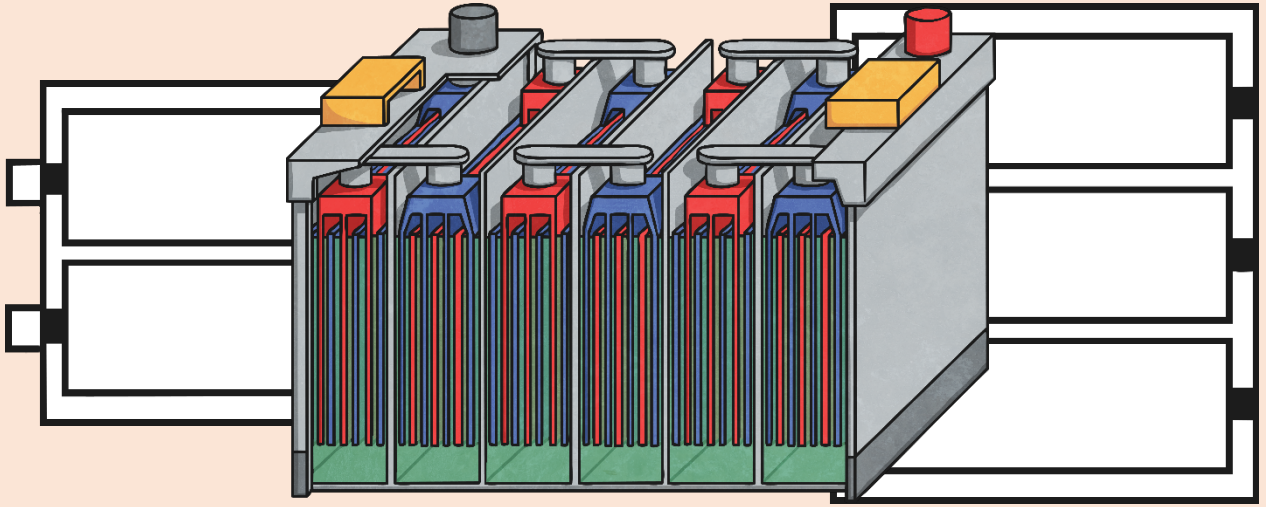
Electrodes are charged electrical conductors inside a cell. Each cell has one positive and one negative electrode.



An electrolyte is a chemical that reacts with the electrodes to produce an electrical current.

Battery or Cell?

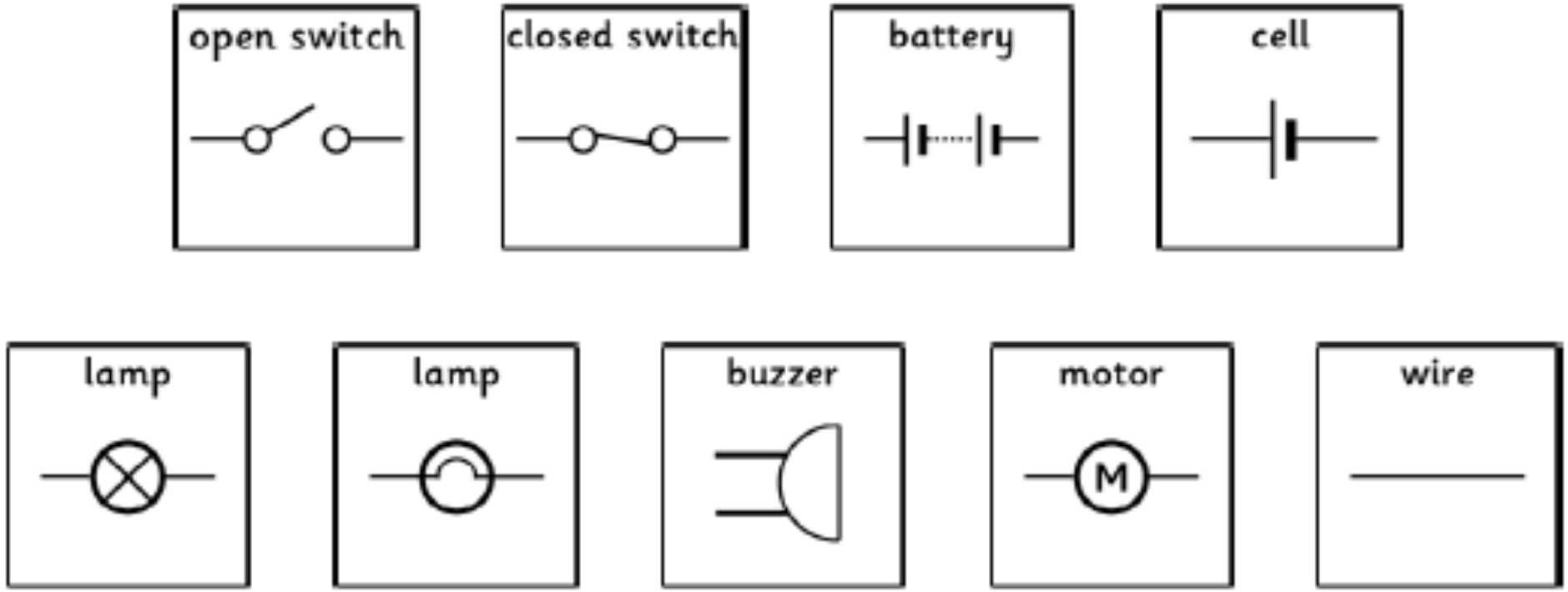
A battery is the scientific name for a collection of cells joined together.



