

# *AP Physics Summer Assignment, 2009*

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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) **Preferably today, but no later than June 6<sup>th</sup>, email me your name, phone number, and your assigned unit.** This will enable me to communicate with you via email. All students are to complete the *Conceptual Physics Workbook* and read the corresponding chapters. Students who have not completed Physics 1-2 are responsible for reading the *entire* Hewitt text as well as completing the *Conceptual Physics Workbook*.

3) By August 18<sup>th</sup>, you are to create a PowerPoint® presentation (PPT) that serves as an introduction to 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 PowerPoint 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 PowerPoint slides must be interesting and easy to read.

4) To make typing equations easier in both Word and PowerPoint, 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/](http://www.dessci.com/en/products/MathType_Mac/)

After you download the file, email me for the key.

**For Windows-based computers:**

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

After you download the file, email me 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 \$10 for the cost of the service. I'll collect donations the first day of school.

1) Go to the following website: [www.webassign.net](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# **1050 0964**

**6) Bottom Line: Your Summer Project is due the first day of school, August 17<sup>th</sup>.** Check my website for updates. You can bring your PPT on a CD/DVD or flash drive.

7) 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. Our laser light show group will be working during the month of June and it would be best if you could join them then

Have a great summer!

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