

Biology

Lab Write-UP Format and Guide

Through the years, scientists have developed a standard style for presenting their experimental results. Although writing a formal lab report may seem cumbersome, it has proven an effective and efficient way to communicate and is therefore almost universally accepted. One of the purposes of the lab portion of AP Biology is to give you practice documenting and writing about the experiments you have done. Give attention to the Scientific journal articles you read and note the connection between the structure of a paper and the logic of experimental research.

In AP Biology you will use Google Docs to record and present the experimental data from a majority of the lab exercises. In addition you will complete and turn in several other lab based activities using various Google applications. The following presents the required elements of your lab write-ups and the stylistic requirements.

Each LabWrite-UP will contain the following sections

Title: Make sure the title of your lab is specific and scientific. It should be descriptive of the experiment conducted. A reader should be able to understand the basic idea of your lab from just the title. For example, instead of "Osmosis Lab", you could use something like "Calculating the Water Potential of Potato Cells".

Purpose/Introduction: Introduce the Reader to your topic by stating the nature of the problem and the Specific question you are trying to answer, or the problem you are testing. This section is brief, but important in that it provides the reader with the overall goals of the experiment. Make sure to include any citations used in proper MLA format

Hypothesis: Critical section of your lab! A hypothesis needs to be written in an "if...then...because..." format and should address an expected outcome/ result of the experiment you are doing. A hypothesis should be specific, so that the laboratory conclusion can refer to the hypothesis. Many labs have multiple sections each of which may include a hypothesis. The Hypothesis does not need to be a separate section but it should be clearly stated within the purpose or introduction of your lab report

Materials: A list of Critical Apparatus used in the experiment.

Procedure: In step-by-step format, you need to list the steps in your lab. You can paraphrase as long as you get the basic summary of what is being performed. You or a classmate/ reader should be able to complete the lab using only your lab report, and not need a copy of the protocol. When writing your procedure split your report into two columns (insert a two column table) the left hand side will be for the procedure as directed by the protocol, and the right hand side will be for observations, notes, and changes made to the protocol (See example below).

Table 1. An example of an AP Biology LabWrite-UP Procedure.

Procedure	Notes & Observations
1. Fill 3 sampling bottles with water at 3 different temperatures.	1. Actual temperatures were; 10 , 22 , 30
2. Determine the DO of each sample using the technique given to you. Record the results in Table 1.	2. Technique is a modified Winkler method, and is as follows....

Results: This is where you present your data, clearly and concisely, with no conclusions or judgements. Summarize your data by putting it into tables. Tables should be labeled in sequential order as well as contain a descriptive title. Tables can be drawn neatly by hand (use a ruler) or generated by computer.

Analysis: Important questions are answered in this section. Graphs and mathematical calculations, statistics, etc. should be included in this section and refer to the data from the results section. You should refer to the table or figure in the text and point out significant data trends. All questions (unless otherwise stated) in the Lab protocol will be answered in this section. Please copy the questions into your LabWrite-UP (you may paraphrase the long questions). All answers to lab questions should be written in complete sentences, but there is no need to restate the question in the answer. All graphs should be done neatly on graph paper or by computer, label and title all axis. Show any mathematical equations and calculations.

Discussion: This is the conclusion to your lab. This section should relate your results and analysis back to the original purpose of the experiment. What do your results mean? Was your hypothesis correct? (it's okay if its not) Did you meet your objectives? Did you get any unexpected results, if so offer up an explanation for these results. In addition you should evaluate your procedure making suggestions for improvement if necessary. Identify weaknesses and state realistic improvements. What did you learn from this experiment? What new questions come to light as a result of this experiment?

Citation: Any sources you cite should be included in a *Works Cited* page at the end of the lab report in proper MLA format

A Note on Style

- Use a standard font for all lab write-ups
- Use headings and page breaks to format your report
- If you include photographs of graphs or images of materials used, make sure they are well lit and in focus.
- All documents should be shared with Mr. Fazio as comments only