The above diagrams show single cells in individual cases linked together.
Some larger batteries, such as car batteries, contain the multiple cells inside one case.

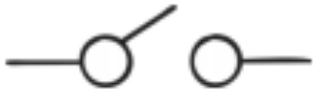
Symbols are used to make the drawing of circuits easier. Below are the most common symbols used for British electrical circuit drawings.

Electricity flows in a circuit from the negative pole of a battery to its positive pole. The flow of electricity creates an electric current. There is a symbol to represent each component in an electrical circuit.

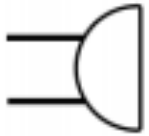


lamp/bulb

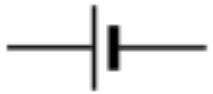
cell



open switch



closed switch



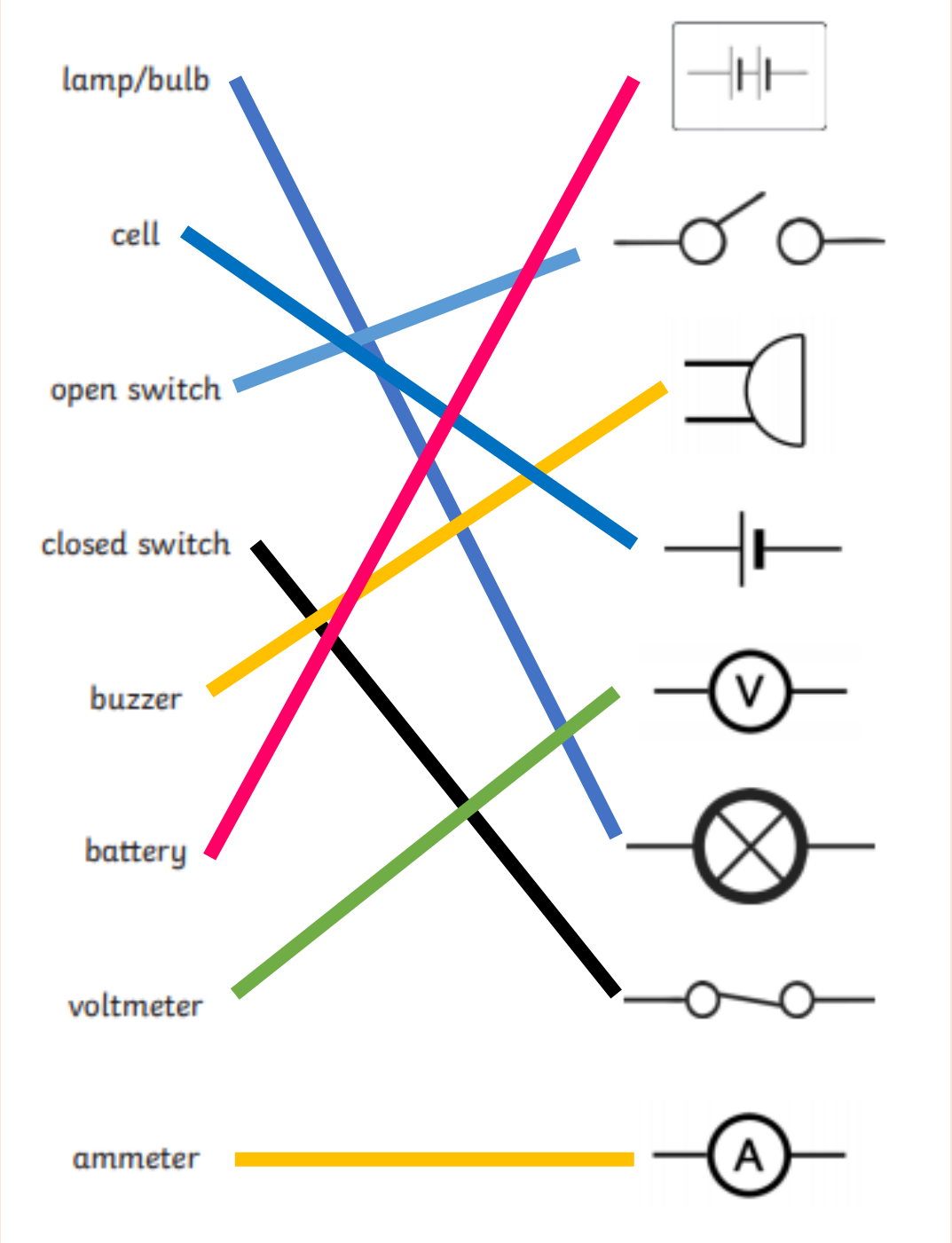
buzzer

battery

voltmeter

ammeter

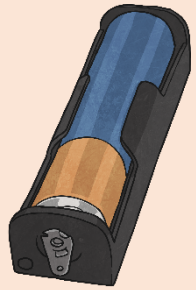
