



# Richmond Minorities in Engineering Partnership

**2016 Phase I - VSU**

**Mr. J. E. Odom, Instructor**

**Ms. Taylor McMichael - Instructor Aide**

# Phase One - Week One

bit 0,1  
Byte = 8b

00000100

Binary ↔ Decimal

Oct ↗  
Hexadecimal  
6 + 10 = 16

msb  
0b 0110010110  
lsb  
0x 696  
Binary  
Hex  
0x 0A D  
Hex  
Binary

Hex 0 1 2 3 4 5 6 7 8 9 A B C D E F  
8 4 2 1  
Binary  
2<sup>4</sup>=16

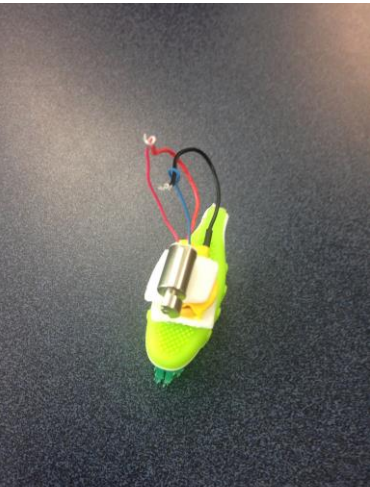
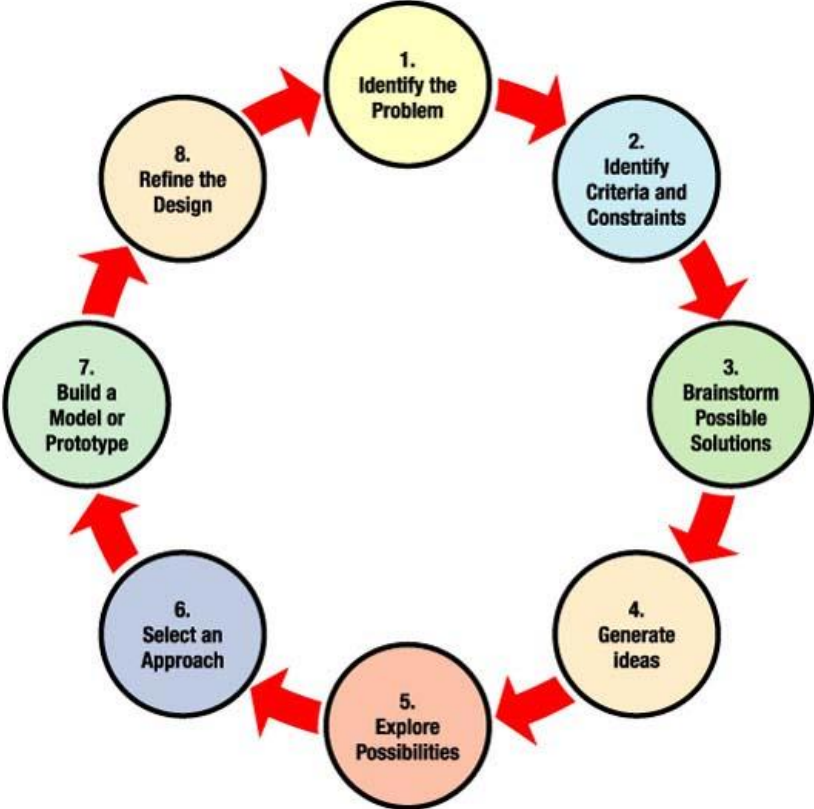
Binary	ASCII
000000	A
000001	B
000010	C
000011	D
000100	E
000101	F
000110	G
000111	H
001000	I
001001	J
001010	K
001011	L
001100	M
001101	N
001110	O
001111	P

Binary	ASCII
010000	Q
010001	R
010010	S
010011	T
010100	U
010101	V
010110	W
010111	X
011000	Y
011001	Z
011010	a
011011	b
011100	c
011101	d
011110	e
011111	f

Binary	ASCII
100000	g
100001	h
100010	i
100011	j
100100	k
100101	l
100110	m
100111	n
101000	o
101001	p
101010	q
101011	r
101100	s
101101	t
101110	u
101111	v

