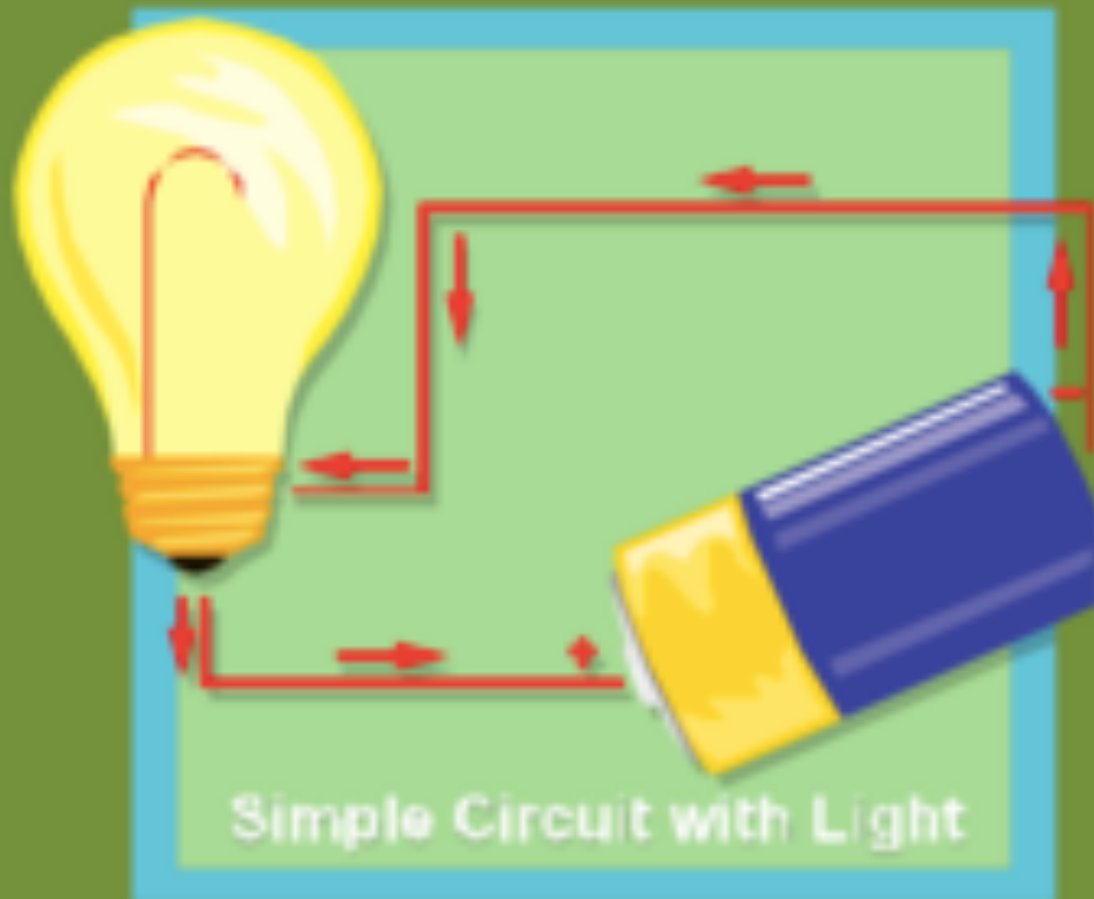
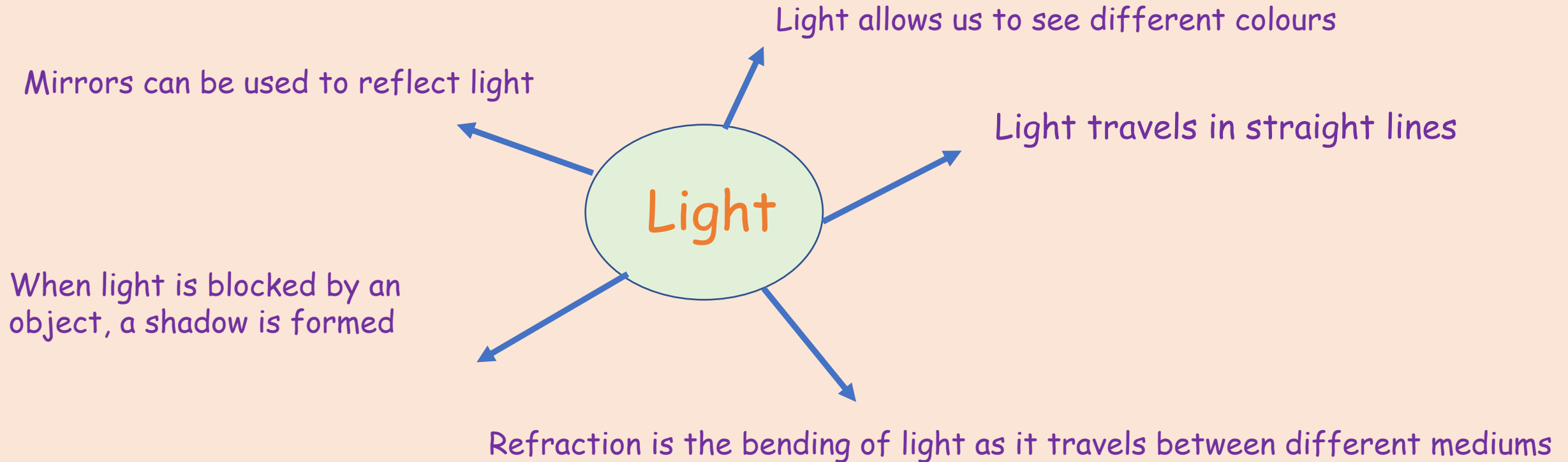


