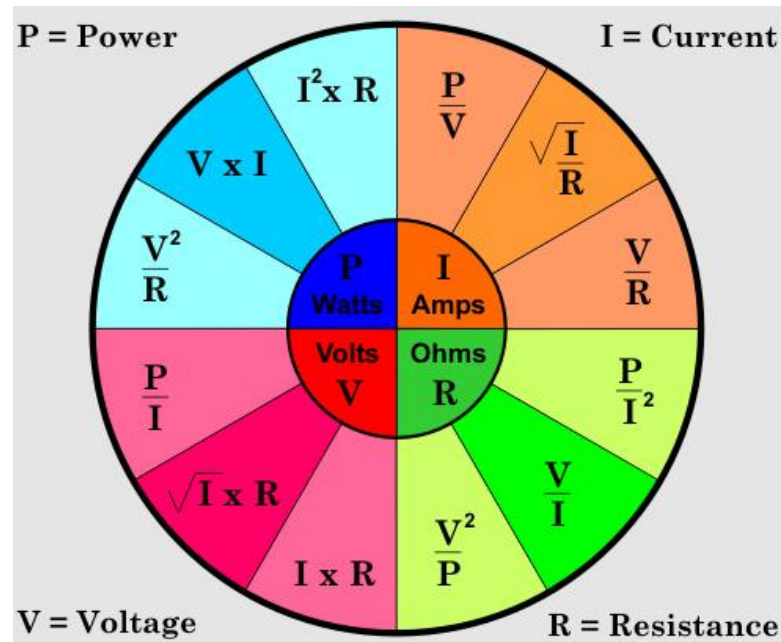
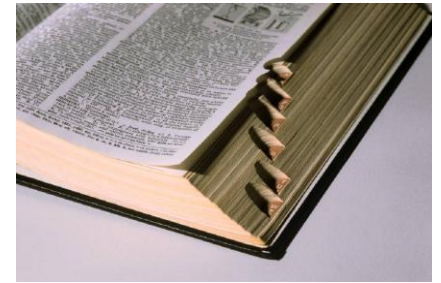


Electricity

101

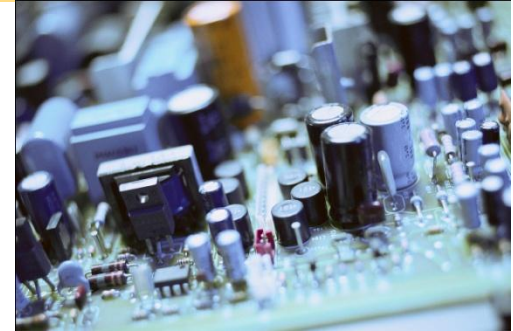


Electrical Terms



- **Voltage** is electromotive force. It is the force or push on electrons in the circuit, measured in Volts
- **Current** is the amount of electricity that flows in the circuit, measured in Amps
- **Resistance** is the opposition to current flow in the circuit, measured in Ohms
- **Power** is the amount of work that is done in the circuit, measured in Watts

Electrical Components



- **Conductors** are materials that allow the flow of electrons, these materials contain moveable electric charges. Metals are great conductors.
- **Resistors** are as the name implies, resistors to the flow of electrons.
- **Insulators** are used to protect you from current because they do not allow the flow of electrons.

Ohm's Law

- Ohm's law is the relationship between voltage, current, and resistance

$$\text{Voltage} = \text{I(Current)} \times \text{Resistance}$$

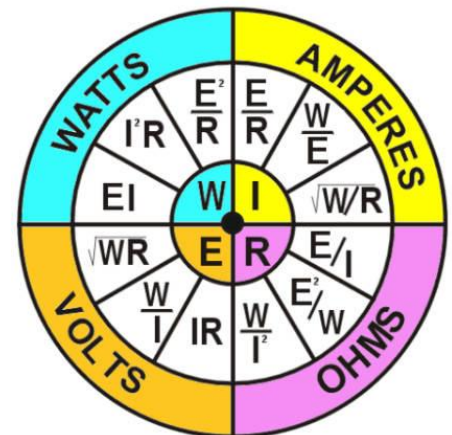
- Amount of current that can be pushed through a conductor depends on resistance and voltage

$$\text{I(Current)} = \text{Voltage} / \text{Resistance}$$

- Greater distance means increased resistance

$$\text{R} = \text{V} / \text{I}$$

- Voltage = current x resistance
- Current = Voltage / Resistance
- Resistance = Voltage / Current



