LAB REPORT GUIDELINES AP PHYSICS B

(Mr. Elert wrote this document. I have made some slight modifications to suit my lab report requirements. H. Spergel)

FORMAT

1. Cover Page [5%]: Write the title and number of the lab in the center of the page. Write your name, partners' first names and class code with section number in the bottom right hand corner of the page. Staple your report once in the upper left hand corner. Do not use report covers or folders.

2. Abstract [5%]: Write a brief statement of what you were verifying, measuring, determining, *etc.* in the form of a purpose or goal. Once sentence should suffice. Your goal is never to "prove" something, as it is only possible to disprove scientific theories.

3. Introduction [10%]: Provide some background to the experiment: concepts, terms, formulas, *etc.* Indicate what information you want to obtain in this experiment. Present your information in a logical order.

4. Diagram [5%]: Make a rough, labeled sketch of the assembled apparatus. Include labeled schematic diagrams when needed. (Vector or circuit diagrams, for example.)

5. Procedure [10%]: Explain in your own words how you will obtain the measurements for the variables you need. You do not need to give a complete, step-by-step, procedure. Just give a general description of your activities. Gathering or putting away equipment, calculating results and writing a report are not part of a lab procedure.

6. Analysis [40%]: Explain what the data means in words and show how to extract this meaning using mathematics. Items used in analysis can include (but are not limited to) the following:

- a data table showing the original data collected and the results calculated
- the equation used in your calculations
- a graph with a best fit curve and coefficients
- a descriptive test to tie the whole thing together

7. Conclusion [10%]: Summarize what you accomplished through your analysis. Respond to the purpose of the lab as stated in the abstract. One sentence is usually enough.

8. Sources of Error [10%]: Errors are not mistakes. They would arise even if the experimenters were extremely careful. Consider the assumptions made in the theory and the materials and methods used to do the experiment. Identify at least two factors that result in experimental error. Be specific. Avoid generalities.

9. Raw Data [5%]: This is the actual paper containing the information that was gathered during the lab itself. Transcriptions or photocopies are not allowed. Staple it to the back of your report. Do not rewrite it. Neatness is not crucial. Honesty is.

GRADING

- The total weight of each section is written in square brackets. Lab reports will be carefully graded, with comments on style and substance. Be concise and accurate. Don't waste our time with long-winded ramblings and nonsense. Demonstrate good writing skills.
- A bonus of 5% will be added for reports that are computer generated, that is printed on paper. Reports that are converted into a single pdf and emailed will only be accepted with prior approval. No grades over 100% will be awarded.
- Computer generated reports should be typed double spaced, in a size 12 standard font and printed in black text. You may use color to highlight something, but if you print it in a way that I can't read, I won't. You will get it back to redo and then it will be late!
- Formal lab reports are due **one week** after the day of the lab activity unless otherwise indicated. Meet this deadline! Reports handed in after the deadline will be penalized a minimum of 10%. Reports submitted after the on-time reports have been graded and returned will not be accepted.

REGENTS REQUIREMENTS

- Pursuant to Section 207 of the Education Law and Section 8.2(c) of the Rules of the Board of Regents, all students taking the Regents exam in Physics must spend a minimum of 1200 minutes engaged in hands-on laboratory activities and submit satisfactory reports of their laboratory experiences. Anyone who does not meet this requirement will be barred from the Regents.
- You must retain all of your lab reports and then submit them to me at the end of the year as proof of eligibility.

Top Ten Stylistic Errors I Never Want to See in a Lab Report Again

1. Wishy-washy phrases
    - "might have"
    - "may have"
    - "could have"
    - "should have"
    - "possibly"
    - "sort of"
2. Nonspecific excuses
    - "old equipment"
    - "outdated equipment"
    - "bad equipment"
    - "dirty equipment"
    - "not enough time"
    - "inadequate time"
    - "human error"
3. Space filling sentences
    - "Before beginning this lab we must define terms."
    - "There were many sources of error in this lab."
4. Any sentence using the word "data"
    - "We wrote down the data."
    - "We used the graph to get the data."
    - "This is a graph of our data."
    - "Then we analyzed our data."
5. Pretty much any phrase containing the words "wrong" or "right" (except when referring to a "right angle")
    - "We measured wrong."
    - "We did not use the ruler the right way."
    - "We wrote down the wrong numbers."
    - "We did not calculate the right answers."
    - "The measurements caused us to calculate the wrong answer."
6. Spelling errors that won't be caught by a spell checker
    - "fro" when you mean "for"
    - "till" when you mean "until"
    - "angel" when you mean "angle"
    - "trails" when you mean "trials"
    - "censor" when you mean "sensor"
    - "photo gate" when you mean "photogate"
    - "than" when you mean "then" (or vice versa)
    - "weight" when you mean "weigh" (or vice versa)
    - "of" when you mean "have" (or vice versa)
7. Words that confuse science with mathematics
    - "prove"
    - "proves"
    - "proven"
    - "proved"
    - "proof "
    - "proofed"
8. Words that assume science is the pursuit of perfection
    - "exactly", "exact", or "inexact"
    - "perfectly", "perfect", or "imperfect"
    - "precisely", "precise" or "imprecise"
    - "possibly", "possible" or "impossible"
    - "accurately", "accurate" or "inaccurate"
9. Comparative statements that don't make a comparison
    - "The force of friction was greater." (Greater than what?)
    - "The mass was more." (More than what?)
10. Netspeak
    - "u"
    - "r"
    - "lol"
    - ":-("