# Year 6 Electricity



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



Wednesday 24<sup>th</sup> February 2021

**S.K.L.O:** To understand how a circuit is completed and the function of a **switch**

**W.S.L.O:** To use predictions to set up comparative tests

**Success Criteria:**

To understand how electricity flows

To identify an open and closed switch

To predict if a circuit is completed



# Key Words

## **Vocabulary:**

electricity

simple circuit

light bulb

cell

wire

buzzer

switch

motor

battery

series circuit

conductor

insulator

voltage

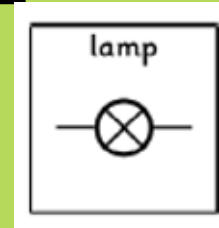
components

symbols

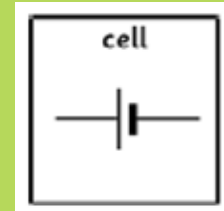
circuit diagram

RECAP: What did you learn yesterday?

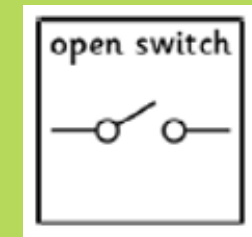
What is the symbol for a bulb/lamp?



What is the symbol for a cell?



What is the symbol for an open switch?



# The Function of a Switch

What objects do you know that have switches?

Can you find three objects in your home that have a switch?

*You might have found:*

*A light switch*

*Turning on a computer*

*A music speaker*

*On the TV remote*

*And so many more!*

# The Function of a Switch

What do these switches allow you to do? How do they effect the object?

*A switch allows you to turn an object on and off or change its function.*

# The Function of a Switch

Electricity can flow through the components in a **complete** electrical circuit.

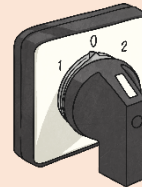
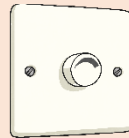
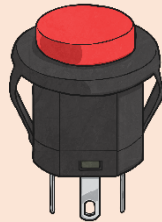
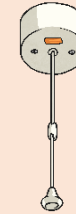
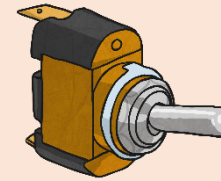
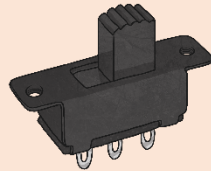
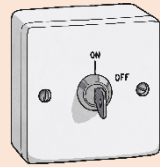
A circuit always needs a **power source**, such as a battery, with wires connected to both the positive (+) and negative (-) ends. A battery is made from a collection of cells connected together.

