

JSS3 BASIC TECH THIRD TERM

SIMPLE ELECTRICAL WIRING

BUILDING (FOUNDATION)

BUILDING (WALLS)

Topic: Simple Electrical Wiring

Content

- **Electrical Circuit**
- **Wiring Tools**
- **Accessories**

Electric Circuits

An electric is a complete path through which electrons or current flows. The path is made up of cable or wire which connect all the components of the circuit.

Components of an electric circuit include:

- (i) **Battery or generator:** This is referred to as the power source.
- (ii) **Conductor:** This is the cable or wire used in connecting other components. The conductor is made of copper.
- (iii) **Load:** This includes the lamp and the other electrical appliances connected to the circuit e.g. radio and T.V. sets, fan, etc.
- (iv) **Control:** This refers to the electric component that is used to switch “on” and “off” current. Fuses are included as control since they cut off in case of excess voltage.

V = voltage, I = current, and R = Resistance

Mathematical relationship between voltage, current and resistance is expressed as follows

$$V = IR, I = V/R \text{ and } R = V/I$$

Example:

(i) A current of 0.5A flows in a circuit with resistance 60 ohms. Calculate the potential difference within the circuit.

Solution

(i) $V = IR$

Current (I) = 0.5A, Resistance (R) = 60Ω

Voltage (V) = $0.5 \times 60 = 30$ volts

Wiring Tools and Materials

Hand tools used in the process of electrical installations are referred to as wiring tools. They are common tools such as pliers, hammer, screwdrivers, small knives, punches, cutters, hand gloves e.t.c. Wiring materials includes, black sole tape, clips, wooden block, cable, screws, etc.

Uses of Wiring Tools and Materials

Pliers: These are used in holding, cutting and joining conductor or cables. The pliers are coated or insulated with rubber materials.



Hammer: It is a tool used to drive....