



Electricity and Circuits

ELECTRIC CHARGES

- There are 3 particles that make up an atom, with 3 distinct charges:
 - Protons – Positive
 - Neutrons – Neutral
 - Electrons – Negative



HOW CHARGES INTERACT

- Objects with the same charge REPEL
- Objects with different charges ATTRACT

In the world of static electricity ...



oppositely-charged objects attract

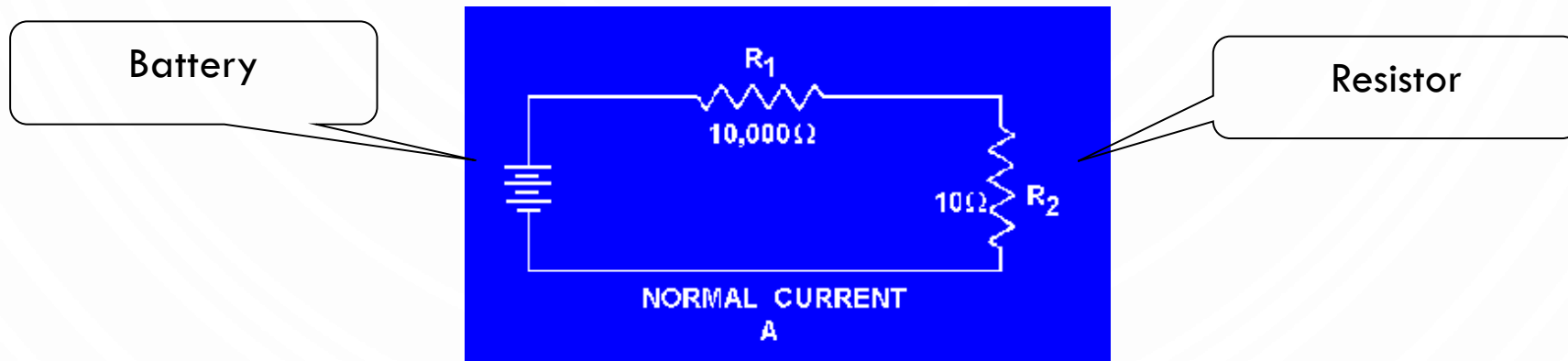
AND



objects with like charges repel

AN **ELECTRICAL CIRCUIT** IS ANY CONTINUOUS PATH FOR ELECTRONS TO FLOW AWAY FROM A SOURCE OF ELECTRICAL POTENTIAL (VOLTAGE) AND BACK AGAIN.

- From the word *circle*.



- For a circuit to work:
 - **Complete circuit** (no breaks in the path!).
 - **NO short circuit** or **NO open circuit**.

CIRCUIT COMPONENTS

1 Voltage Source

A circuit needs an energy source to push a charge through the circuit.

2 Load

A device in a circuit that operates using electrical energy.

3 Conductor

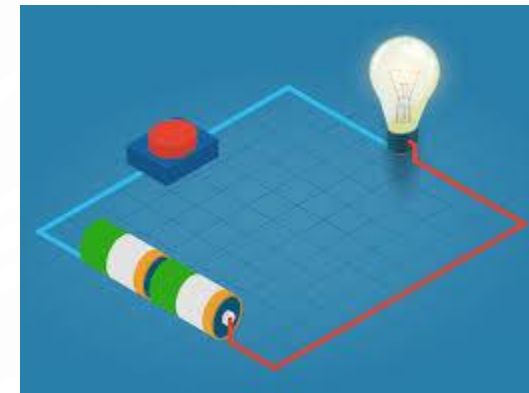
Materials that allows electrical energy to flow through it easily.

4 Resistor

An object added to a circuit that restricts the flow of electrical energy.

5 Switch

A device that is used to control the flow of current through a circuit.



TYPES OF CIRCUITS

- Series Circuit
 - Provides only one possible path for the flow of current.
- Parallel Circuit
 - Offers more than one path for the flow of electricity.