Electricity will only travel around a circuit that is complete. That means it has no gaps. You can use a switch in a circuit to create a gap in a circuit. This can be used to switch it on and off.

When a switch is open (off), there is a gap in the circuit. Electricity cannot travel around the circuit. When a switch is closed (on), it makes the circuit complete. Electricity can travel around the circuit.



There are a wide variety of switches that can be used.  
Match the type of switch and its name.



slide switch

push button switch

pull switch

dimmer switch

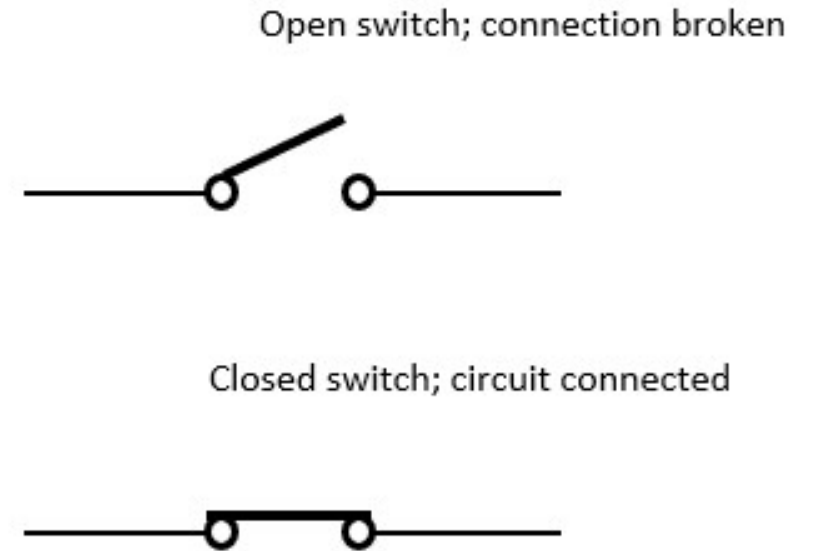
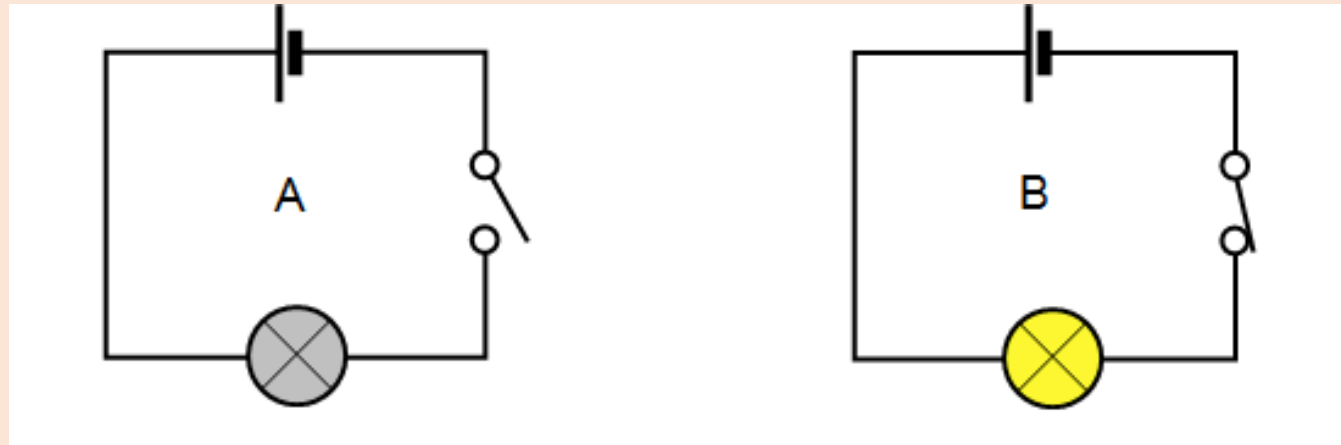
paddle switch



selector switch

key switch

toggle switch

# A Switch in a Circuit:



<b>Open Circuit</b>	An electric circuit in which the current flow is interrupted by a broken wire or an open switch.	
<b>Closed Circuit</b>	An electric circuit in which the current flows through an uninterrupted path.	