Task 1: In your head…Can you link the correct symbol to the correct component?

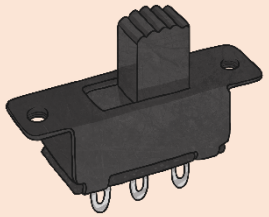


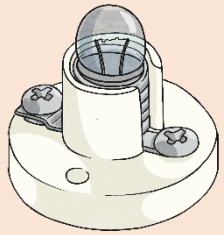
Can you link the correct symbol to the correct component?

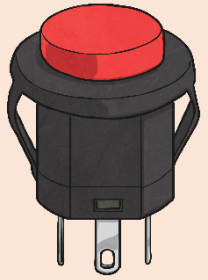
Task 2: Scientific Circuit Symbols

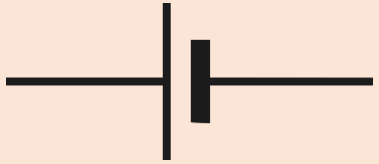
In your head:
Match the parts of a circuit with their scientific symbols.





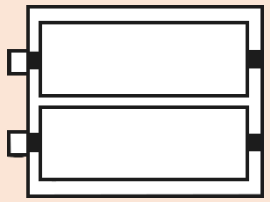


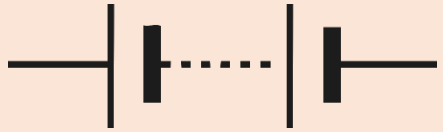


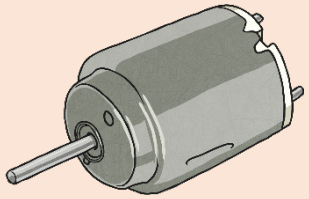


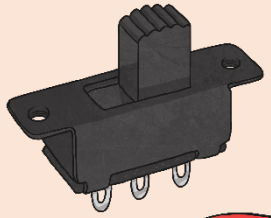
Task 2: Scientific Circuit Symbols

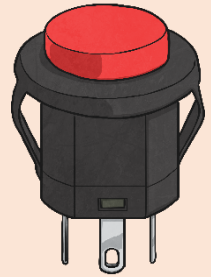
Match the parts of a circuit with their scientific symbols.
(Sometimes there will be more than one symbol for a circuit part)

