

AP Physics Summer Assignment, 2011

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Unit A) Reflection, Refraction, Lenses, & Interference

Chapters 29-31, Hewitt

Chapters 25-27, Cutnell & Johnson

Unit B) Electrostatics and Electric Current

Chapters 32-34, Hewitt

Chapters 18-19, Cutnell & Johnson

Unit C) Electric Circuits and Magnetism

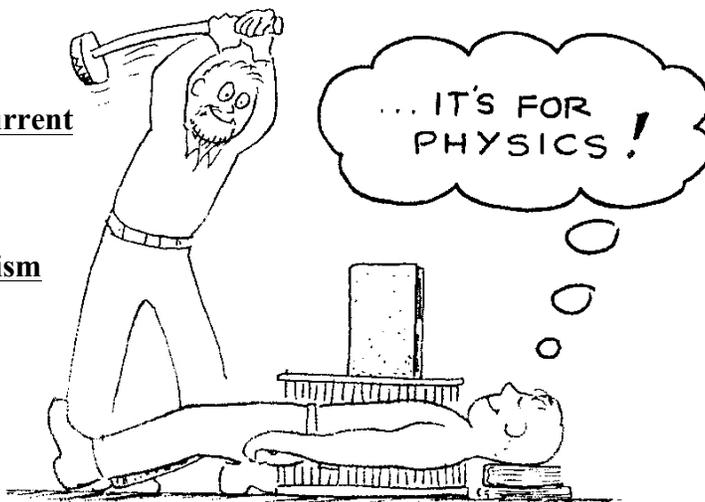
Chapters 35-37, Hewitt

Chapters 20-22, Cutnell & Johnson

Unit D) Atomic and Nuclear Physics

Chapters 38-40, Hewitt

Chapters 29-31, Cutnell & Johnson



1) Every student is responsible for becoming an “expert” on one of the units listed above. Your birthday determines your unit, as follows:

If you were born January/February/March = Unit A

If you were born April/May/June = Unit B

If you were born July/August/September = Unit C

If you were born October/November/December = Unit D

2) **As soon as possible--preferably today-- email me your name, phone number, and your assigned unit.** This will enable me to communicate with you via email. Students who have not completed Physics 1-2 are responsible for reading the *entire* Hewitt text (except Chapters 1, 17-20 provided you’ve completed Chemistry). You are expected to complete hand-written reading notes for each chapter that are due the first day of school, August 16, 2011.

3) You are to create a presentation using either PowerPoint or Keynote that serves as an introduction to a major topic in your unit (A, B, C, or D) to your fellow students. It must consist of at least 10 slides but no more than 15. It should incorporate illustrations/graphics from the Internet, your own personal photographs, and at least one video clip from *YouTube* or some other source (your own are OK). List references/sources for all items that do not come from either Hewitt or Cutnell and Johnson. The presentation should include the key ideas, concepts, formulas, and vocabulary from your unit. It should also have at least one Hewitt-like “Plug and Chug” example, and one worked-out solution to a problem from the back of the chapter in Cutnell & Johnson (of moderate difficulty). It should be clear from viewing your presentation why this topic is important to know and how it relates to our everyday world. Finally, the presentation slides must be interesting and easy to read.

4) To make typing equations easier in both Word and presentation software, paste one of the following links into your browser and download *MathType 6*. The school has paid for a site license that entitles all San Mateo High School students to use it. This is a great program—I've used it for years and wouldn't dream of writing another book without it!

For Mac computers:

http://www.dessci.com/en/products/MathType_Mac/

For Windows-based computers:

<http://www.dessci.com/en/products/mathtype/>

After you download the file, email me at pablo@laserpablo.com for the key.

5) *WebAssign* is an online homework/assessment system that is specifically collated to your textbook. When you submit an answer, you get immediate feedback. I normally set the number of submissions to 5, so if you don't get it right the first time you get more attempts without penalty. It also keeps score. I will email you when an assignment is posted. You are also expected to donate \$15 for the cost of the service. I'll collect donations the first day of school.

1) Go to the following website: <http://www.webassign.net>

2) Click on "Log-in"

3) Click "I Have a Student Key"

4) Enter the following information:

(a) **Username**—create something simple that you can remember

(b) **Password** (choose something you can remember—don't forget it!). Write it down in a secure place where you can easily find it.

(c) **Institution**—enter "sanmateo.ca" and the key# **6203 1803**

6) Bottom Line: Your Summer Project is due the first day of school, August 16th. Check my website for updates. You can bring your presentation on a flash drive. Large files (more than a GB) can also be easily transferred to me using my *Mobile Me* account. More on that later.

7) Find a scene from a movie that illustrates good and/or bad physics. Keep your scenes down to a few minutes or less. Bring the scene either on a DVD or thumb drive and explain why it is good or bad physics.

8) Also, as a member of AP Physics, you automatically become a member of Physics Club, which entitles you to special privileges including but not limited to special projects, field trips, meeting physics celebrities, and other exciting events. One of our projects this year has been to refurbish my old laser light show. We plan to continue this next year. Other students are doing research on the physics of baseball. If you have the time and interest you may want to work on one of these projects and also receive Independent Research credit. If interested, you should email me right away for more information.

Have a great summer!

PS If you're a Giants Fan, you may want to checkout my Giants website: www.paulstickets.com
If not, consider becoming one!