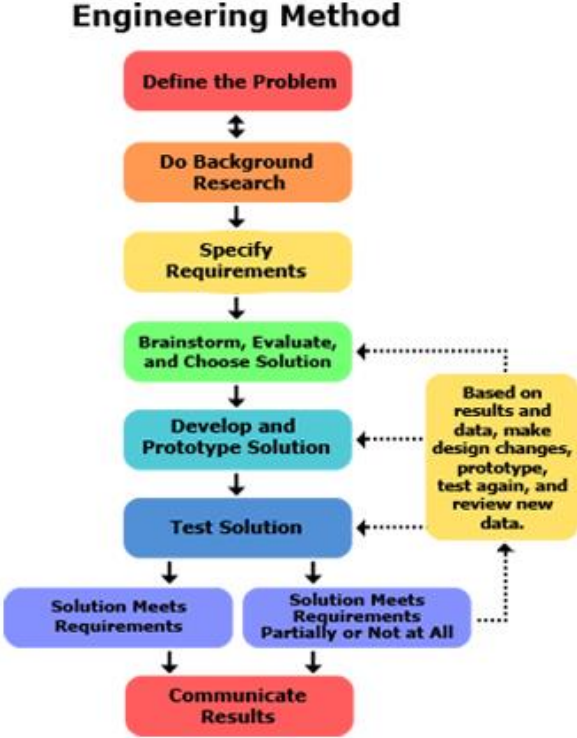
Binary	ASCII
110000	w
110001	x
110010	y
110011	z
110100	0
110101	1
110110	2
110111	3
111000	4
111001	5
111010	6
111011	7
111100	8
111101	9
111110	+
111111	/

# ENGINEERING DESIGN PROCESS



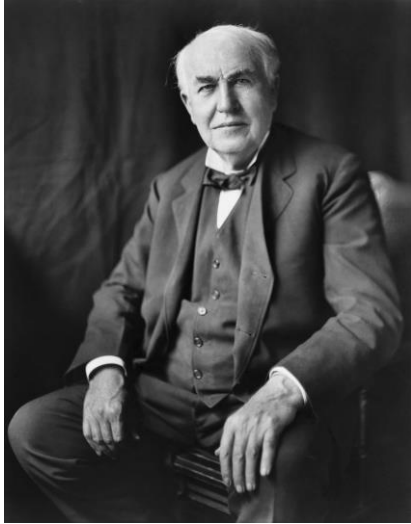
# COMPARE & CONTRAST OF EDP & SCIENTIFIC METHOD

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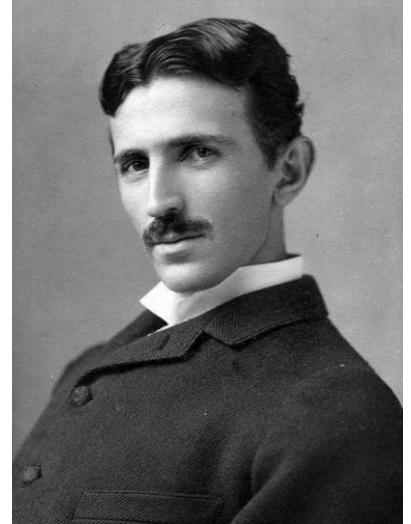