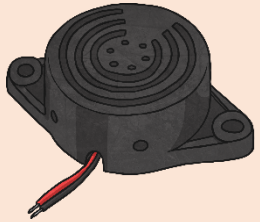


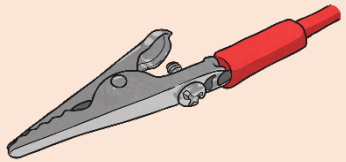




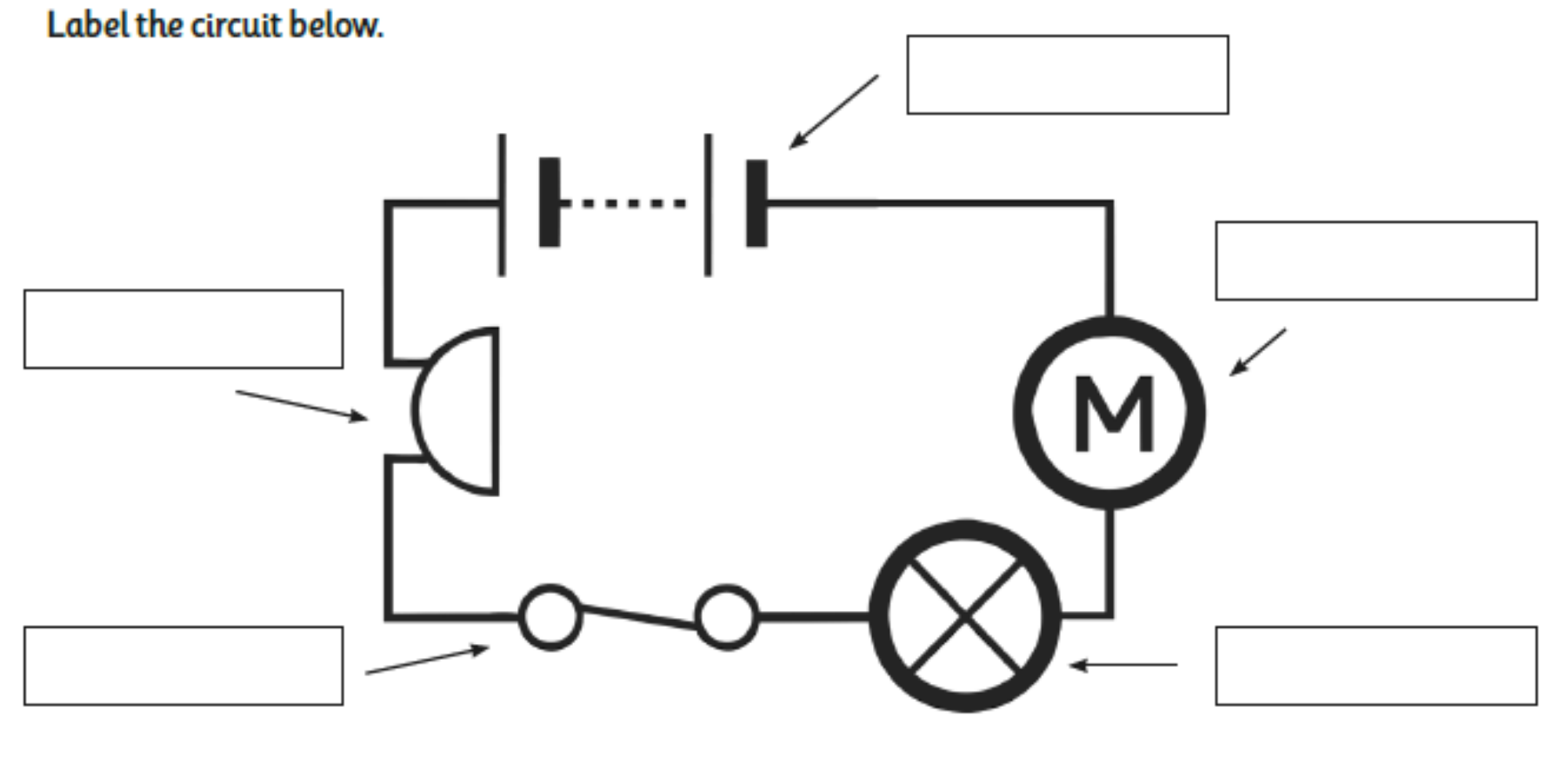






