AP CHEMISTRY LAB WRITING GUIDE

Maintaining a well-kept and accurate lab notebook is the most important component of good laboratory performance. The effort invested in developing good habits of notebook use now will be repaid many times over for students pursuing a career in the sciences. Furthermore, some universities now require submission of your AP Chemistry notebook before they will grant AP Credit regardless of your score on the AP Exam.

Basics:

- Must be permanently bound. Spiral notebooks are not accepted!! Composition books only!
- Written in INK. If an error is made, it should be marked through with a ***single line*** so as not to obscure the original entry.
- Your name and contact information should be written on the front cover.
- Reserve the first few pages of the notebook for a table of contents.
- Number all pages in advance at the bottom right corner and NEVER remove pages.
- All graphs must be computer generated and labeled properly and glued into your notebook or they will not be graded.
- Percent errors greater than 10% may result in point deductions.

For each lab we do in AP, you will write up a formal lab report in your lab book. Use proper grammar and punctuation. Your target audience are other AP Chemistry students who have not done the lab you are writing up.
Every lab report should include the following sections with **Headings.**

- **Title of Experiment and Date it was performed**

- **Objective**

A discussion outlining the important concepts in the experiment, in which you should discuss the purpose of the experiment; what you are trying to prove/discover. It should describe the theory that is intended to be reinforced by performing the lab.

- **Materials**
  - A **bulleted** list of ALL of the materials used in the experiment
    - Chemicals with the names written out (no abbreviations) and include molarities where known.
    - Quantities of each (example: 4 test tubes)

- **Procedure**
  - A brief summary of each of the steps taken in completing the lab. It is NOT an exhaustive description containing minute detail, but enough so you can follow this in the lab. This should be numbered steps.

- **Data**
  - Data should be recorded directly into the lab book during the experimentation.
  - Data should be neatly organized (tables if appropriate)
  - All data should have the correct number of significant figures.
- **Graphs**
  - All graphs should be computer generated and labeled appropriately

- **Calculations**

- Any mathematical manipulation (this includes addition, subtraction, multiplication and division) of the data collected during the experiment.
- You **MUST include ALL** mathematical formulas that you use in this section and you **MUST** show all of your work (even if it is just a subtraction) in order to receive **FULL** credit!
- You **MUST include ALL** final results in a nicely organized table.

This section would be where you would **calculate percent error or standard deviation**.

- **Discussion/Data Analysis**

- This should be a three-paragraph dissertation on your results and data and what they mean.

- Paragraph 1:
  - begin with purpose of the lab
  - next **briefly** discuss the procedure
  - then discuss ALL of your data and results for the experiment
  - Finally conclude with whether you successfully met the purpose of the experiment, what you "discovered", and if it makes sense why or why not.

- Paragraph 2:
  - discuss what the central chemical idea was behind the experiment and explain the key concepts
  - discuss the key mathematical relationships used to help you form your conclusions
  - include how your results led you to form certain conclusions

- Paragraph 3:
  - begin this paragraph with your percent error for the experiment (if known)
  - Discuss any errors or mistakes that you encountered in this lab and how they might have affected your results.
  - Discuss whether your solution (conclusion) to the experimental question is realistic why or why not.
  - include any other solutions to the problem that you feel would also be acceptable and why
  - Discussion of theory demonstrated by the lab

- **Analysis/Questions:** This section would be where you would answer **ALL** of the questions that accompany an experiment. These should be answered in complete sentences in paragraph form.