









**Cunningham Hill Junior School - Science Knowledge Organiser - Year 6 - Electricity**

**Key Vocabulary:**

1	<b>circuit</b>	A path that an electrical <b>current</b> can flow around.
2	<b>symbol</b>	A visual picture that stands for something else.
3	<b>cell / battery</b>	A device that stores chemical energy until it is needed. A <b>cell</b> is a single unit. A <b>battery</b> is a collection of <b>cells</b> .
4	<b>current</b>	The flow of <b>electrons</b> , measured in <b>amps</b> .
5	<b>amps</b>	How electric <b>current</b> is measured.
6	<b>voltage</b>	The force that makes the electric <b>current</b> move through the wires. The greater the <b>voltage</b> , the more <b>current</b> will flow.
7	<b>resistance</b>	The difficulty that the electric <b>current</b> has when flowing around a <b>circuit</b> .
8	<b>electrons</b>	Very small particles that travel around an electrical <b>circuit</b> .

**Components and their Symbols:**

**Symbols** are used to represent electrical components in circuit drawings to ensure that they can be read easily. The **symbols** are universal across different countries.

lamp / bulb (indicator)	lamp / bulb (lighting)	buzzer	motor
			
switch (open)	switch (closed)	cell	battery
			

**Scientist Study:**

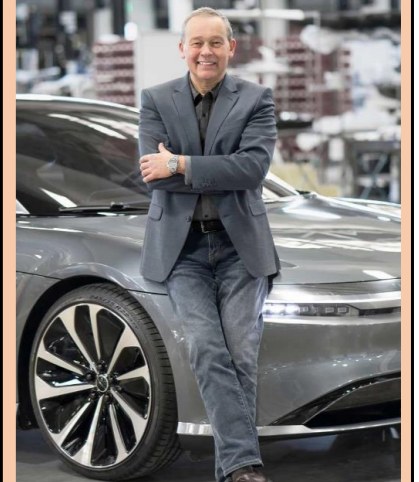


Maria Telkes

Maria Telkes was a famous scientist who made lots of discoveries around solar power. She was born in Hungary in 1900. She is best known for her work with solar energy.

Peter Rawlinson

Peter Rawlinson is a British engineer based in California. He is the chief executive officer and chief technology officer of Lucid Motors and is known for his work developing electric cars.



**How does Electricity get into your house?**

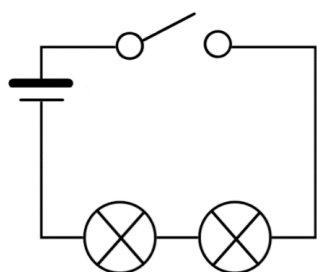


1. Electricity is made at a generating station by huge generators. Stations can use wind, coal, natural gas or water.
2. The current is sent through transformers to push it long distances.
3. The electrical charge travels through transmission lines.

4. It reaches a substation, where the **voltage** is lowered so it can be sent on smaller power lines.
5. It travels through distribution lines to residential areas. Smaller transformers reduce the **voltage** again to make the power safe to use in homes.
6. It connects to a house and passes through a meter that measures how much a household uses.
7. The electricity goes to the service panel where breakers or fuses protect the wires inside the home from being overloaded.
8. The electricity travels through wires inside the walls to the switches and mains outlets.

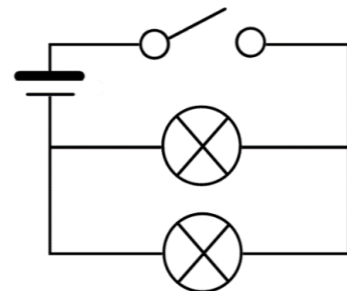
**Electricity is dangerous and electrical equipment should only be touched by people that are trained.**

**Series Circuit:**



In a series **circuit**, there is only one path for the electricity to take. If one component in a series **circuit** breaks, the whole **circuit** breaks.

**Parallel Circuit:**



In a parallel **circuit**, there is more than one path for the electricity to flow through. Therefore, if one component were to break, the others would still work.

**What will make a bulb brighter or a buzzer louder?**

More batteries or a higher **voltage**.

Shortening the wires to reduce **resistance**.

**What will make a bulb dimmer or a buzzer quieter?**

Fewer batteries or a lower **voltage**.

More components mean the power is shared.

Longer wires increases the **resistance**.