

Writing a Lab Report

A lab report is a means of communicating experimental results. Lab reports use a standard format to ensure that the information is complete. Others should be able to replicate the experiment exactly. The report is written with complete sentences and paragraphs, and with correct spelling. It is not a list or set of instructions but a detailed description of what you did. A lab report should be clear, concise, and easy to read. The report should be word-processed.

Use headings for each section of a lab report. The components of a lab report are:

Title

The title is a statement of the problem. It should describe the nature of your experiment.

Introduction

The introduction should state as clearly as possible the problem or question you are asking in the investigation and suggest an answer in the form of your hypothesis. You should include background information about your topic or hypothesis that would help a reader understand the problem, and briefly how you intend to test the hypothesis.

Materials and Methods

Describe exactly what you did and what materials you used in the design of and procedures used in the experiment. The reader should be able to use this section to replicate your experiment. Your description should be detailed, yet concise. Write in sentences. Be specific, and list exact quantities, such as "We added 1 ml of 5% NaOH solution."

Results

This is the data section. Summarize your data in tables, graphs, or other format. You may also include diagrams, calculations, and/or other manipulations of the data. All tables, graphs, and diagrams should be labeled appropriately. Briefly describe the results illustrated, drawing attention to important data. Interpretation or explanation of data belongs in the Discussion section, however.

Raw data are not presented in the body of the report. Attach your raw data to the back of your report.

Discussion and Conclusion

You analyze results, explain why certain data were important and decide if and how the data support your hypothesis in your discussion. The discussion is based on your actual results, whether they were expected or not. Explain the significance of your results. Were they what you predicted? Why or why not? Discuss any weaknesses in the experimental design, any problems you had. Include suggestions for design changes to improve the experiment and methods to remedy errors or weakness in the design.

Conclusions are part of the discussion and must be supported by results. You can list information from other groups doing the same experiment or from other labs. The conclusion section should be brief and contain no new information. You reiterate significant results, and explain how your data fit into the body of knowledge on the topic. If your results and discussion led to further questions, this is where you address that.

Citations and References Cited

Citations are acknowledgments of the work of others that you are using to support your case. Within the text the source should be cited in parentheses as 'Last Name date' e.g. (Brown 2003). At the end of your report include a list of References Cited with the complete citation. Any source cited in your report must be in References Cited list.