Task 1: Explore this website to build your own circuits!

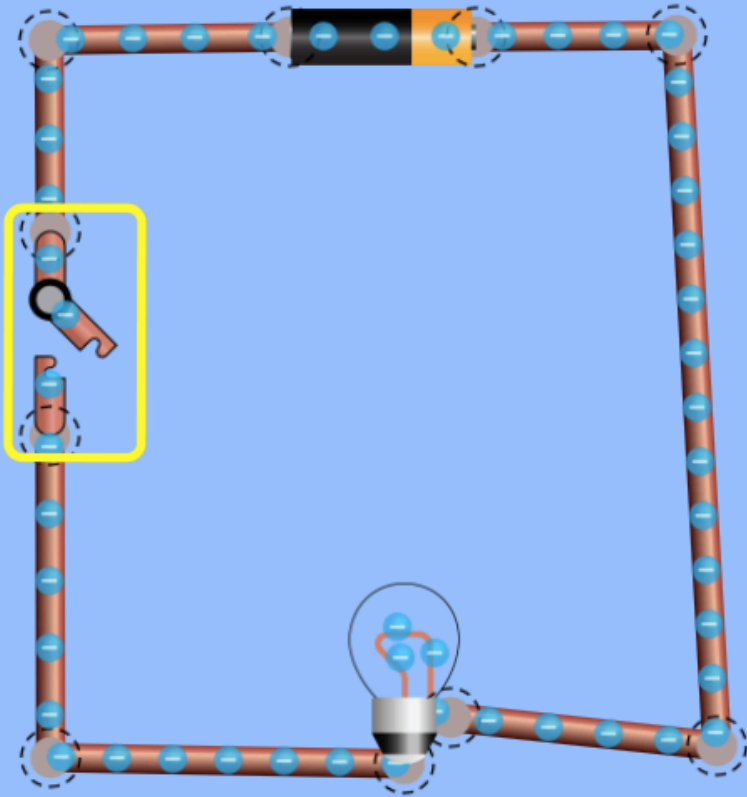
[https://phet.colorado.edu/sims/html/circuit-construction-kit-dc/latest/circuit-construction-kit-dc\\_en.html](https://phet.colorado.edu/sims/html/circuit-construction-kit-dc/latest/circuit-construction-kit-dc_en.html)

Can you build a circuit with a switch?

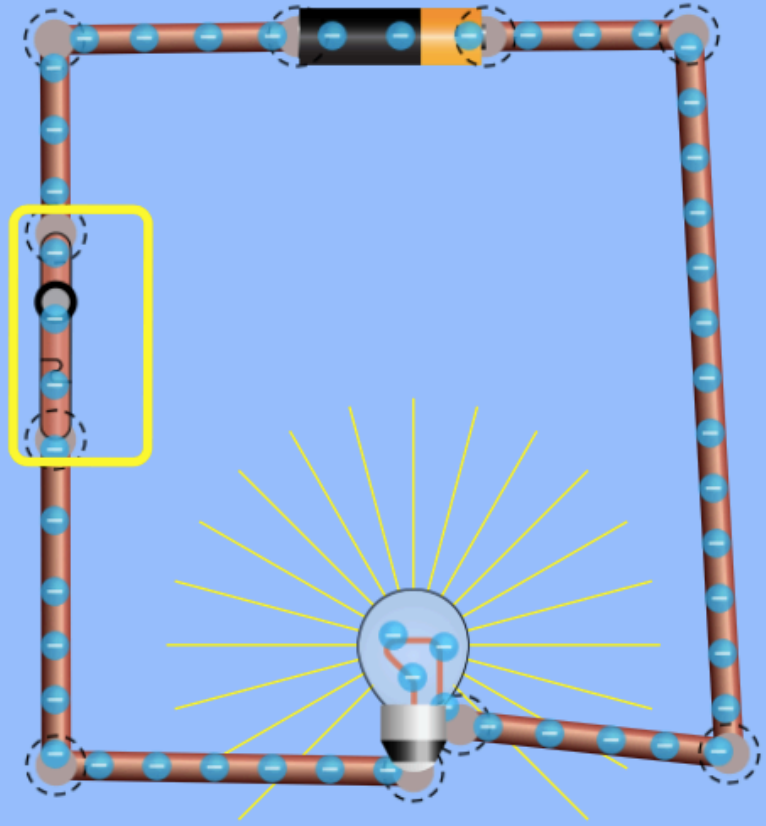
What happens when you open and close the circuit?

