



Science Knowledge Organiser

Year 6 Summer (ii)

Electricity- What is light?

Substantive Knowledge- What are the symbols of a simple circuit?

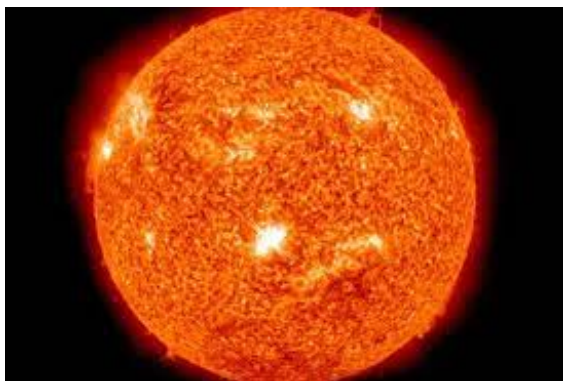
In the world of electricity and circuits, the brightness of a lamp or the volume of a buzzer is determined by the number and voltage of cells used in the circuit.

By increasing the number of cells or their voltage, the lamp becomes brighter, and the buzzer gets louder. Components in a circuit, like bulbs, buzzers, and switches, can function differently, and we can compare and understand these variations.

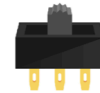
Circuit diagrams use recognised symbols to represent components accurately. Following a circuit diagram, we can create a simple circuit and see it in action.

Light Sources

A **light source** makes light. The **Sun** and other **stars**, **fires**, **torches** and **lamps** all make their own light, so they are examples of sources of light.



Lamp



Switch



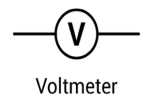
Motor



Buzzer



Ammeter



Voltmeter

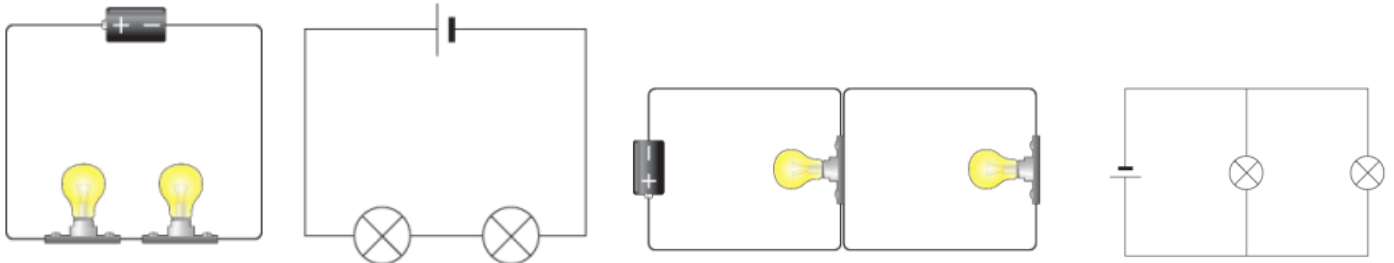


Battery

Series and Parallel Circuits

There are two types of circuit we can make, called series and parallel. The components in a circuit are joined by wires. If there are no branches then it's a series circuit. If there are branches it's a parallel circuit.

- Components connected in series are connected along a single conductive path.
- The same current flows through all of the components but voltage is dropped (lost) across each of the resistances.
- In a series circuit, every device must function for the circuit to be complete. If one bulb burns out in a series circuit, the entire circuit is broken.

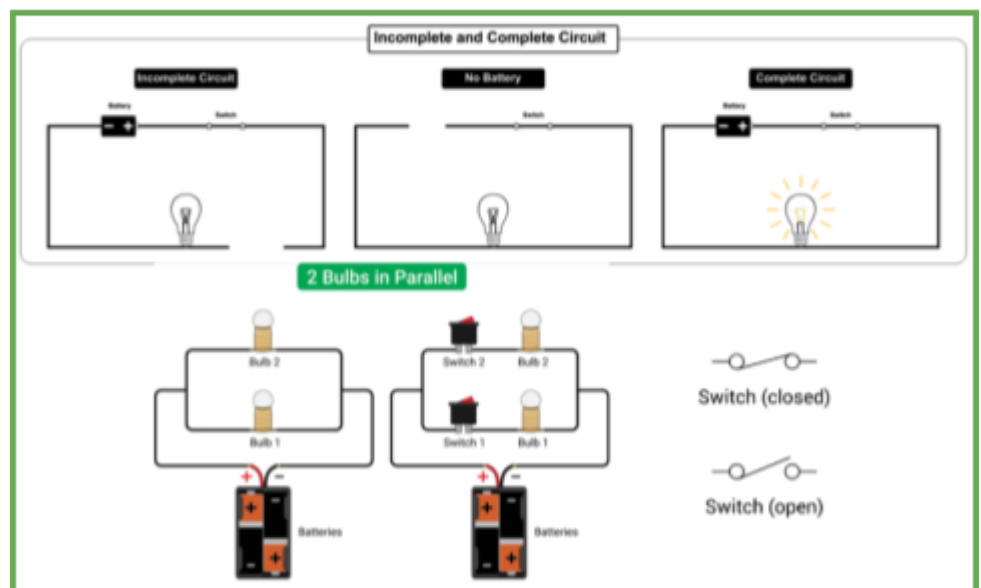


4. In a series circuit, the sum of the voltages consumed by each individual resistance is equal to the source voltage.
5. Components connected in parallel are connected along multiple paths so that the current can split up; the same voltage is applied to each component.
6. In parallel circuits, each light bulb has its own circuit, so all but one light could be burned out, and the last one will still function.



Adding more cells (batteries) to a circuit will make bulbs brighter, buzzers louder and motors faster.

Incomplete and Complete Circuits



Switches can be placed in a **parallel circuit**, so that 1 light can be turned on while another is off (just like in a house).

Core Vocabulary

Element - An element is a substance that cannot be broken down into any other substance.

Voltage - a measure of how strong the current is in a circuit.

Component - a part or element of something.