Types of Power



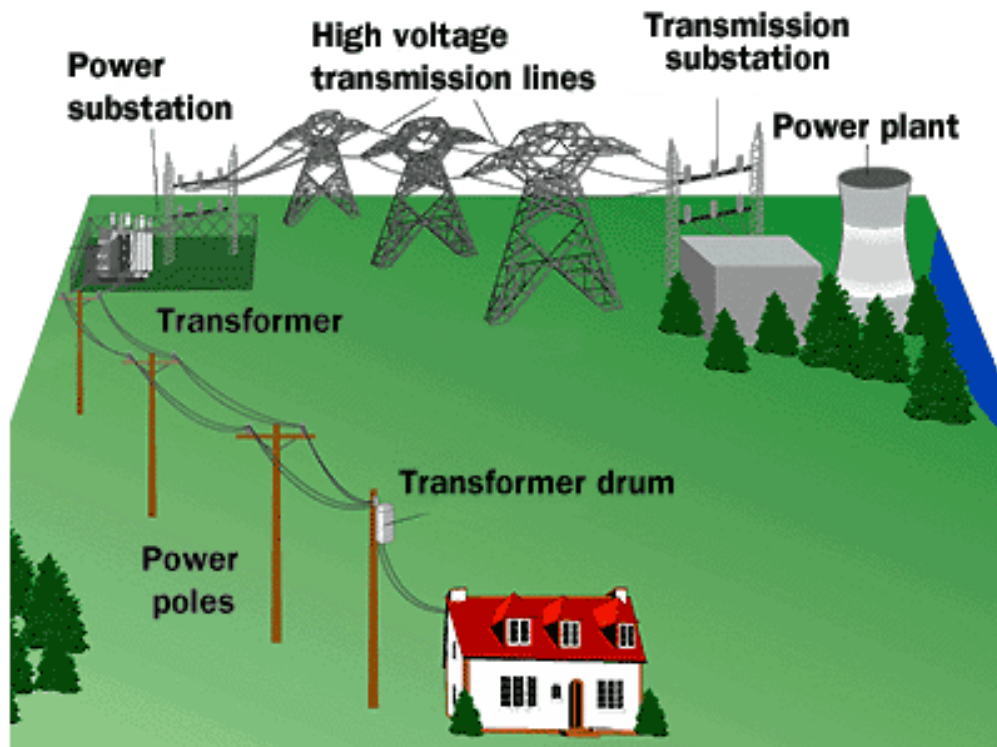
AC

- Alternating Current
 - Travels in both directions along wire
- Most commonly used in powering buildings, homes, cities, and plugged in devices

DC

- Direct Current
- “One way street”
- First type of power discovered
- Most common uses: batteries, generators, and automobiles

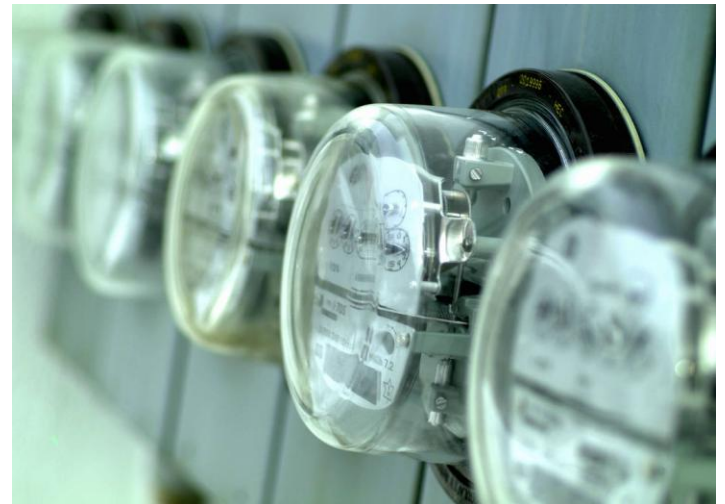
Getting the Power To You



- Power from the power plant is too high in voltage to be used in your home
- Substations and transformers (the boxes mounted on power poles) step down the power for your home's use

Measuring it

- **Watt** – Most common form of measuring
- **Kilowatt** – 1000 watts
- **Ohm** – unit for resistance to current
- **Volt** – the potential difference in electricity from one point to another
- **Kilowatt Hour** – the amount of power (kilowatts) consumed over 1 hour



Reduce Your Electrical Usage!

- Now that you know what goes into electricity, you can get smart and reduce your usage
- By being aware of devices that use less energy, you can save money by replacing electrical items and having the savings pay you back.

