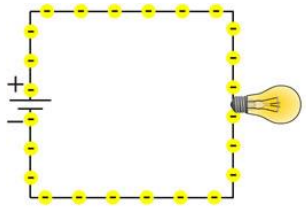
# Knowledge Organiser: Electricity Y6

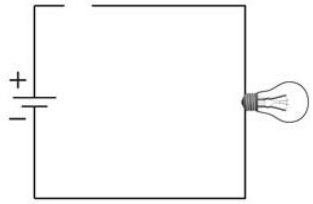
## Revision of Year 4 Electricity:

- Many **common appliances** such as washing machines and televisions run on electricity.
- A **complete (closed) circuit** with a cell will allow electricity to flow around it and will switch on the bulb.



closed circuit

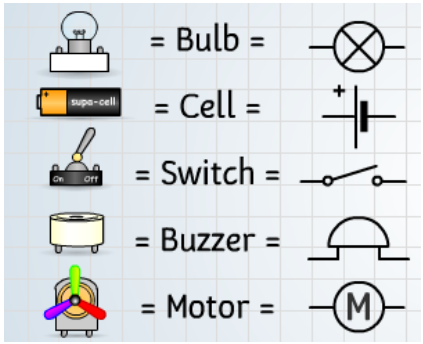
- An **incomplete (open) circuit** with a cell will not allow electricity to flow and will not switch on the bulb.



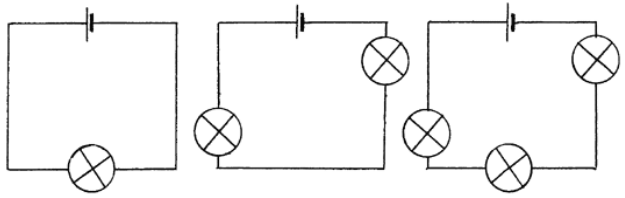
- A circuit must contain a **cell** or **battery** and be closed for the components to be switched on.
- A **switch** will open or close the circuit.
- **Conductors** such as metals and graphite (pencil "lead") allow electricity to flow through them.
- **Insulators** such as wood and plastic do not allow electricity to flow through them.
- Electricity can be dangerous – never touch a plug or switch with wet hands. Do not go near power lines.

## New Learning:

- **Components** in a circuit can be represented with symbols




- Components such as a motor or buzzer are **transducers** because they change electrical energy into kinetic (movement) energy or sound energy.
- A **circuit diagram** shows all the components in a circuit and how they are connected.
- By looking at a circuit diagram we can tell whether a circuit is closed or open.
- In a **series circuit**, adding more components means the voltage is shared between them – bulbs will be dimmer and buzzers will be quieter.




- Using **a cell with a higher voltage** will cause lamps to be brighter or buzzers to be louder.
- Using **more cells** in a series circuit will cause lamps to be brighter or buzzers to be louder.

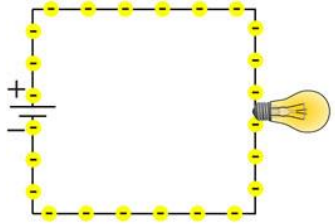
## Key Vocabulary

| | |
|---|---|
| **battery** | a collection of cells. People often say 'battery' when they should say 'cell'. |
| **cell** | A device which converts chemical energy into electrical energy. |
| **circuit** | A complete route which an electric current can flow around. |
| **component** | A device in an electric circuit, such as a battery, switch or lamp. |
| **conductor** | A material that conducts electrical current because the electrons are able to move |
| **electric current** | The flow of electricity around a circuit |
| **electrons** | Negatively charged particles |
| **insulator** | A material that does not conduct electricity because the electrons are not free to move |
| **parallel circuit** | When components in a circuit have separate connections to the cell and the current (flow of electricity) is split up. Each component receives the same voltage. |
| **resistance** | The opposition in an electrical component to the movement of electrical charge through it. |
| **series circuit** | A circuit where one component follows directly from another, e.g. three bulbs in a row with no junctions are said to be connected in series. The same current flows through all components and the voltage is shared between the components. |
| **transducer** | Any device, such as a buzzer or electric motor, that converts one form of energy into another |
| **voltage** | The voltage of an electrical current is its force measured in volts. |

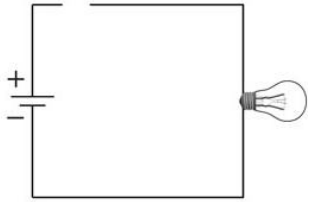
# Knowledge Organiser: Electricity Y6

## Revision of Year 4 Electricity:

- Many …….. such as washing machines and televisions run on electricity.
- A …… with a cell will allow electricity to flow around it and will switch on the bulb.



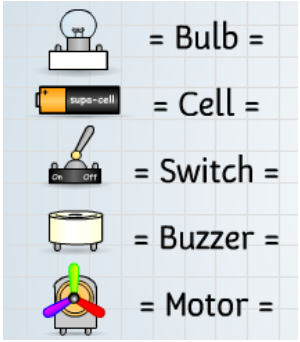
- An …….. with a cell will not allow electricity to flow and will not switch on the bulb.



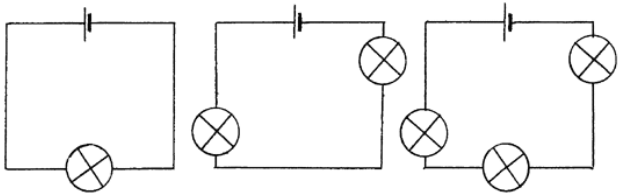
- A circuit must contain a …… and be closed for the components to be switched on.
- A …….. will open or close the circuit.
- …… such as metals and graphite (pencil "lead") allow electricity to flow through them.
- ……. such as wood and plastic do not allow electricity to flow through them.
- Electricity can be dangerous – never touch a plug or switch with wet hands. Do not go near power lines.

## New Learning:

- …….. in a circuit can be represented with ……




- Components such as a motor or buzzer are …….. because they change electrical energy into kinetic (movement) energy or sound energy.
- A …… shows all the components in a circuit and how they are connected.
- By looking at a circuit diagram we can tell whether a circuit is ……
- In a **series circuit**, …… components means the voltage is shared between them – bulbs will be dimmer and buzzers will be quieter.



- Using **a cell with a** …… **voltage** will cause lamps to be brighter or buzzers to be louder.
- Using …… **cells** in a series circuit will cause lamps to be brighter or buzzers to be louder.

## Key Vocabulary

| | |
|---|---|
| | a collection of cells. People often say 'battery' when they should say 'cell'. |
| | A device which converts chemical energy into electrical energy. |
| | A complete route which an electric current can flow around. |
| | A device in an electric circuit, such as a battery, switch or lamp. |
| | A material that conducts electrical current because the electrons are able to move |
| | The flow of electricity around a circuit |
| | Negatively charged particles |
| | A material that does not conduct electricity because the electrons are not free to move |
| | When components in a circuit have separate connections to the cell and the current (flow of electricity) is split up. Each component receives the same voltage. |
| | The opposition in an electrical component to the movement of electrical charge through it. |
| | A circuit where one component follows directly from another, e.g. three bulbs in a row with no junctions are said to be connected in series. The same current flows through all components and the voltage is shared between the components. |
| | Any device, such as a buzzer or electric motor, that converts one form of energy into another |
| | The voltage of an electrical current is its force measured in volts. |