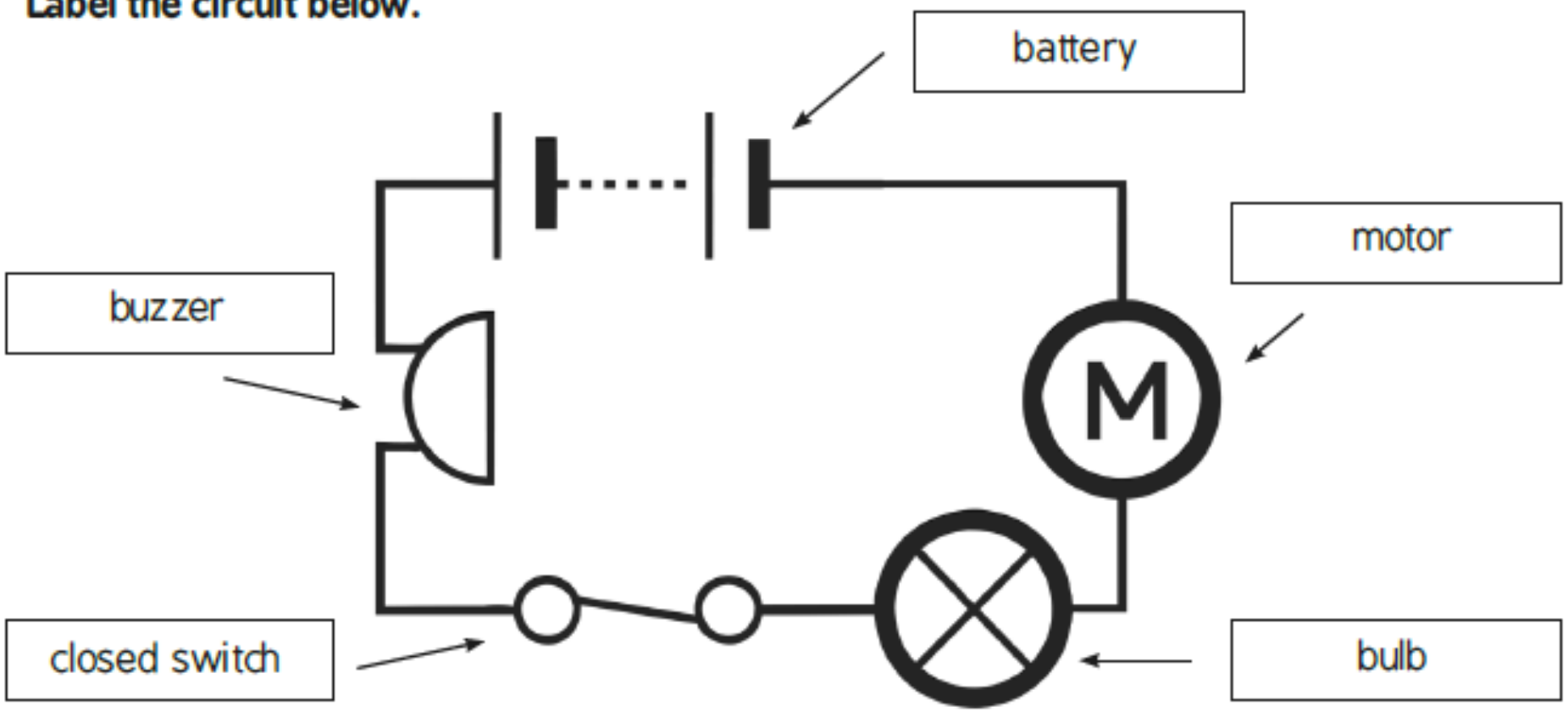


Task 3: In your head, label the symbols that are shown on the diagram below.

