

# AP Physics Lab Experiment Report Format

All lab reporting should be done directly in the lab notebook. Prepare as much as possible prior to the actual lab day (Parts I through V below and necessary tables, if possible). In the upper right hand corner of the first page of each lab, write your name, the date, and names of lab partners or collaborators. You may use the front and back of each page. Do not tear any pages out of the notebook; if an error is made, simply cross out the error and begin lower on the page or on the next page.

After giving the lab a *title*,

**I.** State the ***Problem*** or ***Purpose***. If there is more than one, they should be listed numerically.

**II.** Provide essential ***Background*** information to be used during the experiment: important formulas, constants, conceptual information, and assumptions.

**III.** List the ***Materials*** needed for the experiment.

**IV.** Describe the ***Procedure*** by giving a brief explanation or diagram of the setup, and list the steps used in gathering the data required for the lab.

**V.** In your ***Data and Analysis***, include all quantitative measurements (in tables whenever possible) and any other observations that were significant. In addition, there should be tables of all calculated results plus an example of how each type of calculation was done (sample calculations of averages are unnecessary). Sample calculations are very important! When required, graphs and error analysis should be included in this section as well.

**VI.** The ***Conclusion*** involves no sharing or copying. It should be your own, unique work, just like an English paper. The conclusion should be in complete, self-inclusive sentences and should include the following:

- (A) a statement of whether the objective(s) of the lab were met or not met, along with a justification for that statement (refer to your calculated value of the *percent error*, where applicable)
- (B) your conclusions from your analysis of the data and graphs. This should include the final value(s) you found from your experiment (i.e., your “answer” to the problem or purpose) and should also include a brief explanation of the concepts and/or physical relationships that were observed/discovered in the lab as they pertain to your results
- (C) a discussion of possible sources of error—not only identifying them but also describing how your results may have been affected by each of the errors (i.e., did the error cause your result to be *larger* or *smaller* than it would have been without the error?) and possible methods of reducing those errors
- (D) your suggestions for improvement of experimental design and/or ideas for further experimentation
- (E) answers to “targeted” questions in complete, self-inclusive sentences (you do not need to write out the question *and* answer, but a reader should be able to know what the question was when reading the answer)

## ***Notes:***

1. When constructing graphs, make them large enough (at *least* half a page) that exact data points can be determined. Use a straight-edge to construct axes; then construct a “best fit” straight line or curve, using your data points. Include an equation for the best fit line or curve with the graph whenever possible. In the conclusion discuss the significance of the intercepts and slope, whenever they can be determined.
2. The data tables can be set up ahead of time, so that you record numerical data directly onto the tables during the lab, to save time.
3. If you have more than one data table or more than one graph, number them (Table 1 or Graph 1, etc.) to make it easier to refer to them in your conclusion.
4. Answers to “targeted” questions set forth by Mr. Kulik should have a “bullet” (●) in front of them to set them apart from your own observations.