

# Lab Reports



Do not use this handout as a set of rules for writing a lab report! Each course and each instructor may have different requirements. Writers and Writing Assistants can use this handout as a guide for discussing the effectiveness and completeness of a lab report. They should always compare this handout to the guidelines or grading rubric provided by the lab instructor.

The results are the heart of a lab report. Everything in the other sections should relate to the data presented in the results section. The discussion section interprets the data and usually carries the most weight in terms of grading.

## Suggested Order for Writing

- This varies, but professionals who prepare research reports tend to draft the different sections in the following order: Results, Materials and Methods, Introduction, Discussion, References (Literature Cited), Abstract.
- For “cookbook” (educational) labs or when the data require very little interpretation or analysis, students may prefer to begin with the Introduction and write straight through to the Discussion/Conclusion.
- An abstract, if required, should always be written last.

## Style

- Use concise, formal language.
- Use past tense to describe the experiment.
- Unless directed otherwise by the professor, avoid the use of first person pronouns (e.g. I, we, my, out). Focus on the object, problem, or apparatus being studied, not the researcher.

## Order of a Finished Report

- **Title**  
Briefly describe the study in a phrase of 10 words or less.
- **Abstract (if required)**  
In one paragraph (check rubric for word limit), include the goal of the study, purpose, key result(s), and major discussion points.
- **Introduction**  
Describe the main issue being investigated and state the purpose of the experiment.  
Cite other relevant studies and relate them to the experiment.  
Include background information about the material, organisms, equations, and equipment used.  
State the hypothesis and how it will be tested (what does the student expect to see?).

## **Order of a Finished Report (continued)**

- **Materials and Methods**

Provide information needed to replicate the experiment.

Identify all materials, equations, and equipment used.

Write full sentences in paragraph form (not a numbered list).

Describe the actual process, especially if it is different from the lab manual.

- **Results**

Summarize data in clearly numbered and titled graphs and tables.

Provide captions that describe the data being presented (above tables; below graphs).

State key results in sentence form, and discuss all figures and tables.

Identify trends and statistical significance.

Avoid explaining what the data mean, making conclusions, or identifying sources of error.

- **Discussion**

Discuss whether the data support the hypothesis and the expectations that were described in the introduction.

Explain conclusions that can be made from the results and the significance of these conclusions.

Suggest reasons why expectations were not met, if they weren't.

Compare findings to published research, especially those mentioned in the introduction.

Be sure to answer all discussion questions posed by the professor.

Don't present findings as facts (the data "suggest," they never "prove").

- **Literature Cited**

List all sources that appear in text using consistent format style.

In-text citations are paraphrased without quotation marks or page numbers, and they are usually identified using name-year format, such as: (Surname, 2006).

## **Miscellaneous**

- The word "data" is plural and so requires a plural verb. ("The data show..." not "The data shows...")
- The words "significant" and "correlation" should be reserved to those instances when a statistical analysis has been performed. Be alert for other specialized vocabulary.
- Avoid using the word "you." You are reporting on your experiment, not giving directions.
- Use acronyms only after presenting the full term with the acronym in parentheses. For example: mannitol salt agar (MSA).
- Use a space between numbers and units (e.g. 12 mg).