Current Electricity

- The continuous flow of charge in a complete circuit is called current electricity.
- Electric current is defined as the amount of charge passing a point in a conductor every second
- Electric current is measured in **amperes (A**)
- Small currents are measured in milliamperes (1000 mA = 1 A)

Resistance and Ohm's Law

- Resistance is theproperty of any material that slows down the flow of telectrons and converts electrical energy into other forms of energy.

- Electrical resistance is the ratio of the voltage to the current.
- The unit of measurement for electrical resistance is the **ohm (Ω)**
- The mathematical relationship for ohm's law compares:
    - Voltage (V) - measured in volts (V)
    - Current (I) - measured in amperes (A)
    - Resistance (R) - measured in ohms (Ω)

Ohm's Law: $R = \frac{V}{I}$ It is more commonly written as $V = IR$

We use the formula as shown below:

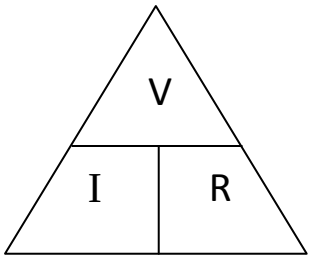
What is the resistance of a flashlight bulb if there is a current of 0.5A though a lightbulb when connected to a 1.5V battery?

What you need to know: R = ?
What you already know: V = 1.5V
I = 0.5A

Solve: $R = \frac{V}{I} = \frac{1.5V}{0.5A} = 3.0\Omega$

Answer: The resistance is 3.0Ω

If you're asked to find resistance use $R = \frac{V}{I}$
If you're asked to find resistance use $V = IR$
If you're asked to find current use $I = \frac{V}{R}$



The formula triangle