

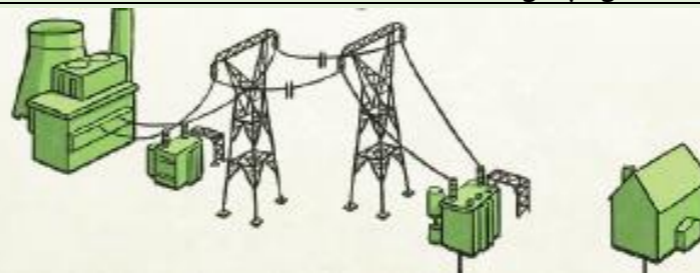
**Cunningham Hill Junior School - Science Knowledge Organiser - Year 4 - Electricity**

**Key Vocabulary:**

1	<b>electricity</b>	The flow of an electric current through a material e.g. from a power source through wires to an <b>appliance</b> .
2	<b>generate</b>	To make or produce.
3	<b>renewable</b>	A source of <b>electricity</b> that will not run out. These include solar, geothermal, hydro and wind.
4	<b>non-renewable</b>	This source of energy will eventually run out and so will no longer be able to be used to make <b>electricity</b> . These include fossil fuels - coal, oil and natural gas.
5	<b>appliances</b>	A piece of equipment or a device designed to perform a particular job, such as a washing machine or mobile phone.
6	<b>battery</b>	A device that stores electrical energy as a chemical.
7	<b>circuit</b>	A pathway that <b>electricity</b> can flow around. It includes wires and a power supply and may include bulbs, switches or buzzers.
8	<b>component</b>	The parts of an electrical <b>circuits</b> - including: batteries, bulbs, buzzers, motors, wires etc.
9	<b>conduct</b>	A <b>conductor</b> of <b>electricity</b> is a material that will allow <b>electricity</b> to flow through it. Metals are good <b>conductors</b> .
10	<b>insulate</b>	Materials that are insulators do not allow <b>electricity</b> to flow through them. Wood, plastic and glass are good insulators.

**Types of Electric Current:**

**Mains electricity:** power stations send an electric charge through wires to transformers and pylons. Then, underground wires carry the **electricity** into our homes via wires in the walls and out through pug sockets.



**Battery electricity:** batteries store chemicals which produce an electric current. Eventually, even rechargeable batteries will stop producing an electric current.



Many devices contain batteries, but need to use mains power to recharge those batteries.



**Circuits:**



**Electricity** can only flow around a complete **circuit** that has no gaps. There must be wires (or a **conductor**) connected to both the positive and negative end of the power supply / **battery**.

Switches can be used to break the **circuit**. When the **circuit** is broken, **electricity** cannot flow at the **components** switch off. When the switch is flicked again, the **circuit** is connected and **electricity** can flow again.



**Benjamin Franklin (1706 - 1790)**

In 1752, Benjamin Franklin flew a kite in a thunderstorm with a key tied to the string to show that lightning was **electricity**.



**Electrical Conductors:**



**Electrical Insulators:**



**Fossil Fuels:**

Coal, oil and natural gases are fossil fuels which when burnt, produce heat which can be used to **generate electricity**.



**Renewable Energy:**

**Electricity** can be **generated** from wind power used to turn windmills and hydroelectric power from water used in dams. The sun's rays can be converted into **electricity** by solar panels.



**Nuclear Energy:**

Nuclear energy is created when atoms are split. This creates heat which can be used to **generate electricity**.

