EAGLES - SCIENCE
Knowledge Organiser – Summer Term 2024

ELECTRICITY

What is electricity?

Electricity is a **form of energy** used for lighting, heating, making sound and making machines work..

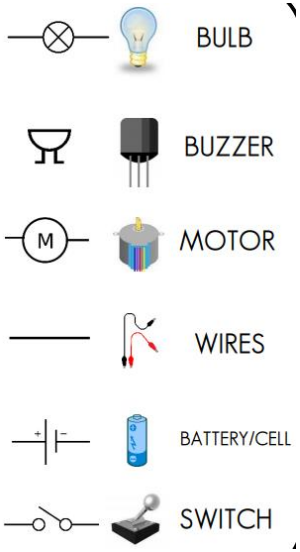
What is electricity?

Electricity is very dangerous. Be careful of mains switches, open sockets and any signs to do with electricity. The human body is 80% water and so conducts electricity well.

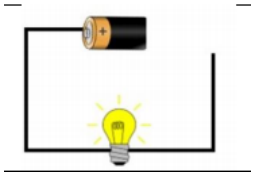
Key Vocabulary

Electrical appliance – a machine or device that runs on electricity.
Electrical circuit – this consists of a cell or battery connected to a component using wires. In order for it to work, it needs to be a complete circuit.
Cell and battery – A cell is a single unit and a battery is a collection of cells.
Mains – the electricity supplied to households from power stations.
Electrical component – a part that combines with others to form a circuit, e.g. a bulb, a switch, a buzzer.
Switch – a switch can be added to a circuit to turn a component on or off. It allows the electricity to flow or stops it.
Conductor – a material which allows electricity to pass through it (e.g. iron, copper)
Insulator – a material which does not allow electricity to pass through it (e.g. wood, plastic)

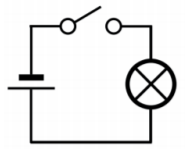
Key to electrical circuit components



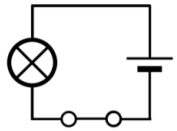
Examples of circuits



This first circuit will not work as it is not complete



This second circuit will not work as the switch is open.

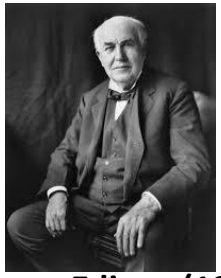


This third circuit is complete as the switch is closed so the light will come on.

Things to remember:

- If you make the wire longer, the bulb will get dimmer as there is more resistance.
- If you add more bulbs, the bulbs will also get dimmer unless you add more batteries.
- If you add more batteries, the bulbs will get brighter.

Significant Scientist



Thomas Edison (1847-1931) was an American inventor and is sometimes described as America's greatest inventor. Amongst other things, he invented the first practical incandescent light bulb.

Appliances that run on electricity

Some appliances run on mains electricity, others run on batteries. Some appliances can use both types.

Mains

Battery

Conductors and Insulators

An **electrical conductor** lets electricity pass through. They are often metals (iron, copper and steel) but water also conductors electricity.

An **electrical insulator** does not let electricity pass through (plastic, wood, rubber and glass)