

Appendix D

Lab Report

Laboratory Write-Up Form

Prelab: What is the main topic of this lab? Use the Background Information to answer preliminary questions. Depending on the lab, you may be asked to do preliminary research on your own before conducting your experiment. Your teacher may also have you prepare the procedure and data tables before conducting the lab.

Every report will contain the following:

Title of Experiment and Date

- I. Purpose and Hypothesis-** Using no more than two or three sentences, state the purpose of the experiment, and give your hypothesis. (Where appropriate, use an if/then format for stating the hypothesis).
- II. Materials-** List all materials and equipment used in the lab.
- III. Procedure-** Create a Flow Chart of the lab procedure. Depending on the lab, you may need to develop all or part of your procedure on your own.
- IV. Data-** Organize your observations/data and present this information in the form of illustrations, drawings, graphs, tables and/or qualitative statements. All quantitative measurements must be labeled with units and descriptions.
- V. Calculations-** Show all calculations used in the lab. If there are no calculations, write "none" in this section.
- VI. Questions-** Answer any questions given in the lab or by the instructor here. Please use double column format in this section.

Question	Answer
Copy the question, or restate question in the answer, as directed by your teacher.	Answer the question in complete sentences

- VII. Discussion of Error-** Discuss the effect of any sources of error for the data analyzed in this lab.
- VIII. Conclusion-** Using your own words write a conclusion. The conclusion has the following basic format and should be 2 to 3 paragraphs long:
 - a. Claim:** Restate your hypothesis; was it correct or incorrect?
 - b. Evidence:** What evidence is there in your data to support or not support your hypothesis? This is very important, as it connects your results to the conclusion.
 - c. Reasoning:** How does your data support the scientific principle explored in this lab? This is a research section. Use your text as one reference and you will need one additional reference beyond the text and the notes.
 - d. Connections to the Real World:** Explain how your results are related to something in the real world or answer questions about this.
 - e. Further Experiment:** Give an idea for an experiment that tests this concept further. You may not describe the same experiment with different materials.

Claim-Evidence-Reasoning Rubric

	4 Advanced	3 Proficient	2 Progressing	1 Beginning
<p>Claim <i>A statement or conclusion that answers the original question/ problem.</i></p>	<ul style="list-style-type: none"> • Makes a claim that is relevant, accurate, and complete. • Contrasts the claim to an alternative claim. 	<p>Makes a claim that is...</p> <ul style="list-style-type: none"> • Relevant (Directly & clearly responds to question) • Accurate (Consistent with evidence and scientific principles) • Complete (Complete sentence that stands alone) 	<ul style="list-style-type: none"> • Makes a relevant and accurate but incomplete claim. 	<ul style="list-style-type: none"> • Does not make a claim, or makes an inaccurate or irrelevant claim.
<p>Evidence <i>Scientific data that supports the claim. The data needs to be appropriate and sufficient to support the claim.</i></p>	<ul style="list-style-type: none"> • Provides appropriate and sufficient evidence to support claim. • Discusses evidence that would support alternative claim. 	<p>Provides evidence to support the claim that is...</p> <ul style="list-style-type: none"> • Appropriate (Scientific data or information from observations, investigations, data analysis, or valid scientific sources) • Sufficient (Enough evidence to support the claim) 	<ul style="list-style-type: none"> • Provides appropriate, but insufficient evidence to support claim. May include some inappropriate evidence. 	<ul style="list-style-type: none"> • Does not provide evidence, or only provides inappropriate evidence (Evidence that does not support claim).
<p>Reasoning <i>A justification that connects the evidence to the claim. It shows why the data counts as evidence by using appropriate and sufficient scientific principles.</i></p>	<ul style="list-style-type: none"> • Provides reasoning that clearly connects the evidence to the claim. • Includes appropriate and sufficient scientific principles to explain why the evidence supports the claim. • Explains why the alternative claim is inaccurate. 	<p>Explanation provides reasoning that is...</p> <ul style="list-style-type: none"> • Clear (Clearly communicated and goes beyond repeating claim and evidence) • Connected (Explains why the evidence is important or why it is relevant) • Integrated (Links the evidence to an important disciplinary idea and crosscutting concept) 	<ul style="list-style-type: none"> • Provides reasoning that connects the evidence to the claim. May include some scientific principles or justification for why the evidence supports the claim, but not sufficient. 	<ul style="list-style-type: none"> • Does not provide reasoning, or only provides inappropriate reasoning.