AP Physics 2

Summer Assignment – 2024

Mr. Beck

Dear AP Physics 2 Students:

Welcome to AP Physics. We are excited to offer this new science course to TKA. We will learn about many interesting topics including thermodynamics, electricity, waves, optics, and quantum mechanics that are often not able to be covered in-depth in a high school science program. This Algebra-based Physics course will be a great college-level foundational study for students interested in going into a wide variety of STEM-based fields, including engineering, biology, medicine, and of course physics itself.

AP Physics 2 requires the completion of a summer assignment that is due on the first day of school. It is vital that you complete this summer assignment and understand the skills needed for this course. The intention of this assignment is to introduce the major methods and problem-solving techniques of physics, review the principles of Newton's Laws and forces from the Mechanics side of physics, and help ensure that students are placed in the appropriate course.

There will be a quiz in the first days of school over the topics covered in the summer assignment. If you fail to complete all requirements of the summer assignment or if you earn below 60% on the quiz, you will be asked to transfer into another class.

Instructions:

Access excerpts from *College Physics*, from Bedford, Freeman, and Worth (BFW) publishers, © 2023:

Chapter 1 | Chapter 4A | Chapter 4B | Appendix: Trigonometry

Suggested Assignment:

- Read through each chapter
- Define main ideas and all **bold** vocabulary words.
- Follow along and work the example problems in the main text of the chapter
- Answer the AP Building Block and Skill Builders questions at the end of each lesson
- If you are entering Precalculus or a similar level math class this year, you may want to read and work through the M-8 Trigonometry Appendix before reading Chapter 4

Required Assignment:

Chapter 1 Review Problems:

- Page 26-27 #4, 12, 15, 17, 21

Chapter 1 AP Practice Problems

- Page 28 Multiple-Choice Questions #1-5*
- Page 29 Free-Response Question #1a-e.

Chapter 4 Takeaway and Review Problems:

- Page 160 #6a-g
- Page 161 #10, 11
- Page 189 #10

Chapter 4 AP Practice Problems:

- Page 193-4 Multiple Choice Questions #1-7*
    - On #6, use $v^2 = v_0^2 + 2ad$ and let $v = 0$ to solve for the acceleration. Examples 4-3, 4-5, 4-6, and 4-10 in the main text of the chapter will help with the set-up.
- Page 194 Free-Response Questions #1a-c

*Multiple choice questions must be completed with all work shown – only an answer choice selected is not sufficient.

I will be available over the summer to help students via e-mail: sbeck@tka.net. Please allow time for a response. I look forward to meeting you in August!

Sincerely,

Mr. Beck