

Lab Reports

Much like any field, scientific writing requires its own formats for presentation and discussion. While English classes have their preferred format of the essay, science classes utilize the lab report. Lab reports generally follow the same structure, including the abstract, introduction, materials and methods, results, discussion, and conclusion sections. Depending on the course assignment or instructor, you may be required to alter or add sections. This handout will provide accurate guidelines for a general lab report.

Abstract

The abstract is a succinct summary (150-200 words max) of your report. Ideally, it should consist of a summary of each report section stitched together into one coherent and concise paragraph. A reader should be able to look at the abstract and be able to understand the purpose, general methods, results, and discussion without reading through the report first.

Introduction

The lab report's introduction largely serves the same purpose as its essay equivalent by focusing on providing context for the topic or experiment and presenting your hypothesis and predicted outcomes. Introductions should include any background information that is required to understand the purpose for the experiment. After establishing context, the next step is to present the hypothesis and your prediction for what the results will be in the experiment (much like a thesis statement in an English essay).

Materials and Methods

After defining the experiment's goals, hypothesis and prediction, the next step is to define the experiment's methodology. The goal here is to communicate all the necessary information needed for another lab to replicate your experiment. To do this, describe what materials and steps you followed to test your hypothesis. This section is like a set of instructions that someone could follow if they wanted to try to repeat your experiment, so it's important to be accurate, precise, and easy to follow. Describe what you did in detail and in the order you did it!

Results

This section should provide the results of the experiment as they are. Include all charts, graphs, and tables that display the outcome of the experiment. There should be no qualifications (excuses) or evaluations made for the data. Avoid talking about what *should* have happened and focus on communicating what *did*.

Discussion

After presenting the outcomes of the experiment in the results section, the discussion section is where you explain and analyze the results. *This* is where you might talk about what you

expected to happen or explain why your outcomes did or didn't match your hypothesis/prediction. The question that should be answered in this section is:

Was your hypothesis or prediction correct? Explain how.

Writing a Conclusion

The conclusion section is important as it allows you to directly interact with your audience by answering some of the questions and concerns they might have had when reading your paper up to this point. It also helps you maintain an objective writing style when talking about the potential effects that are presented in the results section. Here are some questions to consider answering in your conclusion section.

What do the results mean for life outside the lab? What wider impact could be gathered here?

What difficulties or mistakes occurred when conducting the experiment? What would you change to avoid these issues next time?

References

Here at the end of your paper you list your references according to your instructor's citation style. Common styles are APA and IEEE.

Appendices

The last section is to provide all raw data, graphs, tables, and other quantitative measures. The order of the elements listed in the appendices follows the order of appearance in the essay.

Conclusion

The lab report follows a highly constructed formula with specific stylistic expectations. The purpose of this handout is to describe what each of these sections consists of so you can accurately fill out your own lab report to its required specifications. To see an example in action, click the link here to gauge what a lab report looks and sounds like.