

Physical Sciences Laboratory Report

Write Up Guide

Mechanics (unless stated specifically for a lab):

- Labs will be typed (word processed) with a twelve point type and in Times New Roman font. If a lab is turned in hand written, it will be dropped one full grade. If you do not have access to a computer at home, they are available in the school library.
- Labs will be due as assigned by the teacher, exceptions will be made only for excused absences and *must* be approved by the teacher.
- DO NOT double space! Please save some trees! With this in mind do not be alarmed if your lab seems short once you have it typed. If the format is followed and all guidelines are met then it will be graded accordingly.
- DO NOT use personal pronouns (I...etc.)! Stay away from writing the lab in the present tense. You are telling a story about what has been performed not what is currently being performed.
- DO NOT use contractions (don't, can't, wouldn't, etc.). This is **FORMAL** writing.
- DO NOT plagiarize. Be sure your lab report is your original work. Please see HK Student Handbook for details on plagiarism.

Format:

All labs will have the following sections:

- **Title Page:** This will include the title of the lab, date performed, name of author with class period information and the names of any lab partners.
- **Purpose and Background:** This will state the reason the lab was performed and any background information that will help a reader understand why the experiment was attempted. A one sentence Purpose and Background is not acceptable. You can include theories and/or definitions of important terms.
- **Hypothesis/Problem Statement:** Statement of your, or your groups', hypothesis/problem statement. When possible this should state the relationship you expect to see between the independent and dependent variables as a result of the trials you conduct.
 - **Previously Practiced Format:** If (*the Independent Variable*) is related to (*the Dependent Variable*) then (*state the predicted relationship in detail*) because (*summary of Background information*).
- **Materials:** Include a bulleted list of all materials used in the lab assignment. Include any safety equipment that is necessary.

- **Procedure:** This section will be numbered and will include all the steps that you performed to complete the experiment. You can combine steps that are performed together so as not to have 50 short steps. Do not use “Gather Materials” as a step in the procedure since you have already listed the materials required. Accuracy counts! Remember **this process is to ensure that someone can reproduce the results that your experiment achieved.**
- **Data and Analysis:** This section should include any observations and data that is collected during the experiment along with necessary calculations. This can be represented in table format, if a table is used ensure it has a title. Graphs will also be included in the data section when required, ensure that both the x and y axes are labeled and a title for the graph is included. If an equation is used you must include a sample calculation.

Example: If displacement is calculated for an object accelerating from rest:

Formula	$d_x = \frac{1}{2} * a * t^2$
Substitution with units	$d_x = \frac{1}{2} * 9.8 \text{ m/s}^2 * (3\text{s})^2$
Answer with units	$d_x = 44.1 \text{ m}$

A very brief analysis statement may be included to describe why particular calculations were performed or to state what trends within the data or graphs indicate. Percent Variation calculations would also be reported here.

- **Conclusion:** This is a single statement that states the relationship that your DATA shows between your independent and dependent variable. (It is not bad science to state a conclusion that your data supports even if you know it does not agree with accepted results. It is awful science to state a conclusion that does not agree with your data.)
- **Discussion:** Discuss the results of the experiment and how it either supported your stated hypothesis or not. Any post-lab analysis questions should be answered here in paragraph form as a coherent description of the topic being analyzed. Remember to use data in your discussion and describe what it means in relation to the topics you introduced in the background section of the write-up. You might even contrast your results by describing what trends should be shown by more robust or accurate data. The discussion is where you demonstrate your understanding of how the experiment relates to a topic being studied in class.

Your discussion should also include information about the validity of the data you collected. Any flaws in the procedure should be described and suggested corrections should be included. Suggestions for future testing might also be described here if a hypothesis was not supported by data or no relationship was demonstrated. Please note: **A two sentence discussion is unacceptable; a two page discussion is seldom warranted.**