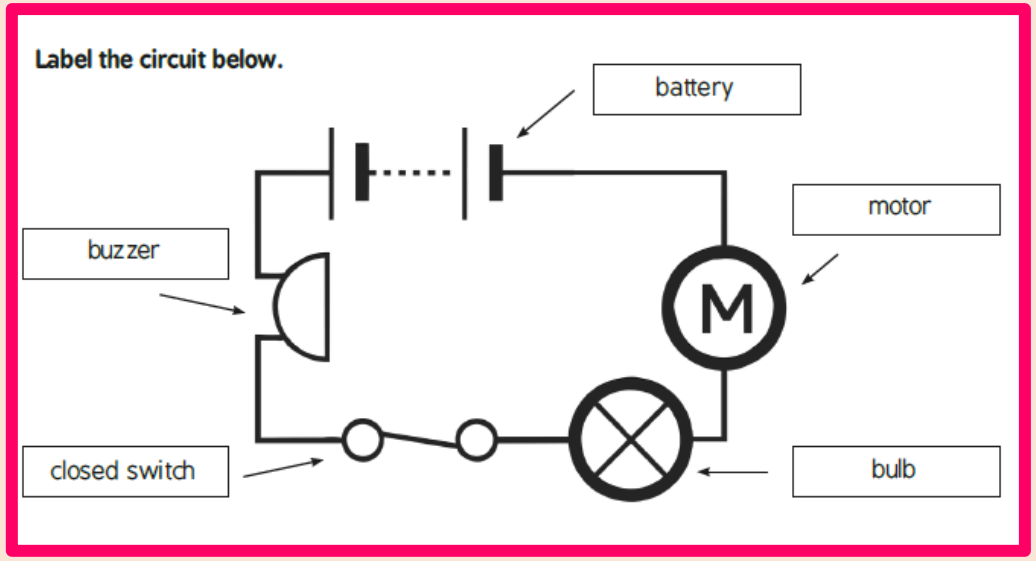


How did you do?

Label the circuit below.



Task 4: In your head, fill in the blanks in these sentences that link to the diagram.

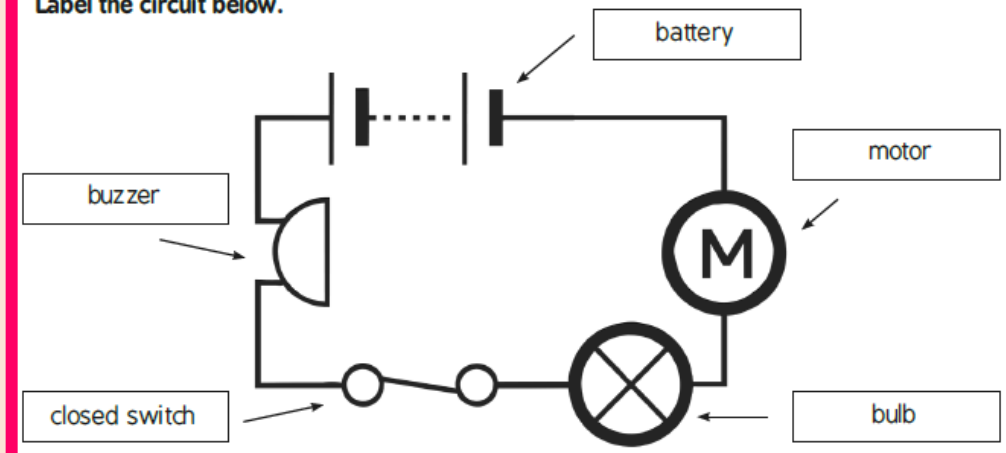


Complete the sentences.

The electric current leaves the _____ and passes through the _____. It then travels through the _____, next through the _____ and finally through the _____ before returning to the battery.

How did you do?

Label the circuit below.



Complete the sentences.

The electric current leaves the battery and passes through the buzzer. It then travels through the bulb, next through the closed switch and finally through the motor before returning to the battery.

Task 5: Written Work

Have a go at one of the worksheets on the next slides. There are different levels of difficulty – choose one to challenge yourself!

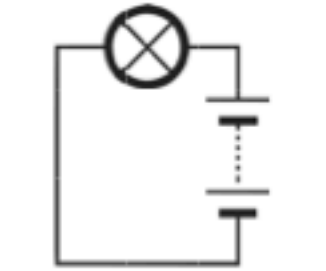
Either complete the questions on the worksheet or draw out the circuits in your books ☺

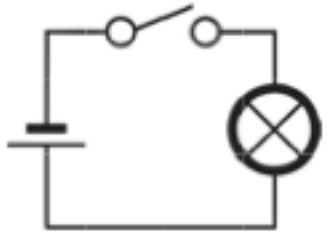
Interpreting and Drawing Circuit Diagrams

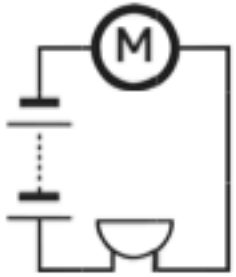
I can recognise and draw scientific circuit symbols.

Use the Scientific Circuit Symbols Mat to help.

