AP Physics

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Course Description:
Physics studies questions related to matter and energy, and utilizes mathematics to predict the behavior of matter and energy. AP physics is meant to match an introductory semester long college course. The AP curriculum is based on standards set forth by the College Board. This course is an algebra based, instead of calculus, course that would align to a first semester college course. We will be using a college-level textbook, and the rigor of the course will subsequently be higher than a typical high school physics course. Despite the fact that most students who are looking to major in a engineering or physical science will be required to take a calculus-based course, this class should lay the framework for success in future courses.

Due to the rigor and depth of this course, there may be times when you will be asked to cover material on your own to prepare for a subsequent lesson or concept. If you have questions though, never hesitate to ask or request additional supportive supplemental materials.

Students' success will be easier if you appreciate that this course will be taught at the college level and will in general require 1-2 hours of study time per class period. Students who are not prepared to invest this effort and time commitment are urged not to enroll in AP Physics.

Topics Order: (Tentative and subject to change)

- Introduction to Scientific Thinking and Mathematical Models
- 1D Kinematics
- 2D Kinematics
- Dynamics
- Energy and Conservation of Energy
- Impulse, Momentum and Conservation of Momentum

Semester II

- Uniform Circular Motion, Rotational Motion & Universal Gravitation
- Electrostatics
- DC Circuits
- Oscillations
- Waves
- Test Prep

Text: Physics. James S. Walker - 4th Edition

Supplies: binder, notebook/paper, scientific calculator (graphing not needed), writing tool, charged iPad, and colored pencils (recommend at least 3 colors)

Classroom Rules (all handbook rules apply):

1. Follow directions and come to class prepared: writing utensil, homework/notes, paper, calculator, charged iPad
2. Maintain a productive learning environment, including using the iPads appropriately

3. Respect yourself and others, including not talking while others are speaking.
4. Be in your seat, with homework out and iPad closed, before the bell rings.

Homework:
Homework is given as a means of practice and may not always be collected for a grade. It is your responsibility to complete all of the homework on time.

- For a computational problem, you must show ALL work and include UNITS to earn credit.
- Due at the beginning of the hour unless otherwise noted.
- All assignments must include your name and the date at the top of the page.
- All late work is accepted for 80% credit.

The purpose of homework is to reinforce what was taught in class and to check your understanding of the material. Completing your own homework is vital to your comprehension. If an assignment is difficult, ask me for help. Some homework may introduce new material. Reading the book will be important in the next class discussion and your understanding of the new material.

Missing a Class
You are responsible for handing in any work that was due during the missed class the first day you return. You are also responsible for checking with the teacher (emailing works well), accessing Schoology, and asking a classmate about missed assignments. You can get handouts from a peer or the teacher. Your make-up days for assignments are described in the handbook.

Labs:

Missing a Lab: Most labs cannot always be made up if missed. A handout will be distributed that outlines what students must do to receive a grade for the missed lab.

Grading
AP Physics will be graded on total points. I expect that you will do your homework for your own benefit and that quizzes will help better prepare you for tests. You will have labs that require both your participation and a formal write-up in this class.

Cheating, copying, or "sharing" will NOT be tolerated. Any behavior of this type may result in a grade reduction or zero for all persons involved.

Overall Message
The best way to succeed in physics is to ask questions, participate fully, take notes, attend class, and complete assignments. I also additionally feel that reading assigned text is vital to your success. ***If you need help, please ask.*** *I am available before and after school and during my prep periods.*