*Physics First*

*FINAL STUDY GUIDE*

* The final exam will include but not be limited to the following concepts, vocabulary and formulas. Be sure to review all vocabulary terms.
* You will be allowed to use your formula flipbook so be sure it is up to date. You may also use the pink reference sheet given to you in the beginning of the year.
* Get organized!! Review past quizzes and power-points. Rewrite notes, make flash cards etc.
	+ **Remember to bring:**
		- **Calculator**
		- **Formula flipbook**
		- **Optional: Pink NECAP reference sheet**
		- **Textbook ready to be returned**

**Unit 03: Applications of Newton’s Laws**

*Textbook p. 151- 153 Reading from Earth Science handout*

* Life cycle of stars
* Describe the relationship between gravitational force, mass and distance
* **F = G ( m1m2/d2)**
* The force of gravity is directly related to the mass and inversely related to the square of the distance.

**Unit 04: Mechanical Energy**

*Textbook 3.2*

* Describe the changes in energy (transformation) that occur in different systems.
* Know how energy is conserved during these changes
* Know how to calculate and analyze formulas for Kinetic Energy & Potential Energy
* Useful Formulas:
	+ momentum, **p = mv**
	+ potential energy $E\_{p}=mgh$
	+ kinetic energy $E\_{k}=1/2mv^{2}$
	+ Total Mechanical Energy $TME\_{}=E\_{p}+E\_{k}$

**Unit 06: Waves**

*Textbook 19.1, 20.1, 20.2, 20.3, 24.1*

* Know the four wave interactions and be able to explain the difference between them.
* Period & frequency $t= \frac{1}{f}$$f= \frac{1}{t}$
* Know the relationship between frequency and wavelength $v=f ʎ$
* Know the two types of wave patterns
* Identify the different kinds of electromagnetic waves
* Know the relationship between the speed of light constant, frequency and wavelength.
* Explain what the Doppler Effect is and how it affects the sound of an object moving toward and away from an observer.
* The Big Bang theory in addition to being familiar with the evolution of theories of the universe.

**Unit 05: Earth Processes**

*Textbook Modern Earth Science Supplemental Reading*

* Know the three different plate boundaries
* Geological formations that occur at each plate boundary
* Hot Spots
* Understand the transfer of energy that occurs via the convection currents in the mantle