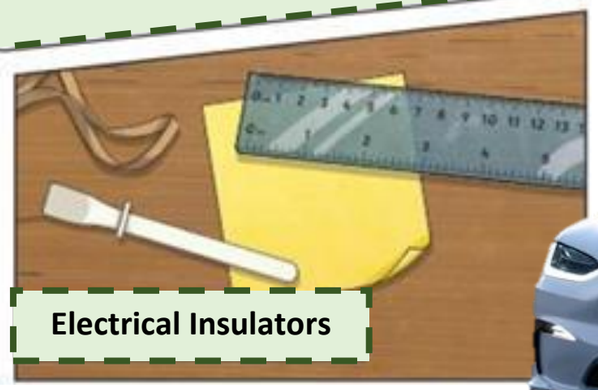
Are Electric Cars a Good

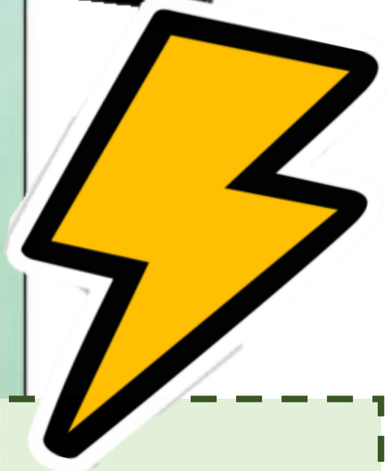
KNOWLEDGE ORGANISER

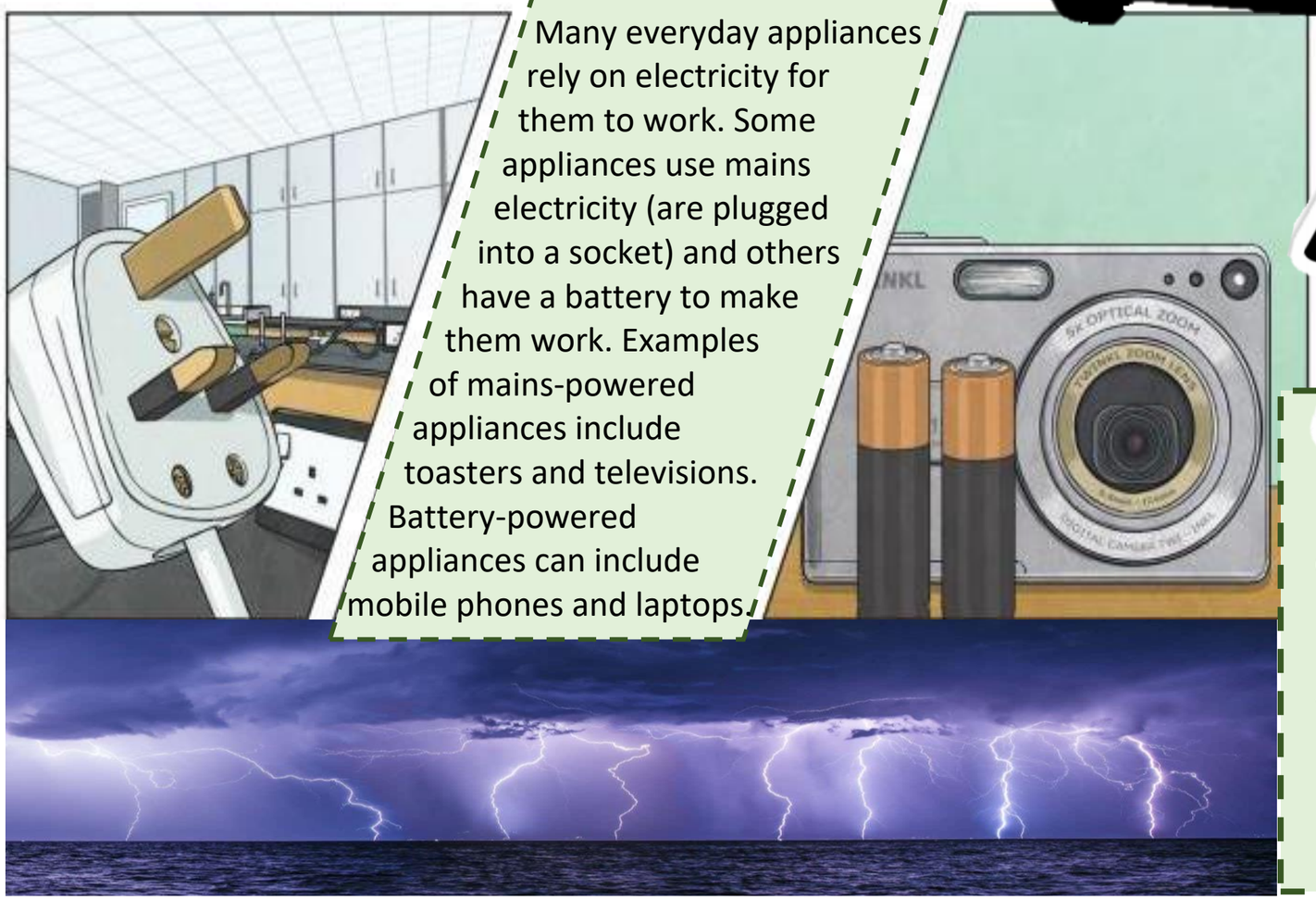
A conductor of electricity is a material that will allow electricity to flow through it. Metals are good conductors. Materials that are electrical insulators do not allow electricity top flow through them. Wood, plastic and glass are good insulators.

