

ACTIVITY-2

Subject: Physics

Topic: - Electricity and Circuits

Sub – Topic: Conduction of Materials

Class: Grade 7

Duration: 30 Mins

Aim:

- To understand the concept of good and bad conductors.
- To check the conductivity of any material (solid / liquid).

Materials Required:-

1. A Card Board
2. One LED bulb
3. Pencil cell holder
4. Drawing pins
5. Connecting wire
6. Materials to be checked

Procedure:-

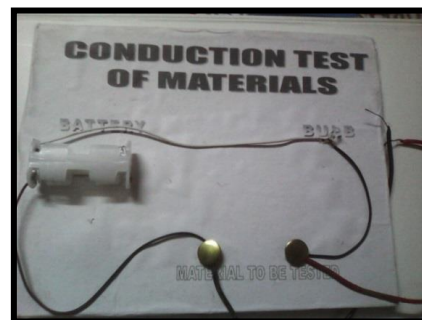
- Fix the cell holder with the help of a double sided tape on card board.
- Then fix LED bulb and thumb pins on cardboard with connecting wires as shown in the figure.
- Make sure that positive end of the bulb is connected to positive terminal of the cell.
- Leave one end free of two wires connected to the drawing pins.
- Connect end terminals of material to be tested with these wires or if liquid solution is there then dip the free end of wires in solution maintaining suitable gap between wires.

Conclusion:-

If the bulb glows in the circuit it means material is a conductor and if bulb does not glow it means material is an insulator. Observation can be recorded in tabular form for different materials.

Concept used in daily life:

- Copper, silver, gold and aluminium are a few examples of Electrical conductors.
- Copper is the most commonly used material for connecting wires.



- Sometimes we get electric shocks because our bodies are also good conductors of electricity.
- Tap water is a good conductor of electricity, but distilled water (water in its purest form) acts as an insulator. Distilled water is therefore, used in batteries as an insulator.
- Some common insulators are glass, air, plastic, cotton, thermocol, wood and rubber. As insulators do not conduct electricity they are used to protect us from the dangerous effects of electricity.
- Plugs and switches are covered with an insulating material such as plastic.

Student Learning Objectives Standards:

- Students will be able to explain how electric current flows in a circuit.
- Students will be able to wire a basic circuit.
- Students will be able to take measurements on a circuit.
- Students will be able to explain the difference between series and parallel connections.

Key Questions:

1. What is Electricity?
2. What are Electric charge, current, voltage, and power, and how are they related?
3. Can current flow without a voltage source?
4. How does the resistance of a material determine how much electric current flows through it?
5. Will current flow through an open (disconnected) circuit? Why or why not?
6. What is the difference between series and parallel connections?
7. Where do we find electric circuits in our lives?

Key Terms:

Electricity Charge Coulomb, Current Ampere Voltage, Resistance Ohm Power, Watt Ohm's Law and Series Parallel Circuits.