

Lab Report Format

Any lab report that is called “a paper” should be typed in double-spaced format and should contain 5 parts. These parts should be clearly labeled:

Introduction: Provide some background information on the subject of the paper and then present the a null hypothesis for each experiment clearly.

Materials and methods: For the purpose of these experiments, assume your reader is familiar with general lab procedures so you don't have to describe them in detail. It suffices to include flow diagrams with some short descriptions directly within them.

Results: Show the results in figures (graphs or histograms) on a separate page and refer to it in the text: "As shown in Figure 1, the measurements indicate that...". Do not repeat the actual results in a table and also in a graph; you will lose points if you do so. The results need to be represented clearly only once. Keep the results section brief.

Discussion: A brief essay of how your results reflect on the axioms and predictions. If your results contradict what other researchers have shown, i.e., what is in the textbook or lab manual, try to rationalize why your results are different. Was there something different with your assumptions, your equipment or your technique that would produce different results?

References: Cite authoritative sources to support your axioms and your reasoning. Use citations when referring to previously published ideas. The standard format is to put the author and year in parentheses, e.g., (Campbell, 1989) at the end of the sentence in the text. In the References section, list the references with a complete citation in alphabetical order. For example:

Campbell, N.A. and Reece, J.B. 2005. Biology. 7th Ed. Pearson, Benjamin/Cummings, 1231 pages.

Phillips, D.C. 1966. The three-dimensional structure of an enzyme molecule. Sci. Am. 215: 78-82.

The following are some more explanations by the Head TA, Jessica Ardis, for writing your report:

1. Aim for your introduction to be about one double-spaced page. You should have a little background information about enzymes and how they work. You do not have to explicitly state: “My first hypothesis is...” but you should introduce the questions that you sought to answer by doing the four experiments. You must cite references within the body of your introduction.
2. If you want to cite the lab manual, use Eby Bassiri for author, and University of Pennsylvania for publisher and cite the website of the Lab Manual in its entirety.
3. You must write about all four experiments even though your group did only one.
4. You do not need to show calculations for concentrations in the report.

5. Trend lines should only be shown on the standard graph and the Lineweaver-Burk plot. When you perform a linear regression, display the equation on the graph.
6. If your results do not make sense, speculate as to why they turned out the way they did in the discussion section. It is more important to be able to intelligently discuss results than it is for everything to have turned out perfectly.

Use of any section of this Lab Manual without the written consent of Dr. Eby Bassiri, Dept. of Biology, University of Pennsylvania is strictly prohibited.