1. Click onto Lab.
2. Drag and drop different parts of your circuit.
3. Remember you need a battery and wires to join your circuit.
4. Try to include a bulb and switch to turn it on and off!

Can you make a circuit like this?



The switch is open.

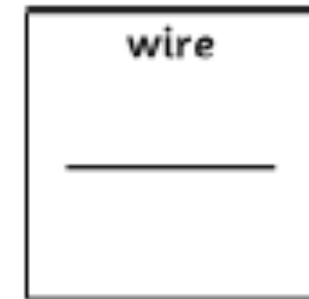
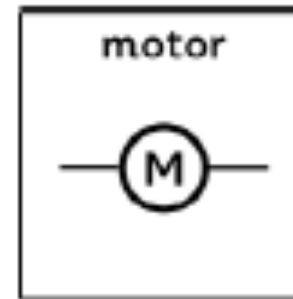
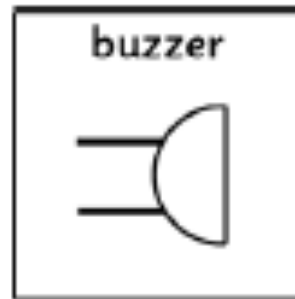
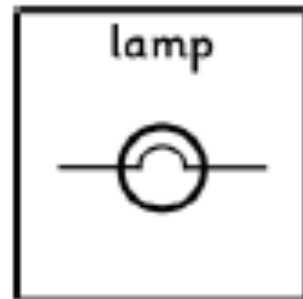
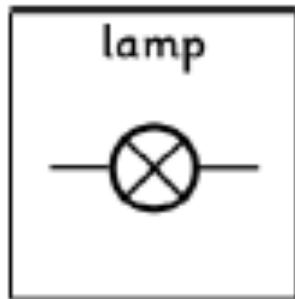
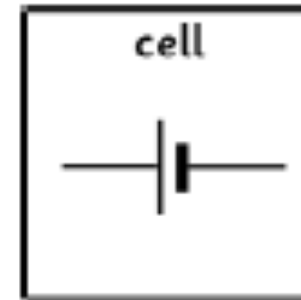
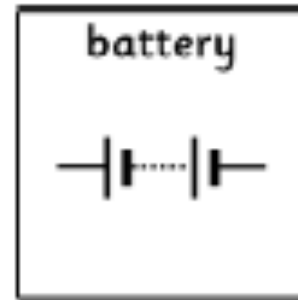
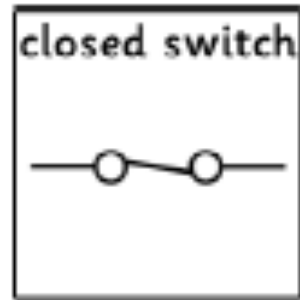
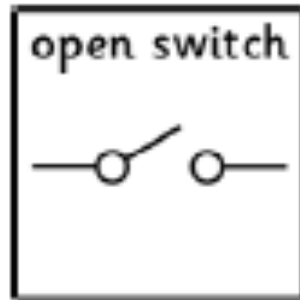


The switch is closed.



