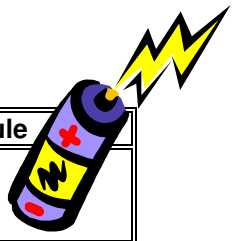
Unit 13 Plan: ***Current Electricity***
Physics1 @ PalmHarborUniversityHigh



Day	Date	Topic	Assignments Due / Schedule
1		Chapter 22.1 Notes **CW# 1**: p. 598: 6 – 10	Read all of Section 22.1
2		Video: *Electricity Shorts #4,5,6*	**HW# 1**: p. 594: 1-5
3		Resistance, Circuits, Pre-lab **CW# 2**: p. 600: 12-16	**HW# 2**: p. 611: 61,62,68,70,81
4		Ohm's Law Lab	
5		Finish/Review Lab	Read Section 22.2
6		Using Electrical Energy Notes **CW# 3**: p. 603: 23-26 p. 605: 28 – 29	Finish classwork
7		Review problems Worksheet	**HW# 3**: p 610: 39,44,45,46,47,49,52-57,59
8		Review concepts	**Appliance Homework Due**
9		Unit Test	

Note: *Homework is due on the day following the assignment, unless otherwise noted.*

Objectives / **Essential Learnings**: (key terms in **bold**)

1. Describe the flow of electric charge. Define an electric ***current*** and the ***ampere***.
2. Give examples of voltage sources that can maintain a potential difference in an electric circuit.
3. Describe the factors that determine the ***resistance*** of a wire.
4. Describe ***Ohm's Law***. Solve problems involving **current (I)**, **potential difference (V)** and **resistance (R)**
5. Explain why wet skin increases the likelihood of receiving a damaging electric shock when a faulty electrical device is touched.
6. Distinguish between ***direct current*** and ***alternating current.***
7. Compare the motion of electrons in a wire carrying alternating current to the flow of energy through the wire.
8. Relate the ***electric power*** used by a device to current and voltage.
9. Differentiate between ***power*** and ***energy*** in an electric circuit.
10. Diagram simple electric circuits.
11. Define the ***kilowatt hour***; solve problems involving the use and cost of electrical energy.
12. Explain how heaters convert electrical energy to thermal energy.
13. Describe the reason for the use of high-voltage lines for transmitting electrical energy.

Elementary charge (one electron (e))
= **1.60 x 10 $^{-19}$C**

Ohm's law $I = \frac{V}{R}$ $R = \frac{V}{I}$ $V = IR$

$$\textbf{\textit{Power}}\,(\boldsymbol{P}) = \boldsymbol{IV} = \boldsymbol{I^2R} = \frac{\textbf{\textit{energy}}}{\textbf{\textit{time}}}$$

Electrical Quantity	*Symbol*	*SI unit*	*Symbol*
Force			
Charge			
Field strength			
Electric potential energy			
Electric potential			
Current			
Resistance			
power			
Electric energy			