AP Lab Report Rubric

	Far Below Expectations – 0 points	Below Expectations – 2 points	Meets or Exceeds Expectations – 4 points
1. Neatness and Organization	The lab report fails to meet two or more of the expectations for neatness and organization.	The lab report fails to meet one of the expectations for neatness and organization.	1. The lab is legibly written in blue or black pen. 2. The lab sections are in correct order. 3. Pages have not been torn from the lab book. 4. Mistakes are "~~lined through~~" rather than covered with white-out. 5. No more than three spelling/grammatical errors
2. Title and Date	The lab report fails to meet both of the expectations for Title and Date.	The lab report fails to meet one of the two expectations for Title and Date.	1. Title is present and is descriptive of the lab. 2. Date is recorded and accurate.
3. Purpose	Purpose is missing, or is only loosely related to the lab being performed.	The Purpose addresses the procedural aspects of the lab, but does not accurately summarize the theoretical foundation of the experiment.	Purpose accurately describes the theory that is intended to be reinforced by performing the lab.
4. Procedure	Procedure is missing altogether, or missing important steps.	Procedure is a mostly copied directly from the lab description, with little attempt at brevity.	Procedure is a brief summary of each of the steps taken in completing the lab. It is NOT an exhaustive description containing minute detail.
5. Data	The student has recorded data after completion of the lab, or fails to meet BOTH expectations 2 and 3 of the Data section.	The lab report fails to meet either expectation 2 or 3 of the Data section.	1. Data is recorded directly into the lab book during experimentation. 2. Data is neatly organized (in tables if appropriate), and is easy to interpret. 3. All data is correct with regard to significant figures and labels.
6. Calculations and Graphs	The student makes more than 5 errors in graphing, labeling, calculations, and significant figures or omits entire graphs or sets of calculations.	The student makes 3 to 5 errors in graphing, labeling, calculations, and significant figures.	The student makes no more than 2 errors in graphing, labeling, calculations, and significant figures.
7. Conclusions	Conclusion is missing, or is in conflict with the student's experimental results.	Conclusion is present, and does not conflict with the student's experimental findings, but fails to address the theoretical basis for the lab.	The Conclusion succinctly describes what can be concluded from the experimental results. It is aligned with a well-written statement of Purpose at the beginning of the lab.
8. Discussion of Theory	Discussion of theory is missing, or does not adequately address both of the expectations for this section.	Discussion of theory is present, but fails to correctly address one of the two expectations of this section.	1. Addresses the theory demonstrated by the lab 2. Explains how the calculations do/do not support the theory and fulfill the purpose of the lab
9. Error Analysis	The report fails to meet 2 (or all 3) of the expectations for error analysis.	The report fails to meet 1 of the expectations for error analysis.	1. Relative error, if appropriate, has been calculated. 2. Specific sources of experimental error are addressed. 3. Write-up analyzes the effect of errors on the magnitude of calculated quantities.
10. Questions	Post-lab questions contain more than 3 errors, or some answers have been omitted.	Post-lab questions contain 2 to 3 errors.	Post-lab questions contain no more than one error in total.

Some Lab Write-up Examples

The following table gives examples of laboratory answers for the "Density of Salt Solutions" lab.

	Below Expectations – 2 points	**Meets or Exceeds Expectations – 4 points**
Title	"Salt Solution Density Lab"	"Determination of the Relationship Between the Density and Concentration of Sodium Chloride Solutions"
Purpose	"The purpose of the lab is to learn to find the density of salt solutions."	The purpose of the lab is to develop a mathematical model relating the concentration of a solution to its density, and to use this model to determine the concentration of solutions of unknown concentration from their densities."
Procedure	"Measure out 10.00 mL of the 5% NaCl solution using a pipet and a graduated cylinder, being careful not to lose any solution. Place the graduated cylinder on an analytical balance and determine its mass to three decimal places. Record the mass in the lab book."	"Using an analytical balance, determine the masses of 10.00 mL samples of each of the solutions of known concentration."
Data	5% solution = 10.012 g 10% solution = 10.180 g 15% solution = 10.230	**Concentration** / **Mass (g)** 5% / 10.012 10% / 10.180 15% / 10.230
Calculations and Graphs	Density = 10.012 g/10.00 mL = 1.0012 g/mL (significant figures error) Density = 10.012/10.00 = 1.001 g/mL (labels not present in calculation)	Density = m/V (fundamental equation shown) Density = 10.012 g/10.00 mL = 1.001 g/mL (labels present throughout calculation, significant figures rules observed)
Conclusions	"We demonstrated that it is possible to measure the densities of solutions, and to find the concentrations of unknowns."	"We demonstrated that a linear relationship exists between the density and concentration of sodium chloride solutions, and that the relationship can be used to make predictions about the properties of solutions of unknown concentration."
Discussion of Theory	"We showed that as the concentration of a solution increases, the density of the solution also increases linearly. Our data supports this conclusion. The purpose of the lab was fulfilled."	"As the concentration of a solution increases, the density of the solution increases in linear fashion. Our data supports this concept, within reasonable margins of error. The purpose of the lab was fulfilled when we were able to use the mathematical model for this linear relationship to predict the concentration of solutions of unknown concentration based on their densities."
Error Analysis	"We failed to take into account the mass of the graduated cylinder when finding the mass of the solutions."	"We failed to take into account the mass of the graduated cylinder when finding the mass of the solutions. As a result, the mass of each solution was too high, and the resulting density was also too large."