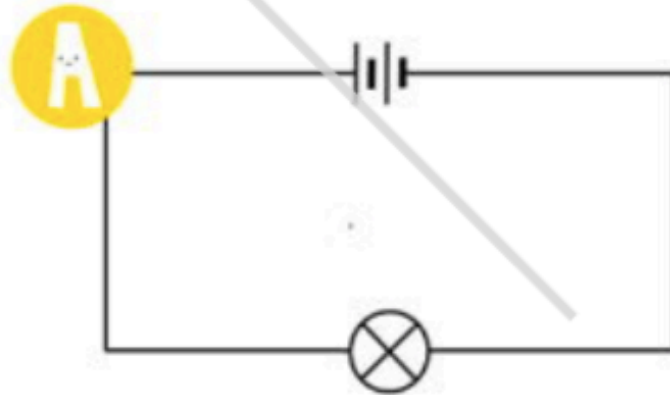
## Task 2: Draw your circuits that you created! One with an open and one with a closed switch

Use the symbols that you learnt yesterday to help you:

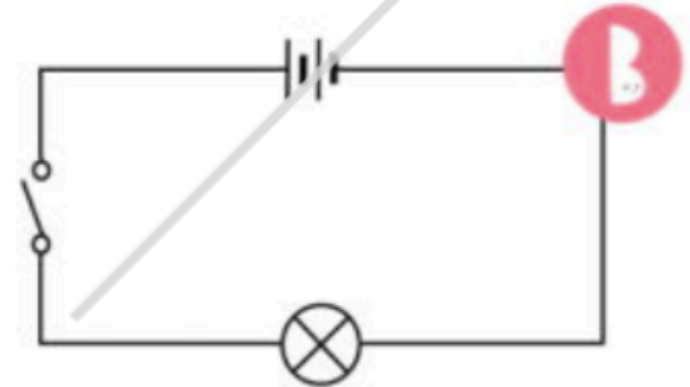


Task 3: Answer the questions using what you have learnt.

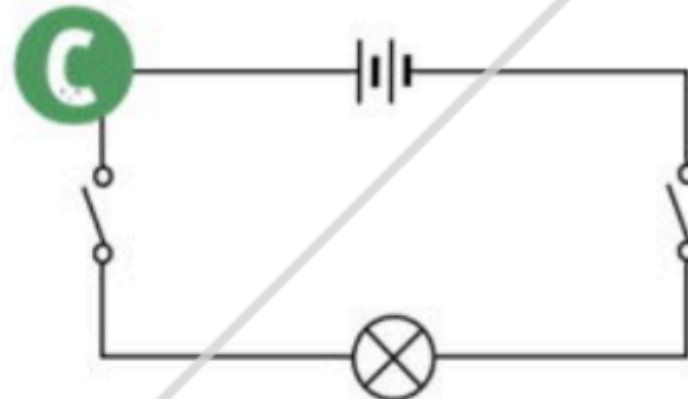
# Building Electrical Circuits



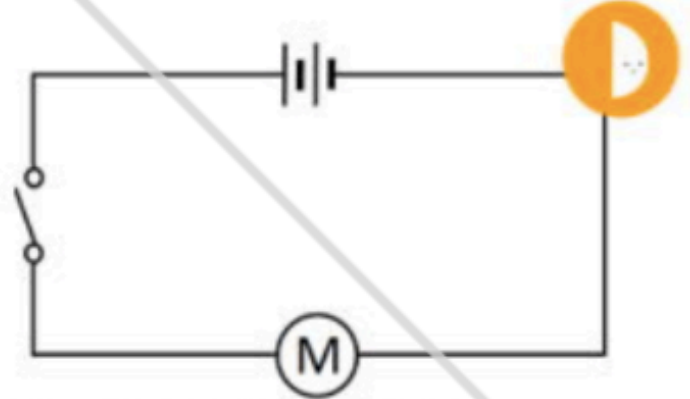
Is this circuit complete? \_\_\_\_\_  
Does the bulb work? \_\_\_\_\_  
Why is it not practical? \_\_\_\_\_  
How many cells are there in the battery? \_\_\_\_\_



How many wires did you use for this? \_\_\_\_\_  
Is the circuit complete when the switch is open? \_\_\_\_\_  
What happens to the bulb when the switch is closed? \_\_\_\_\_



What needs to happen for the bulb to work? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



Name all the parts that make up this circuit... \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Check your answers:

