RESISTANCE – CONNECTION BETWEEN VOLTAGE AND CURRENT

_____ will flow if a _____ is applied to the circuit.

= electrons will move if they are _____.

The same voltage does **NOT** always produce the same current due to _____.

RESISTANCE - how _____ it is for electrons to flow through the material

  - measured in a unit called _____(Ω) by using an _____.

RESISTOR - any _____ that decreases the flow of _____ in a circuit.

Ex. Any kind of _____

Ex. Compressed carbon resistors use _____ to indicate the resistance that they provide.

Each colour has a given number value:

Colour	Value
Black	0
Brown	1
Red	2
Orang.	3
Yellow	4
Green	5
Blue	6
Violet	7
Grey	8
White	9

1st Band =

2nd Band =

3rd Band =

4th Band =

Gold = $\pm$ 5%

Silver = $\pm$ 10%

No band = $\pm$ 20%

Resistance

No. of 0:s following

Tolerance
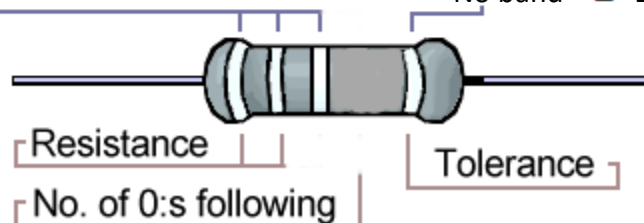
Example: Red Black Red →

Practice:

1. Blue Orange Red Silver →

2. Yellow Yellow Orange Gold →

3. Grey Green Yellow →

4. White Red Red Silver →

5. Blue Green Red →

OHM'S LAW-

A scientist named George Ohm conducted experiments with circuits and determined that there is a **relationship** between **voltage**, **current and resistance.**

His work lead to the creation of _____.

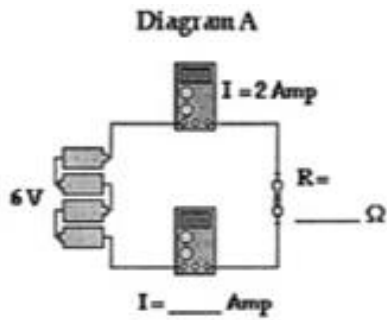| OHM'S LAW	Symbols	Unit	

Important Points about Ohm's Law:

1.   If you _____ voltage, current will _____ (if resistance remains constant)

2.   If you _____ resistance, current will _____ (if voltage remains constant)
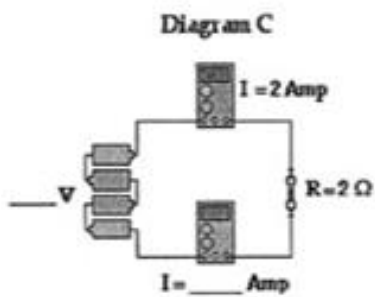
PRACTICING OHM'S LAW

1.   An electrical device with a resistance of 3.0 Ω will allow a current of 4.0 amps to flow through. What is the voltage across the device?

2.   When a voltage of 120 V is used across an electric heater, a current of 10.0 amps will flow through the heater if the resistance is _____ Ω.

3.   A flashlight that is powered by 3 V and uses a bulb with a resistance of 60 Ω will have a current of _____ Amps.

4. Determine the missing values:

Diagram A

I = 2 Amp

R =

6V

R =

_____ Ω

I = _____ Amp

R = _____ Ω

I = _____ A

Diagram C

I = 2 Amp

V

R = 2 Ω

V = _____ V

I = _____ A

I = _____ Amp