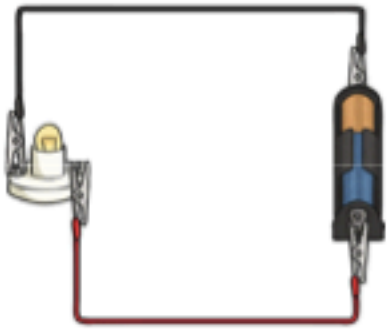
Look at the circuits below and label each part.







Draw the following circuit using the scientific circuit symbols.



Interpreting and Drawing Circuit Diagrams

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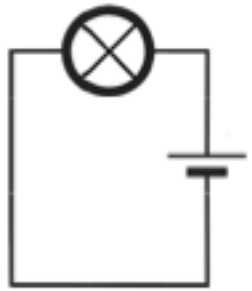
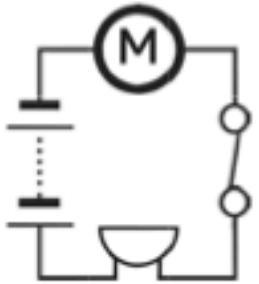
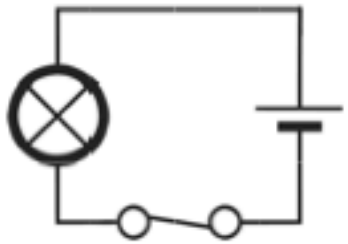
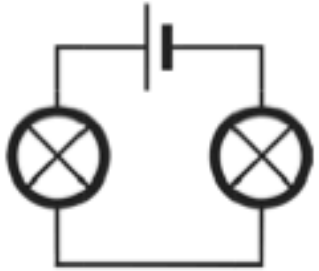
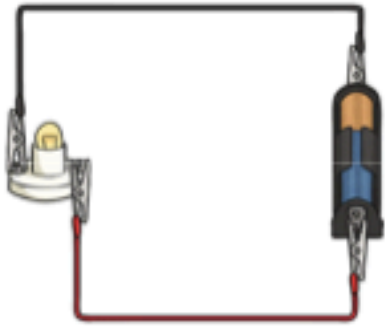


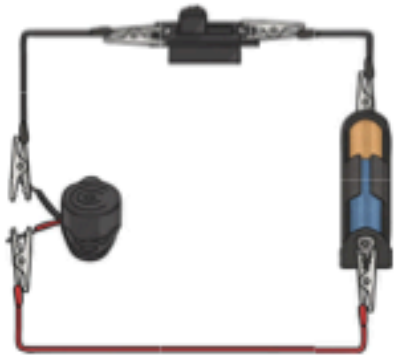






Draw the following circuit using the scientific circuit symbols.

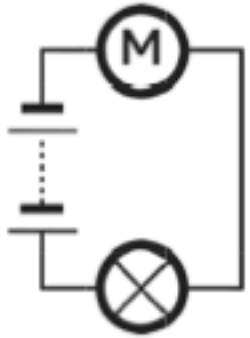


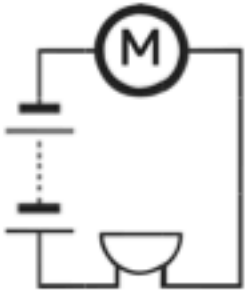


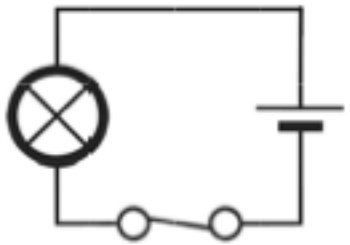
Interpreting and Drawing Circuit Diagrams

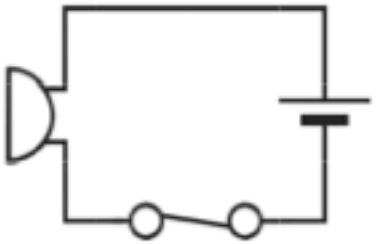
I can recognise and draw scientific circuit symbols.

Look at the circuits below and label each part.









Draw the following circuit using the scientific circuit symbols.

1. Circuit should contain: a bulb, a cell, and an open switch.

2. Circuit should contain: a battery and two motors.

3. Circuit should contain: a buzzer, two batteries, and a closed switch.

Thinking Deeper…

Is it important to have a set of symbols to represent objects?

What would happen if we all used different symbols?

Email a picture of your work to your class teacher!

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