

Science Writing: Writing a Lab Report

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Lab reports are a large part of any science course, and as you progress through your upper level classes and labs you need to know how to write a solid lab report. These reports are not only a compilation of any data gathered, but require writing skills as well. When completed, your lab report should allow a reader to understand your experiment, to understand the results and their implications, and to recreate the experiment themselves. A good lab report is composed of seven parts: a **Title Page**, an **Abstract**, an **Introduction**, a section on **Methods and Materials**, a section on **Results**, a **Discussion**, and a **Works Cited/References** page. After going into the field or doing an experiment in the lab, it will be necessary for you to gather your notes and data and organize them to fit into these seven sections.

1. Title Page

Sounds simple, right? It actually takes a bit more than you might think. Your **Title Page** is the first page of your report, and should contain the following, depending on your professor's preferences:

- A concise but descriptive title that clearly explains your experiment
- your name
- the name of the course
- your lab time
- your instructor's name
- and the due date of the paper

2. Abstract

The **Abstract** is the first written part of your lab report, and will start the page after your Title Page. However, it should be the last part you actually write. This is because it is a literal summary of the rest of your paper, and should help the reader understand the concept, hypothesis, methods, results, and conclusions of your entire report. A reader should be able to understand your entire report from reading the **Abstract** alone. There is no specific length for an **Abstract**. It simply needs to be long enough to serve its purpose. However, to give you an idea, a good Abstract will have one paragraph for every two pages of the rest of your report. Once your report exceeds ten pages, the Abstract should be one page long. Even so, keep the abstract brief; it is frequently read by readers who have little time to spend on the entire report.

3. Introduction

The **Introduction** should begin by giving background information on your experiment. The question being asked in your experiment should be presented. The location, date, time, and conditions (i.e. weather if you worked in the field) that your experiment was performed in should be provided. Published information about your topic should be provided, including outside sources, cited properly both in the text and in the **Works Cited** section. You should then present your hypothesis. The majority of your introduction should be based around background information gathered from outside sources. While writing, keep word tense in mind: when referring to your own experiment, write in the past tense; when referring to your outside sources, write in the present tense.

4. Materials and Methods

The **Materials and Methods** section should describe every detail of your experiment as you performed it. The reader should be able to perfectly replicate the experiment based on this section. It should also be written as a narrative, describing your actions in the experiment, not as a numbered or bulleted list. Be sure to include every item used, no matter how small or how briefly used, and include any measured



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amounts (i.e. do not write "We added hydrochloric acid to the solution," instead write "We added 3 milliliters of 0.1 molar hydrochloric acid to the solution.") Write this section completely in past tense.

5. Results

Your **Results** section should include several paragraphs that describe (again, narrate; don't list) the results of your experiment. Also include any figures (i.e. graphs, pictures) and tables that you may use to organize your data in this section, and remember to number and label them properly (for example, if one figure follows another, the first will be "Figure 1" and the second will be "Figure 2," however if a table follows a figure, the figure will be "Figure 1" and the table will be "Table 1"). Put these labels below figures and above tables. A brief description of the figure next to the number looks professional and may be helpful to readers.

As you write, make references to your figures and tables. If possible, place a figure or table below the paragraph in which it is referenced. Write this section in the past tense.

Remember, the **Results** section is purely for results. Include your data or observations, including graphed data and data that was subject to statistical analysis, exactly as they were recorded in your lab. Do not report what you thought would occur, and do not discuss the implications of your results.

6. Discussion

The **Discussion** section is where you interpret and analyze your results. Provide the question being asked in the lab, and answer it based on your results. Talk about what caused the results you gathered. Show whether or not the data supported or did not support your hypothesis (do not say "proved" or "disproved"). Connect your results to the information you already gathered in your Introduction section, and see how they compare and contrast. If there were any possible sources of error in your data, discuss them here. You may also mention the need for future research or what your plans are for further pursuing this hypothesis. This section should be written in the present tense.

7. Works Cited

The **Works Cited** section should properly cite every source you used in your paper in the proper format (most likely MLA). Your professor may have certain preferences for this section; if you are unaware of those preferences, be sure to clarify.

Works Cited

Morgan, Judith G., and M. Eloise B. Carter. "Investigating Biology." *The Benjamin/Cummings Publishing Company, Inc.* Web. 1 Dec. 2010.

"Sample Lab Report-Ecology 101." *North Carolina State University :: Welcome to North Carolina State University.* Web. 12 Dec. 2010. <<http://www.ncsu.edu/labwrite/res/labreport/res-anno-sample-labrep.html>>.

More questions? Contact the Avery Point Academic Center at 860-405-9058 or email us at apac@uconn.edu.



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