



How does a burglar alarm work?



How will I keep safe when using electricity?



Do's

- Use the equipment safely and appropriately.
- Place your water bottle away from electricity.
- Turn off mains electricity before removing a plug.
- Adhere to any warning signs.



Don'ts

- Use the equipment with wet hands.
- Place anything into a mains plug socket.
- Walk around the classroom with equipment.

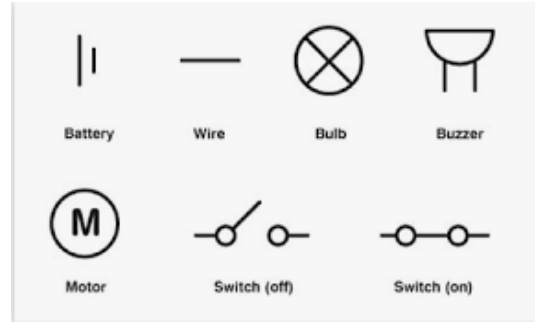


Key Vocabulary

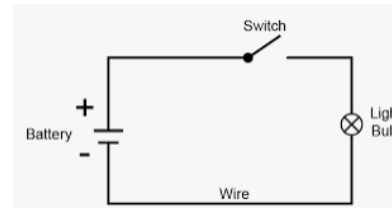
- **Electrical circuit**— A path or line through which an electrical current flows.
- **Mains**— electrical supply from power stations to households.
- **Complete circuit**— a complete loop of electricity
- **Circuit diagram**— graphical representation of an electrical circuit.
- **Symbol** — a mark or character used to represent a component.
- **Components**—a part or element of the circuit.
- **Cell**—a device which generates electricity.
- **Battery**—a container consisting of one or more cells.
- **Voltage**—the electrical force that drives the current.
- **Current**— the movement of an electrical charge.

How can I draw the circuit I have made?

- Symbols are used for the different components of a circuit. They are universally recognised across the world to ensure everyone is safe.



- The circuit is drawn with a ruler using straight lines for the wires.



How can I make a bulb brighter or an alarm louder in my circuit?

Working scientifically

- Use variations in the components of a circuit to discover which ones affect the brightness of a bulb and the loudness of a buzzer.
- **Variables**—you will need to keep everything the same in your circuit apart from the component you are testing. E.g. if you want to test if the number of batteries changes the brightness of a bulb, you only change the number of batteries.

The number and voltage of cells in the circuit will change the brightness of a bulb or the volume of a buzzer.

More cells or a higher voltage the bulb is brighter or the volume of a buzzer is louder.

How does a burglar alarm work?

- A burglar alarm works by using a switch.
- An alarm doesn't sound when there is a break in the circuit (the switch is off) and the current is unable to flow. The alarm sounds when there is a full circuit (the switch is on) and the current can flow around the circuit.
- The switch must be made using both conductors and insulators of electricity.



Applying Past Knowledge

This learning links with the lessons in year 4:

- Identifying appliances that use electricity.
- Creating a simple circuit to light a bulb or sound a buzzer.
- Understanding what happens when the circuit is broken.

