

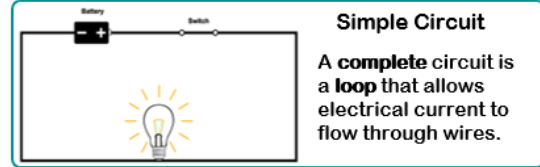
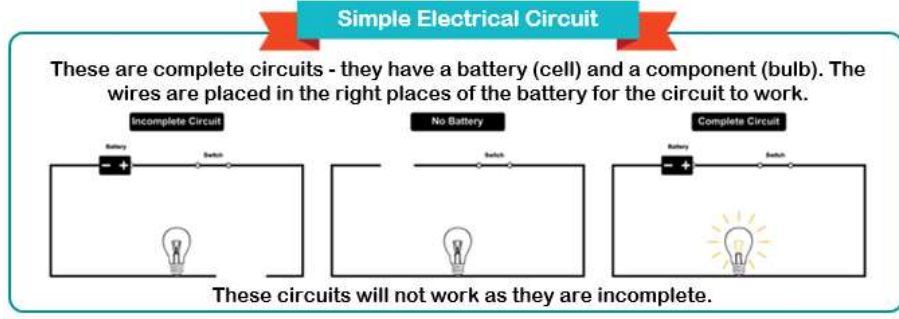


# Science Knowledge Organiser

## Electricity

Potential Careers - Electrician, Electrical Engineer

L1 - Electrical Appliances and Electrical Safety  
 L2 - Electrical Components in a Circuit  
 L3 - Investigate Electrical Circuits  
 L4 - Conductors and Insulators  
 L5 - Electrical Switches  
 L6 - Electrical Components That Change Within Circuits



- ### Key Facts
1. A circuit contains a battery (cell), wires and a component that requires electricity to work (bulb, motor or buzzer).
  2. Electrical current flows through the wires from the battery (cell) to the bulb, motor or buzzer.
  3. A switch can break or reconnect a circuit.
  4. A switch controls the flow of the electrical current around the circuit. When the switch is off, the current cannot flow. This is not the same as an incomplete circuit.

### Electrical Components

### Working Scientifically

### Rocket Words

	electricity	energy that powers electrical appliances
	batteries	containers made of cells in which chemical energy is converted into electricity
	circuit	a pathway that electricity flows around
	voltage	the measure of electrical power
	current	the flow of electricity
	bulb	the glass case that contains the filament of an electric lamp
	conductor	electrical conductors are materials which allow electricity to flow through them easily
	insulator	materials that do not let electricity pass through them easily
	switch	a device which builds and breaks the connection in an electric circuit
	control	manage the amount of something
	wind turbines	a device which produces electricity using the power of the wind
	hydropower	a process that produces electricity using the power of water



## Conductors and Insulators

• Materials that allow electricity to pass through to create a complete circuit are called electrical conductors.

• Materials that do not allow electricity to pass through and do not complete a circuit are called electrical insulators.



Draw three lines to match the key words to their definitions

series circuit

power obtained from the sun's rays

battery

electricity flows through one single pathway where the current is the same at every point

solar energy

a collection of cells with positive and negative parts

Tick whether each of the following objects is a conductor or an insulator

Object	Conductor	Insulator
car tyre		
metal coin		
pencil		
foil		
wooden spoon		

Use the correct word to fill the gap in the sentence

light sources

power sources

components

In a simple circuit, bulbs, buzzers or motors are known as \_\_\_\_\_.

Energy from a source that is not depleted when used is called \_\_\_\_\_.

Sort the different appliances into the correct part of the table below

Mains powered	Battery powered



kettle



mobile phone



microwave



calculator



toaster



watch



Write two things you should do if you find damaged or broken electrical equipment

1) \_\_\_\_\_

2) \_\_\_\_\_

### What will I know by the end of the unit?

- Identify common appliances that run on electricity.
- Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.
- Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.
- Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.
- Recognise some common conductors and insulators, and associate metals with being good conductors.

Circle whether these statements are true or false



You should never put your finger in a plug socket

true / false



The force of electricity that flows through a circuit is known as the power source

true / false



A switch, when open, will complete a circuit and light up a bulb

true / false