Welcome to AP Physics! Physics is the most fundamental of the sciences, and the most mathematically rigorous. This course is an introduction to classical mechanics, the study of the motion of macroscopic bodies and their interactions. In addition, it places emphasis on building problem-solving skills that are essential for future success in any STEM field. It is intended to be equivalent to the first semester of college-level physics that would be taken by a future physics major. I am looking forward to exploring this rewarding subject with you this year!

The purpose of the summer assignment is to review some mathematical and scientific ideas so they will be fresh in your mind for the start of the school year. Some of it may be presented from a different perspective than what you have previously seen, and you are expected to work through the concepts, rather than having them stated for you. You are strongly encouraged to work with other students in the class; discussion with someone else often clarifies a point of confusion. Your answers should reflect your own understanding, though; plagiarizing from a classmate or an outside source is not acceptable. If you don’t understand how to do something you should discuss it with me. My email address is nreden@bancroftschool.org; feel free to contact me at any time.

Assignments will be posted on Showbie in addition to here. They may be completed in Notability or a similar program, or on paper that is then photographed or scanned. Homework 1 may also be done in \LaTeX\ if you are so inclined. In any case they must all be submitted on Showbie before the start of our first class meeting. If you have not been added to the Showbie class by the beginning of August, please let me know.

The assignment consists of a handout, a video lecture, and a set of problems (homework 1). They should be completed in order, as detailed below. The handout contains several numbered problems interwoven through some reading and it will be checked for completeness, not accuracy. It is intended to be useful as notes, though, so you should still endeavor to get things right. After completing the handout you will watch a video lecture that complements it. You may find that seeing another take on the subject clarifies your understanding; if so, go back to the handout and adjust your answers. Homework 1 will also be checked for completeness rather than accuracy; we will go over both in class when classes begin. You should also expect a quiz or other assessment on this material sometime in September. The material in this assignment includes most of chapter 1 of your textbook, but the textbook is not necessary to complete it.

Please do not start this assignment before August; you want the material fresh in your mind at the beginning of the school year. You will probably want to spread it out over a week or two, starting in mid-August.
Complete, in order:

1. Handout 1: preliminaries

2. Video lecture: https://www.youtube.com/watch?v=GtOGurrUPmQ (also linked at the end of handout 1)

3. Homework 1: preliminaries

   Again, if you have any questions (or comments or complaints), contact me at any time at nreden@bancroftschool.org. Have a great summer, and I’ll see you in the fall!

   —Dr. Reden