A

1. Yes
2. Yes
3. Only need one cell to light up one bulb
4. Two

B

1. 4 wires
2. No
3. The bulb will turn on

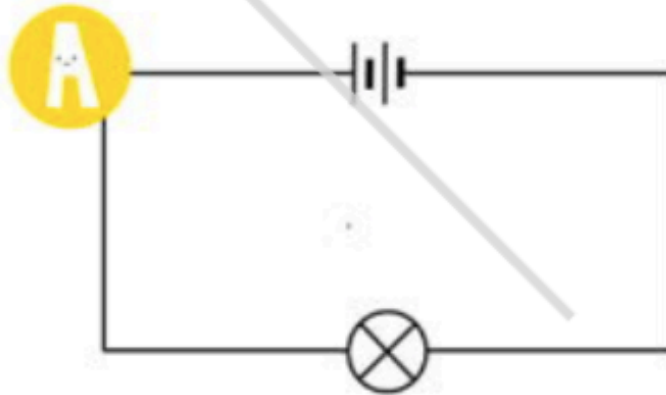
C

The switches will both need to be closed at the same time

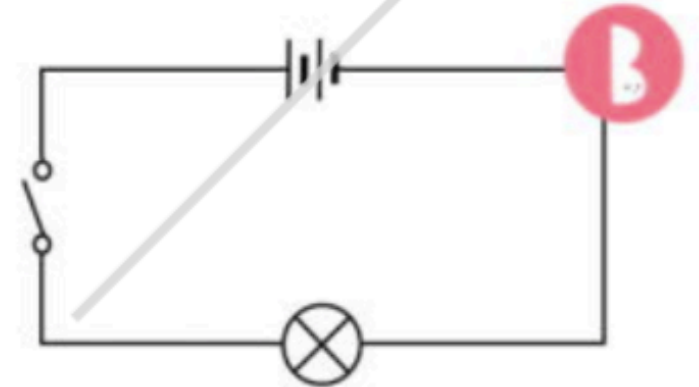
D

Two cells in a battery, switch and a motor.

## Building Electrical Circuits



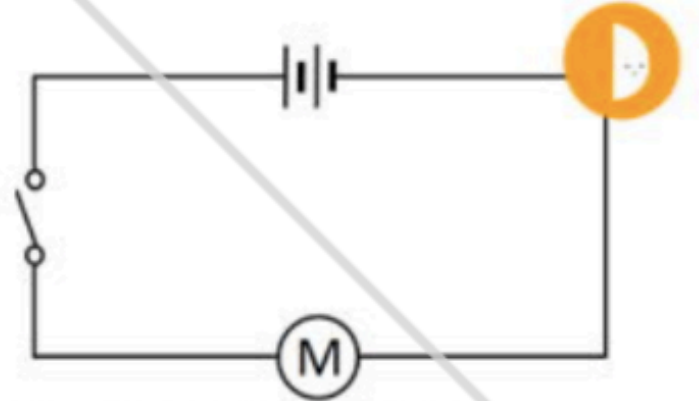
Is this circuit complete? \_\_\_\_\_  
Does the bulb work? \_\_\_\_\_  
Why is it not practical? \_\_\_\_\_  
How many cells are there in the battery? \_\_\_\_\_



How many wires did you use for this? \_\_\_\_\_  
Is the circuit complete when the switch is open? \_\_\_\_\_  
What happens to the bulb when the switch is closed? \_\_\_\_\_



What needs to happen for the bulb to work? \_\_\_\_\_  
\_\_\_\_\_



Name all the parts that make up this circuit... \_\_\_\_\_  
\_\_\_\_\_

The logo for Project 4C, featuring the letters 'P', '4', and 'C' in a stylized, rounded font. The 'P' is red, the '4' is orange, and the 'C' is blue. They are arranged in a slightly curved line.

P4C

## Thinking Deeper...

Can you imagine having a switch in other parts of your life?

Imagine if you were hungry and you could just turn the switch off?





<https://www.bbc.co.uk/bitesize/topics/zq99q6f/articles/zt8vg82>

Watch this short video to check your learning 😊

Email a picture of your work to your class teacher:

[mjames@kingsavenue.Lambeth.sch.uk](mailto:mjames@kingsavenue.Lambeth.sch.uk)

[ksutherland@kingsavenue.Lambeth.sch.uk](mailto:ksutherland@kingsavenue.Lambeth.sch.uk)