HOW TO WRITE A LAB ANALYSIS

Analysis: This is the part of a lab report where you **prove** that you understand the concepts, can make results from the data collected, and can connect the results to other applications. It is the conclusion of your experiment and often is the only part of your lab that is graded.

Results are <u>not</u> the same as data. Results are the trends, patterns, calculations and observations. <u>Never</u> repeat your data for a result. For example, if I am recording temperatures of 10 degrees, 15 degrees, 20 degrees, and 25 degrees over four time trails, then the result is that temperature increases by 5 degrees at each trail.

The analysis is **<u>always</u>** required to be **<u>typed</u>** unless otherwise indicated by your instructor. It is due at the start of the period and you are not allowed to go to the library to print it out. College prep means you are prepared.

The analysis has eight parts and *<u>IS ALWAYS WRITEN IN PARAGRAPH FORM</u>*. (Never write an analysis as bullet points or a numbered or lettered list).

-Restate the purpose of the lab
-Restate your hypothesis
-Describe the results of your experiment
-Indicate if you accept or reject your hypothesis
-Describe two possible experimental errors in the experiment that most likely happened that influenced your results. (Errors are **not** measurement mistakes, timing mistakes or failure to follow directions- these are human errors and not experimental errors).
-Describe two improvements that would correct for the errors you just described.
-List at least <u>one</u> Science and Engineering Practice that you applied in this lab and <u>describe</u> how you used it. (See other side).
-List at least one Cross-Cutting Concept that was in this lab. Describe how the lab is an example of that Science/Engineering concept (See other side).
-Answer any additional questions given by your instructor in paragraph form.

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The Eight Practices of Science and Engineering Essential for All Students:

1. Asking questions (for science) and defining problems (for engineering)
2. Developing and using models
3. Planning and carrying out investigations
4. Analyzing and interpreting data
5. Using mathematics and computational thinking
6. Constructing explanations (for science) and designing solutions (for engineering)
7. Engaging in argument from evidence
8. Obtaining, evaluating, and communicating information

The Seven Crosscutting Concepts Connecting Science and Engineering

1. Patterns
2. Cause and effect
3. Scale, Proportion and Quantity
4. Systems and System Models.
5. Energy and Matter
6. Structure and Function.
7. Stability and Change.

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