Things to Memorize: Circuits

Basics of Circuits

- For Electricity to flow, a circuit must make a complete path between the two sides of the source.
- **Voltage** is the energy per charge.
- **Current** is the amount of charge that passes a point in one second.
- **Resistance** is the hindrance to the flow of charge.

Circuit Components

Battery		*Source* - Stores energy for a circuit chemically.
Resistor		Dissipates electrical energy as heat; resists the flow of current.
Light Bulb		Similar to a resistor, but resistance changes with temperature.
Light Emitting Diode (LED)		Turns electrical enegy into light; only lets current flow one way. Must be used in series with a resistor or will be destroyed.
Capacitor		Stores energy in an electrical field.
Inductor		Stores energy in a magnetic field.
Ammeter		Measures current
Voltmeter		Measures Voltage

Resistors

Capacitors

Types of Circuits

- **Series circuits** have only one path for current to flow.
  - Resistors in Series **add**.
  - Capacitors in Series **add as reciprocals**.
  - Current in series is **the same**.
  - Voltage in series **adds up** to the voltage of the source.
- **Parallel Circuits** have multiple paths for current to flow.
- Some circuits have parts that are in series and other parts that are in parallel.

Meters and Measurements

Kirchhoff's Laws