Electrical Conductor



Electrical Insulators





Many everyday appliances rely on electricity for them to work. Some appliances use mains electricity (are plugged into a socket) and others have a battery to make them work. Examples of mains-powered appliances include toasters and televisions. Battery-powered appliances can include mobile phones and laptops.

When we refer to electricity, what we usually mean in electric current, which is the flow of electric charge.

Key Vocabulary	
appliances	A device or piece of equipment (tool or gadget, etc) designated to perform a specific task.
battery	A container consisting of one or more cells, in which chemical energy is converted into electricity and used as a source of power.
bulb	A device used to convert electricity into light.
buzzer	An electrical device that makes a buzzing noise and is used for signaling.
cell	A scientific term for a battery.
circuit	In electronics, a circuit is a path between two or more points along which an electrical current can be carried.
conductor	A substance that allows heat or electricity to go through it: metal is a good conductor of heat.
electricity	A form of energy that can give things the ability to move and work.
generate	produce or create.
insulate	Protect (something) by interposing material that prevents the loss of heat.
switch	A device for making and breaking the connection in an electric circuit.
wire	Metal drawn out into the form of a think flexible thread or rod.

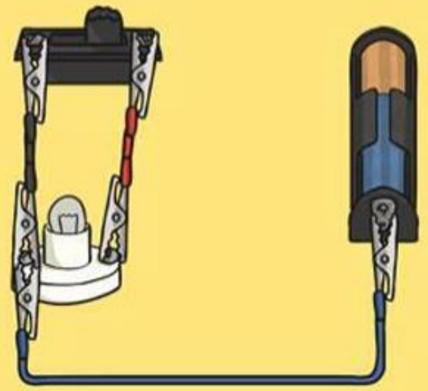
Lightning and static electricity are examples of electricity occurring naturally but for us to use electricity to power appliances, we need to make it.

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

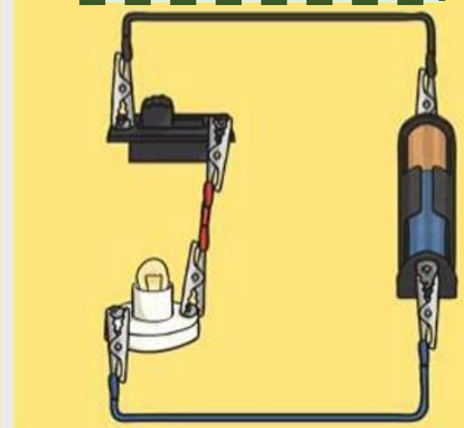
Electricity can be generated from wind power used to turn windmills and hydroelectric power from water used in dams. The Sun's rays can be converted into electricity by solar panels.