# Electrical History

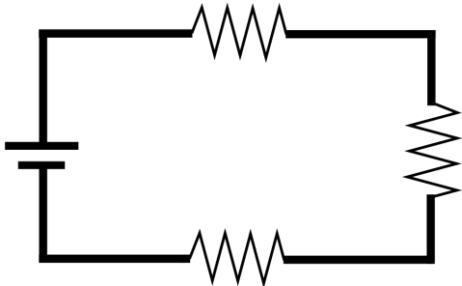
THOMAS ALVA EDISON



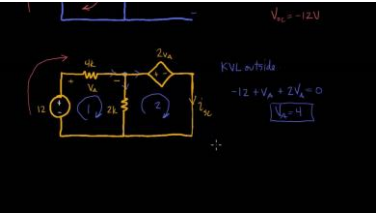
NIKOLA TESLA



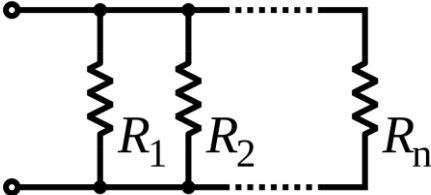
# Electrical Circuits



OPEN Circuit



Closed Circuit



# Electrical Terms

— — —

Conductor

Insulator

Electron

Electronic

Electricity

Static

Resistance

Bit

Byte

Alternating Current

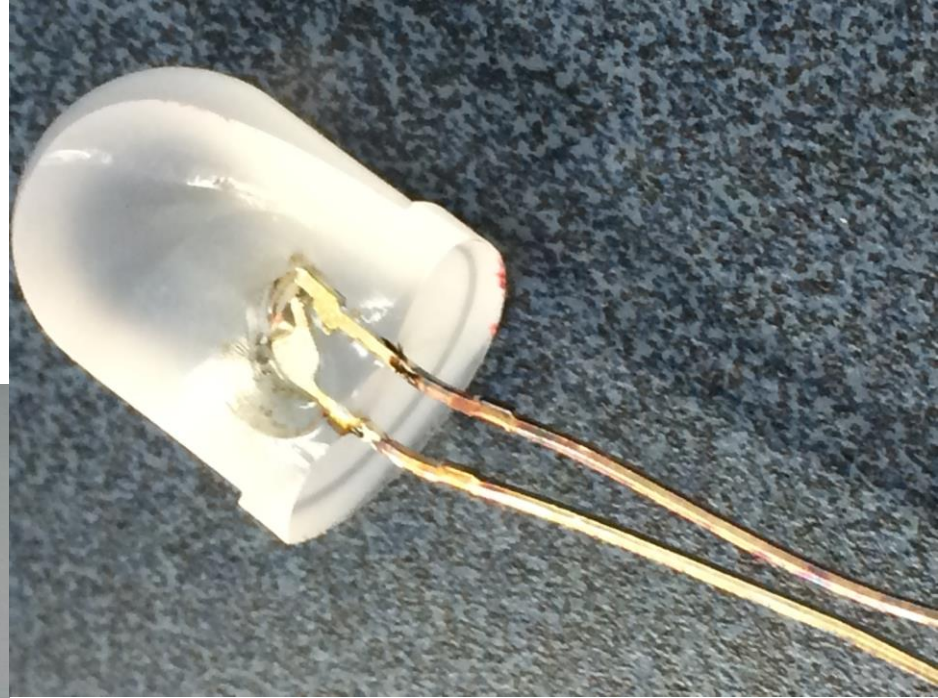
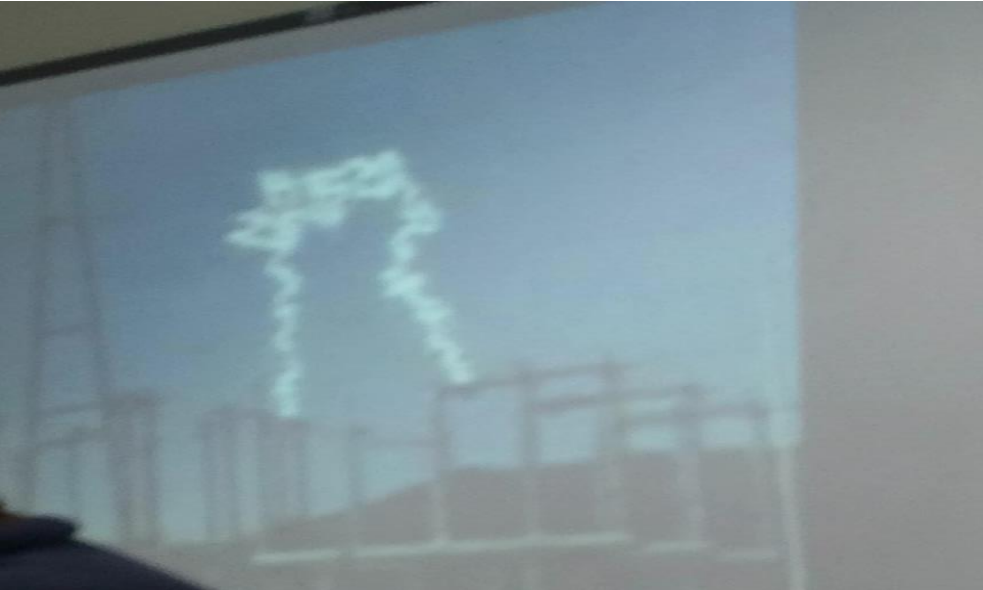
Direct Current

