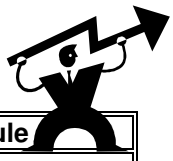
Unit 5 Plan: ***Vectors***
Physics1 @ PalmHarborUniversityHigh



Day	Date	Topic	Assignments Due / Schedule
1-2		Intro to Vectors Vector addition, graphical method Vector In-class Problems (**handout #1**)	Read Section 5.1 Finish class problems
3-4		Trig Review (handout) Vector addition, analytical method Vector In-class Problems (**handout #2**)	Finish class problems
5		Vector Resolution Vector In-class Problems (**handout #3**)	Read Section 5.3 Problems: TBA
6		Forces on an Inclined Plane Notes and Worksheet (**handout #4**)	
7		Inclined Plane Mini-lab	
8		Equilibrium Adding vectors at any angle using components Vector In-class Problems (**handout #5**)	**HW#1** Problems: p. 142: 95, 97, 98
9		Force Table Lab	Problems: TBA
10		Finish Lab Start review (**handout #6**)	**HW#2** Problems: p 140-141: 48-51, 60-63, 65, 66, 68, 77
11		Review / Review X-word	
12		Unit Exam	

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

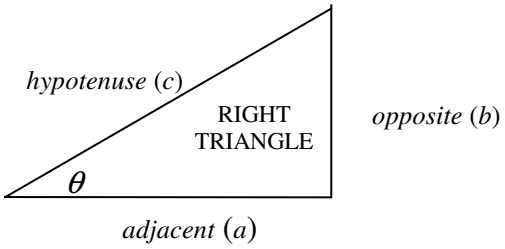
Objectives / **Essential Learnings**: (key terms in **bold**)

1. Distinguish between a **vector** quantity and a **scalar** quantity, and give examples of each.
2. Show the ability to add vectors by the **graphical method**; recognize that order of vector addition does not matter.
3. Recognize the independence of perpendicular vector quantities.
4. Specify the proper method of resolving vectors (**vector resolution**) into perpendicular **components**; be able to choose axes and resolve vectors graphically and analytically.
5. Solve for the sum of two or more vectors analytically by adding the components of vectors.
6. State the requirements for **equilibrium**.
7. State the meaning of **equilibrant**, differentiating between **resultant** and equilibrant.
8. Be able to solve for an angle using trig relations.
9. Be able to specify axes, resolve vectors, and solve **inclined plane problems**.

$$c^2 = a^2 + b^2$$

$$\sin\theta = \frac{\textbf{opposite}}{\textbf{hypotenuse}} \qquad \cos\theta = \frac{\textbf{adjacent}}{\textbf{hypotenuse}}$$

$$\tan\theta = \frac{\textbf{opposite}}{\textbf{adjacent}} \qquad \theta = \tan^{-1}\frac{\textbf{opposite}}{\textbf{adjacent}}$$



Equilibrium: $\boldsymbol{F_{net}} = 0$

$$\boldsymbol{F_g = mg} \qquad \boldsymbol{F_{net} = ma} \qquad \boldsymbol{F_f = \mu F_N}$$