

## Biology Lab Report Write-up Rubrics

The following is to help you evaluate your lab report. Give yourself points and improve your work prior to submit your report to me!!

Points	Parts of the Lab Report
2 points will be deducted if not in compliance	<p><b>Format:</b> Formal lab reports should be typed using Times New Roman font #12. Unless otherwise specified, DO NOT submit handwritten labs, since they will not be accepted</p> <p>*Each heading must be properly <b>labeled</b> in your lab report, using roman numerals, bold, all capital letters, and underlined. Skip lines between each section.</p>
1	<p style="text-align: center;"><b><u>Title (Bold letters, underlined and on the top center of the page)</u></b></p> <p>It should read:</p> <p>“The effect of <u> (independent variable goes here) </u> on <u> (dependent variable goes here) </u>.”</p>
1	<p><b><u>BENCHMARKS:</u></b></p> <ul style="list-style-type: none"> <li>▪ A summary of the main concepts that you will learn by carrying out the experiment. (This is generally provided by your teacher, but if unsure just ask!)</li> </ul>
1	<p><b><u>I. INTRODUCTION:</u></b></p> <ul style="list-style-type: none"> <li>▪ This is a paragraph that discusses background information that relates to the lab concepts. <b>DO NOT</b> simply copy the introduction on your lab instruction sheet. You may select some facts to incorporate from the provided information, but overall it should be a summary of the <b>topic in your own words</b>. The rest of the information for your introduction should come from <u>class discussions, personal experience (if any) and notes</u>.</li> </ul>
1	<p><b><u>II. PROBLEM:</u></b></p> <ul style="list-style-type: none"> <li>▪ The <b>Problem</b> is written in the form of an open-ended question (example: How...does__affect__? What.....? Why...?)</li> <li>▪ You may NOT start your question with “Does.....?”</li> </ul> <p>Be sure to include the dependent and independent variables in your answer.</p>
1	<p><b><u>III. HYPOTHESIS:</u></b></p> <p>State the hypothesis carefully, logically, and, if appropriate, with a calculation.</p> <ul style="list-style-type: none"> <li>▪ Write your prediction as to how the independent variable will affect the dependent variable using a complete statement that is testable or an <b>IF-THEN-BECAUSE</b> statement:  <b>If</b> (state the independent variable) is (choose an action), <b>then</b> (state the dependent variable) will (choose an action), <b>because</b> (describe reason for event).</li> </ul>
1	<p><b><u>IV. MATERIALS:</u></b></p> <ul style="list-style-type: none"> <li>▪ List all materials used in bullet form; NOT numbered.</li> </ul>
1	<p><b><u>V. PROCEDURE:</u></b></p> <ul style="list-style-type: none"> <li>▪ Procedures could be listed (NUMBERED) or in an abbreviated paragraph in your own words. In addition, it should be accurately stated so that someone can understand what was done and repeat the experiment.</li> </ul>
4	<p><b><u>VI. VARIABLES AND CONTROL TEST:</u></b></p> <p>Identify the variables in the experiment. There are three types of variables:</p> <ul style="list-style-type: none"> <li>• <b>Independent variable:</b> (manipulated) The factor that can be changed by the investigator (the cause).</li> <li>• <b>Dependent Variable:</b> (Responding. This variable changes in response to what you manipulated. Observations of this variable are recorded in data tables. )</li> <li>• <b>Constants</b> (These are variables that DO NOT CHANGE, are kept under control or constant thought out the investigation)</li> </ul> <p><b>Control test.</b> A control test is the separate experiment that serves as the standard for comparison and helps identify effects of the dependent variable.</p>

2	<p><b><u>VII. DATA/OBSERVATIONS:</u></b></p> <ul style="list-style-type: none"> <li>▪ Ensure that all observations and/or data are recorded.</li> <li>▪ A proper title must be included for each table, diagram</li> <li>▪ Use a table and write your observations clearly. (e.g., color, solubility changes, etc.)</li> </ul> <p>Pay particular attention to significant figures and make sure that all units are stated.</p>
2	<p><b><u>VIII. DATA ANALYSIS:</u></b></p> <ul style="list-style-type: none"> <li>▪ Analyze data and specify method used.</li> <li>▪ If graphing data to look for a common trend, be sure to properly format and label all aspects of the graph (i.e., name of axes, numerical scales, etc.)</li> </ul>
2	<p><b><u>IX. RESULTS (ANALYSIS QUESTIONS):</u></b></p> <ul style="list-style-type: none"> <li>▪ Ensure that you have used your data correctly to produce the required result.</li> <li>▪ Include any errors or uncertainties that may affect the validity of your result.</li> <li>▪ Here you will also answers the lab questions or statements of what was observed and recorded. Each question should be numbered and answered in complete sentences; restate the question in your answer, or write the question and then the answer.</li> </ul>
8	<p><b><u>X. CONCLUSION:</u></b></p> <ul style="list-style-type: none"> <li>▪ <b>First Paragraph:</b> Introduction       <ol style="list-style-type: none"> <li>1. What was investigated?           <ol style="list-style-type: none"> <li>a. Describe the problem.</li> </ol> </li> <li>2. Was the hypothesis supported by the data?           <ol style="list-style-type: none"> <li>a. Compare your actual result to the expected (from the literature, or hypothesis) result.</li> <li>b. Include a valid conclusion that relates to the initial problem or hypothesis.</li> </ol> </li> <li>3. What were your major findings?           <ol style="list-style-type: none"> <li>a. Did the findings support (or not) the hypothesis as the solution to the problem?</li> <li>b. Calculate the percentage error from the expected value.</li> </ol> </li> </ol> </li> <li>▪ <b>Middle Paragraphs:</b> Discuss the major findings of the experiment.       <ol style="list-style-type: none"> <li>1. How did your findings compare with other researchers?           <ol style="list-style-type: none"> <li>a. Compare your result to other students' results in the class.               <ol style="list-style-type: none"> <li>i. The body paragraphs support the introductory paragraph by elaborating on the different pieces of information that were collected as data.</li> <li>ii. Each finding needs its own sentence and relates back to supporting or not supporting the hypothesis.</li> <li>iii. The number of body paragraphs you have will depend on how many different types of data were collected. They should always refer back to the findings in the first paragraph.</li> </ol> </li> </ol> </li> </ol> </li> <li>▪ <b>Last Paragraph:</b> Conclusion       <ol style="list-style-type: none"> <li>1. What possible explanations can you offer for your findings?           <ol style="list-style-type: none"> <li>a. Evaluate your method.</li> <li>b. State any assumptions that were made which may affect the result.</li> </ol> </li> <li>2. What recommendations do you have for further study and for improving the experiment?           <ol style="list-style-type: none"> <li>a. Comment on the limitations of the method chosen.</li> <li>b. Suggest how the method chosen could be improved to obtain more accurate and reliable results.</li> </ol> </li> <li>3. What are some possible applications of the experiment?           <ol style="list-style-type: none"> <li>a. How can this experiment or the findings of this experiment be used in the real world for the benefit of society?</li> </ol> </li> </ol> </li> </ul>
25 Points	100%