Ohm's Law

Current

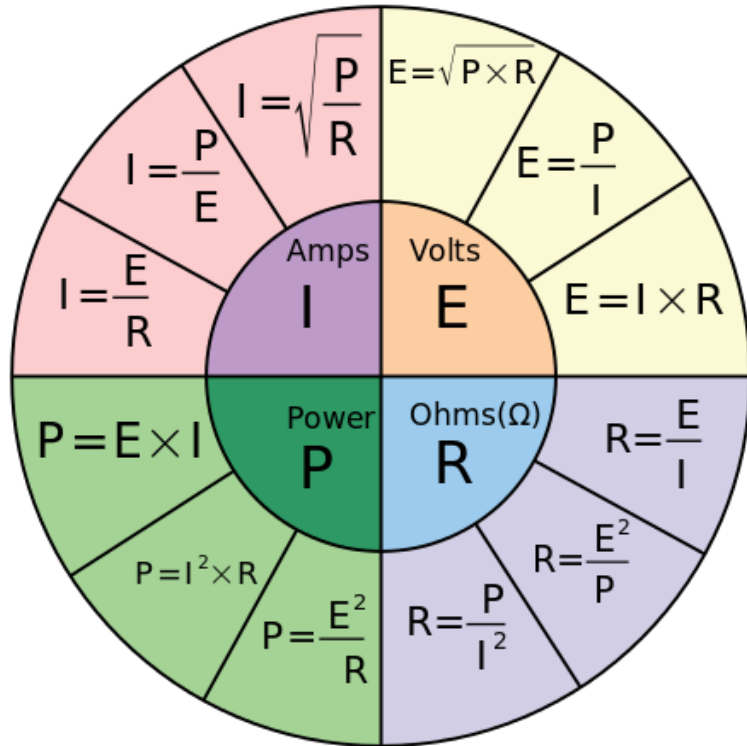
Voltage

# Electrical Safety



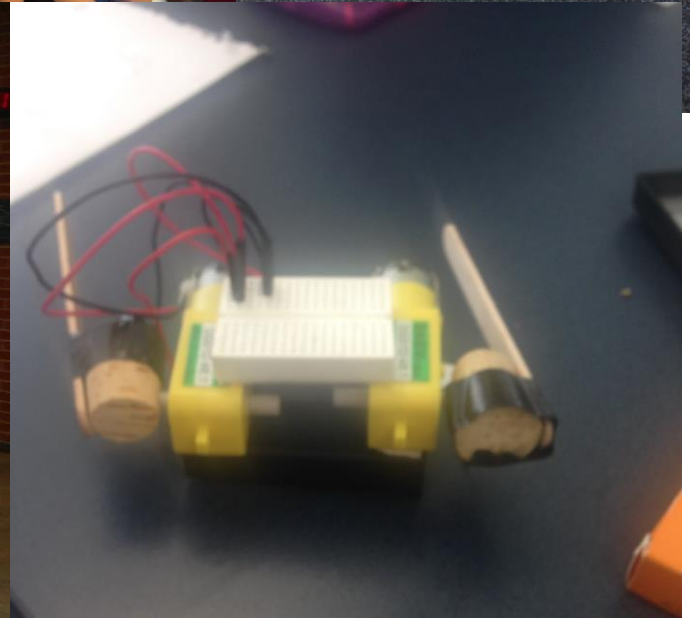
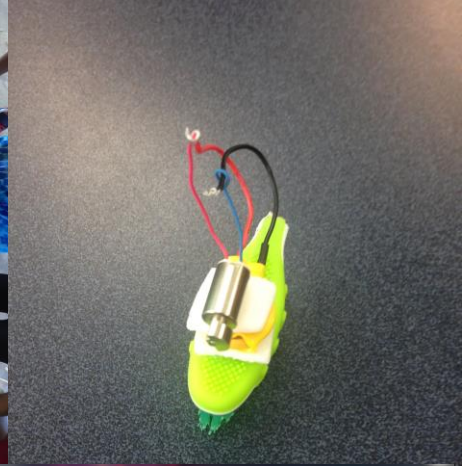
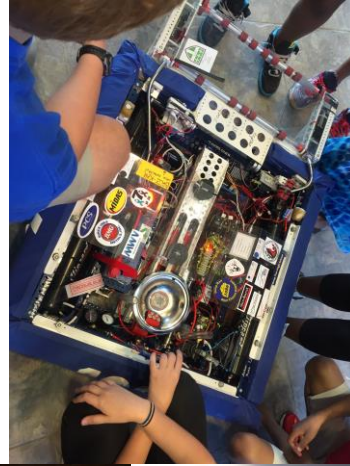


# OHM'S LAW



# ROBOTICS

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# Phase I Summary Perspective

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# Phase One Theme Song - Squishy Circuits

Chorus:

We LEARNED about squishy circuits x8

Put cords(wires) together it lights up the squishy circuits and it lights up! Black cords is negative. Red cords are positive. 2 batteries in a pack. Of mine work don't get mad cause I'm not goin get sad! I need a break! I need a Big Mac back to work need to stay in tack ran off on it back to back touch the wire and you'll get zapped I'm so hungry I need a snack phase one is A1 phase 2 ain't make nun phase 3 can't say nun this rap ain't take nun .

Chorus:

We LEARNED about squishy circuits x8