# WC Bryant High School

# AP Physics 1

# Lab Report Format

The labs in AP Physics 1 will usually require you to write your own formal lab report. These formal lab reports should include enough information that someone from outside our physics class could read and understand in general terms what you did and what you found out. All formal lab reports are to be typewritten. The reports are based on the information you collect in lab, which must be maintained in a bound composition notebook.

There are certain items that must be included in any formal lab report.

Name and Period- Include these so the lab report can be graded independently of your lab book.

Lab Partners- Each person submits his or her own report, unless otherwise instructed. However, please list the people in your lab group on your report. Separate their names from yours so I know who wrote the report.

Title- Copy the title of the lab from the textbook, lab handout or other source.

Each of the following sections should be prefaced with the section names.

Purpose- Write a a statement of the problem to be investigated. It may involve a hypothesis to be tested or a relationship between variables to be identified. It provides the overall direction for the laboratory investigation, and must be referenced in the conclusion.

Apparatus- Include a listing of all lab apparatus used in the investigation, along with a detailed, labeled diagram **to illustrate the configuration of the apparatus**. The diagram should help explain how the lab was conducted, and not simply provide pictures of the items used.

Procedure- Identify and name all experimental variables and briefly describe how the variables were controlled or manipulated. Someone who was not present during the lab should be able to understand how the experiment was performed by reading the procedure.

Data- Include the data from the lab. Data consist of those values measured directly from the experimental apparatus. No values obtained by mathematical manipulations or interpretations should be included in this part of the report. Data should consist of as many trials as judgment would indicate necessary. All data collected in a lab should be recorded in a permanent format (for example, on a saved computer file if the data were collected electronically or in the bound lab notebook) by the person charged with recording data for that lab. You can recopy the data when writing your lab report, but the original record should be kept for reference. You will usually record data in table format. The units for measurements (kg, m, s, etc.) should be specified in the column heading only.

Evaluation of Data- Write an explanation of your data analysis in narrative format. Include all graphs, analysis of graphs, and post-laboratory calculations. If your lab involved deriving an equation, state the specific equation here. Be certain that your final calculated values are expressed to the correct number of significant digits. Do not show your arithmetic calculations.

Conclusion- Write a conclusion in abstract format, that is, a concise summary of what you did and what your results were. What you did consists of briefly stating the relationship or hypothesis you were investigating, and briefly (one or two sentences) describing how you investigated it. Your results consist of the following:

1. If you had a hypothesis, state whether or not it was confirmed. If you were investigating the relationship between variables, state the relationship between the variables that you found in a clear, concise English sentence.
2. When a mathematical expression can be derived from the analysis, write it, making sure to include the appropriate units. State the meaning of any mathematical parameters such as the slope, y-intercept, etc.
3. Identify sources of experimental uncertainty. If your results differed from the expected result, calculate a percent difference. In some labs you will be expected to carry out a more formal error analysis procedure.