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Date _____

West Islip Technology Department

Period _____

The Basic Electrical Circuit and its Parts

- A basic electrical circuit consists of three main parts: a source of voltage, a load, and its conductors.
 - An example of a source of voltage is a battery.
 - An example of a load is a lamp.
 - An example of a conductor is a wire.

- Voltage (E) is the force behind electron flow.

- The volt (V) is the electrical unit used to express the amount of electrical pressure present, or the amount of electrical force produced by the chemical reaction inside the battery.
 - The red wire (hot wire) for a battery goes to the positive connection.
 - The black wire (ground wire) for a battery goes to the negative connection.

- Electrical current (I) is the flow of electrons.

- The amount of electrons flowing past any given point in one second is rated in the electrical unit ampere (A).

- All electrical circuits have resistance (R). Resistance is the opposition to the flow of electrons.

- Resistance is measured in the unit known as ohms, and the electrical symbol for ohm is Ω (the Greek letter for omega).

- A good conductor of electricity is anything that permits the free flow of electrons.
 - Examples: copper, iron, steel, aluminum, silver, tin, damp earth, and salt water

The Basic Electrical Circuit and its Parts cont...

- A poor conductor of electricity is a material that will not permit the free flow of electrons, and this is known as an *insulator*.
 - o Examples: glass, mica, porcelain, air, dry wood, sand, distilled water, some plastics, paper, rubber, and oil.

- A *semiconductor* is a material that limits the flow of free electrons, and is considered to be neither a good or poor conductor of electricity.