Nuclear energy is created when atoms are split. This creates heat which can be used to generate electricity. Geothermal energy is heat from the Earth that is converted into electricity.

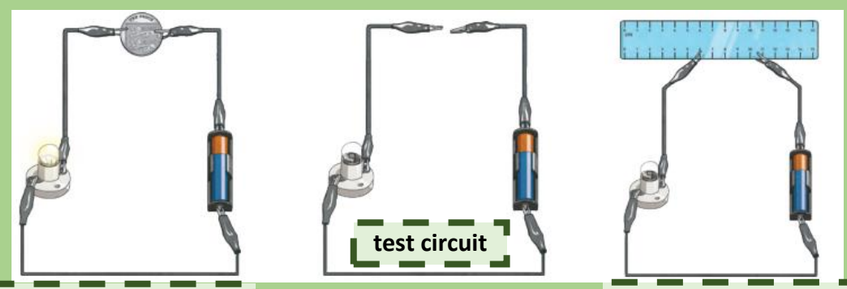
Incomplete Circuit



Complete Circuit



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



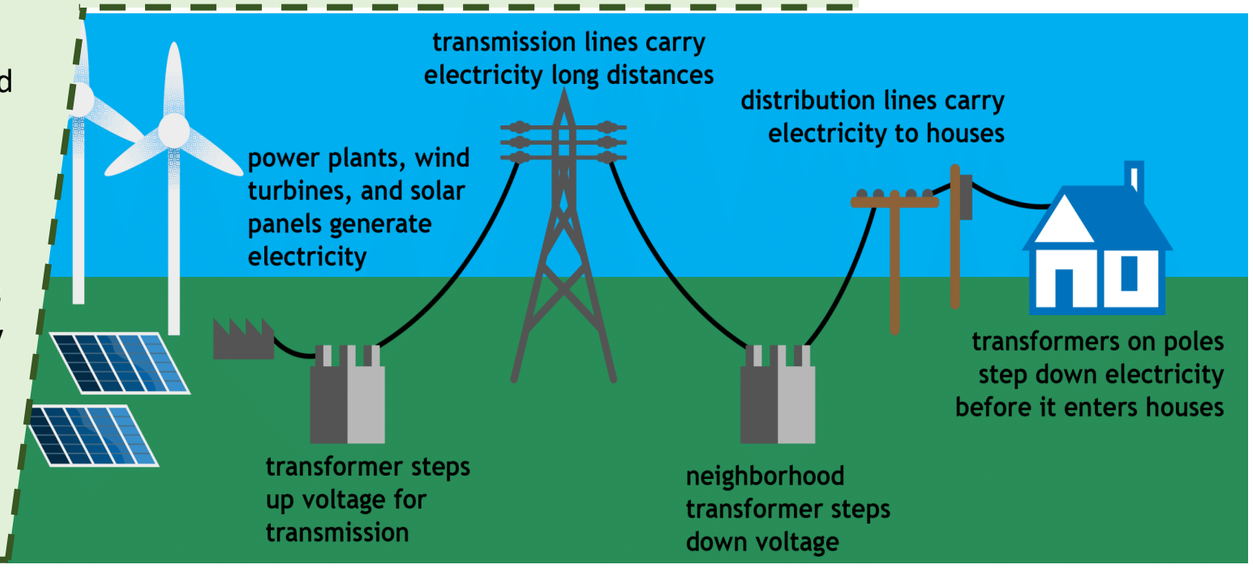
10p = metal = electrical conductors

ruler = plastic = electrical insulators

Materials can be tested in a circuit to see if they are electrical conductors or electrical insulators.

Electricity generation, transmission and distribution

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 plug sockets.



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