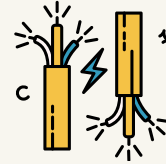


# ELECTRICAL COMPONENTS

Electrical components are the basic building blocks of electronic devices. When electrical components are connected together, they form a circuit. Circuits allow electricity to flow, which powers electronic devices.

## WIRE

- Made from a metal, usually copper.
- Allows electricity to flow through a circuit.
- Connects all the components in a circuit.
- Coated in an insulator for safety.

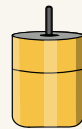


- Contains a thin wire that glows when electricity flows through it.
- Converts electricity into light energy.
- Used in lamps, flashlights, car headlights.

## BULB

## MOTOR

- Uses electricity to spin a shaft and make things move.
- Converts electrical energy into movement.
- Found in blenders, drills, washing machines.

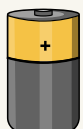


- Makes buzzing sounds when electricity makes metal parts vibrate.
- Converts electricity into sound.
- Used in doorbells, timers, alarms, phones.

## BUZZER

## SWITCH

- Opens or closes a circuit to turn electricity flow on or off.
- Used to control lights, appliances, toys.



- Stores chemicals that produce electricity, through reactions.
- Provides voltage to power circuits.
- Provides portable power for gadgets like phones, toys, cars.

## BATTERY

## Multiple Choice Questions

**1. The coil of wire in an electric heater is called:**

- (a) Component (b) Element (c) Circuit (d) Spring

**2. The amount of heat produced in a wire depends on:**

- (a) Material (b) Length (c) Thickness (d) All of these

**3. The thin wire in a bulb is called:**

- (a) Filament (b) Coil (c) Element (d) Fuse wire

**4. When electric current passes through a wire, it behaves like a:**

- (a) Battery (b) Temporary magnet (c) Fuse (d) Compass needle

**5. Who discovered the magnetic effect of current?**

- (a) H.C. Oersted (b) Michael Faraday (c) Ohm (d) Fleming

**6. The most suitable material for making the core of an electromagnet is:**

- (a) Iron (b) Brass (c) Aluminium (d) Steel

**7. The compact fluorescent electric lamp (CFL) has:**

- (a) Nichrome filament (b) Chromium filament  
(c) Tungsten filament (d) No filament

**8. Electromagnet loses its magnetic property when:**

- (a) Current is very high (b) Current is switched off  
(c) Heat is increased (d) Current is switched on

# Circuit Diagram Symbols Worksheet

Look at the pictures and write the name of each piece of equipment.

battery

resistor

closed switch

AC voltage

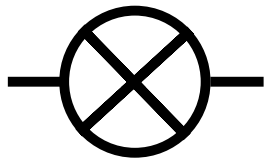
ground

open switch

DC voltage

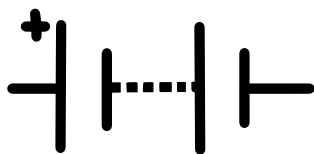
current

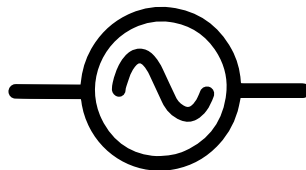
bulb

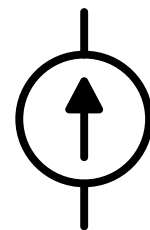




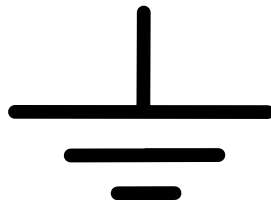


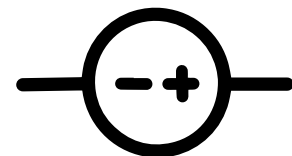






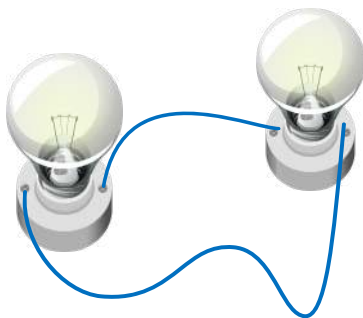
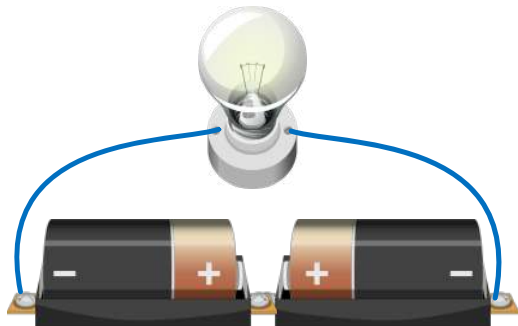
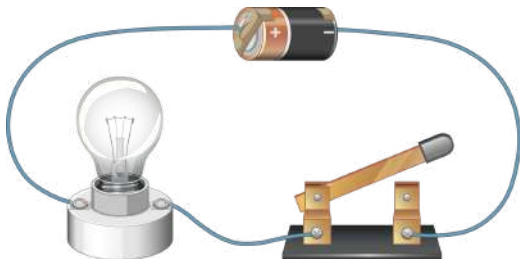
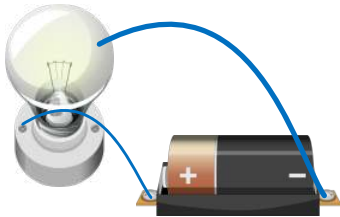






## WHY WON'T IT LIGHT?

Directions: In the boxes below, tell why each light bulb will not light.



## Fill in the Blanks

1. In the symbol of the electric cell, the longer line represents the \_\_\_\_\_ terminal, and the shorter line represents the \_\_\_\_\_ terminal.
2. The bulb glows only when the switch is in the \_\_\_\_\_ position, and the electric circuit is \_\_\_\_\_.
3. When the switch is in the 'OFF' position, the circuit is \_\_\_\_\_.
4. The \_\_\_\_\_ mark ensures that the appliance is safe, and energy wastage is \_\_\_\_\_.
5. \_\_\_\_\_ are switches that automatically turn off when the current in a circuit exceeds the safe limit.
6. When electric current passes through a wire, it behaves like a \_\_\_\_\_.
7. Doctors use tiny \_\_\_\_\_ to remove magnetic particles from the eye.
8. A current-carrying coil of insulated wire wrapped around a piece of iron is called an \_\_\_\_\_.
9. A combination of two or more cells is called a \_\_\_\_\_.
10. The electromagnet weakens the cell quickly if left \_\_\_\_\_.

## Answer the Following Questions

1. What are the causes of excessive current flow in a circuit?
2. List the advantages of CFL over a traditional bulb.
3. How is the heat produced by electric current related to resistance, the magnitude of current, and time?
4. Why is an MCB preferred over a fuse?