

Introduction

- In our day-to-day life, we use electricity for many purposes.
- Electricity makes our tasks easier.

For example: - We use electricity to lift water from wells, we use electricity to grind spices and other food items.

- Electricity is used for lighting also. For example:- We use electricity to light our homes, roads offices etc.

Electricity Cell –

- Electric cells produce electricity for operating electrical devices.
- Alarm clocks, wristwatches, cameras and many other devices use electric cells.
- Electric cells are in a cylindrical shape with a small metal cap on one side and a metal disc on another side.
- A positive (+) sign and negative (-) sign is marked on the cell metal cap as the positive terminal and the metal disc is the negative terminal.
- An electric cell produces electricity from the chemicals inside it. The cell stops working once it fully used the chemicals present in it.

(Points to remember: - electricity can be dangerous if not handled properly)

One should never attempt to experiment with electric wire and sockets.

Use electricity only for activities related to electricity.

Activity – 1

1. Take a torch and look inside its bulb.
 2. You will find a thin wire fixed in the middle of the bulb.
 3. Now switch on the torch. the thin wire which glows on give off the light is known as filament
- Just like the electric cell, the electric bulb has two terminals one connected to the metal case at the base of the bulb and the other connected to the metal tip of the centre of the base. A bulb is connected to an electric cell.

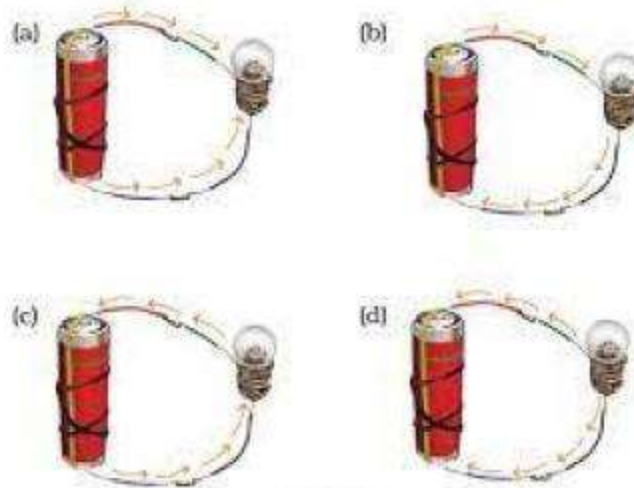


Fig. 12.1

Activity – 2

1. Take four lengths of wire of different coloured plastic covering.
2. Expose the metal end of the wire by removing plastic coverings.
3. Fix the exposed parts of two wires to the cell and the other two wires to the bulb.
4. Now, connect the wires fixed to the bulb with those attached to the cell in six different ways.
5. Note the cases in which the bulb glows and the cases in which the bulb does not glow.

An Electric circuit:

- When the two terminals of the electric cell and the bulb is connected it makes a circuit.
- The electric circuit provides a complete path for electricity or current to flow between the two terminals of the electric cell.
- The direction of the flow of current in the circuit is from the positive to the negative terminal of the electric cell.
- An electric bulb glows up when the terminals of the bulb and cell are connected.
- An electric bulb may fuse because of a break in the path of the current flowing between the terminals of the electric cell.

Electric switch: -

- A simple device that can break or complete a circuit is called a switch.

- If the switch is on that means the circuit is connected and the current can flow through the circuit.
- If the switch is off that means the circuit is broken and the current cannot flow through the circuit.
- Electric switches are used in the lighting of an electric bulb and in many other appliances.

Electric conductors and insulators

- Materials that allow the electric current to pass through them are called Electric conductors. for e.g. metals like copper, aluminium etc.
- Materials that do not allow the electric current to pass through them are called Insulators. for e.g., wood, plastic etc.



Activity – 3

1. Take a connected electric circuit of an electric cell and an electric bulb with a switch.
2. Disconnect the switch from the electric circuit.
3. This would leave two free ends of the wire. This arrangement will be the conduction tester.
4. Collect samples of different materials such as keys, cardboard, pins, plastic scales, iron nail etc.

5. Now bring the two free ends of the tester to the two ends of the samples you have.
6. Note down the name of those materials which allow the electricity to pass through them and also the name of those materials through which electricity does not pass.
7. Conclusion:
 - Materials that allow the electric current to pass through them are conductors.
 - Materials that do not allow the electric current to pass through them are insulators.
 - The human body is an example of a conductor.
 - Switches, electric sockets are made of conductors while plastic is used as the insulator for covering electric wires.

