

## Title

*Your name, your partner's name*

*Your affiliation*

**Abstract:** The purpose of an abstract is to summarize your paper, and more importantly, to *sell* your paper to a potential reader. Typically, scientists decide whether a paper is worth their time based on the abstract. Your abstract should have a minimum of three sentences, and should address the following things: 1) What did you set out to do in this experiment? 2) How did you do it? and 3) What were your results? Make sure to include some of your final numbers here.

### Introduction

Give a sort of historical introduction to the experiment if possible. What are you studying,

### Experimental Setup

In this section, describe the experimental apparatus, preferably with a diagram. Then describe what you did. Write in the first person, past tense. Do not use bullet points, and do not copy the procedure directly from the lab manual. Write it in your own words.

### Theory

Explain the theoretical background of the experiment. What are the salient physical concepts/ equations involved? If you have a final working equation against which you will compare the data, show how you derived it. A combination of a few words and some key equations should be enough, no need to show all the explicit math.

### Results

Describe your results here, reference the figures and tables that you have in the report. Just report the results here, and save the analysis for the Conclusions section.

### Conclusion

Briefly restate the main result, discuss its implications, Identify the major sources of error, and give suggestions for reducing those errors as well as suggestions for future experiments.

### References

Cite the sources you used in writing this report, even if you only used the lab manual.

### *Further instructions:*

Your lab report should be between 600 and 1000 words long. Don't worry, this is not actually that hard to achieve. The sample report I wrote on Ohm's law is two pages long (635 words), but that is just a mini-report, and the formal reports you will write in the future will typically require more detail, with between 800-1000 words. You don't have to follow the exact format of the template, but it's not a bad starting point.

### **Graphs:**

Your graphs should have axis labels and units. Error bars and lines of best fit should be provided when applicable. Indicate the slope somewhere on the graph. If you have multiple datasets, represent them with different style markers. Do not display the  $R^2$  value on the graph. The graphs should have a caption. The caption need not be too elaborate.

### **Tables:**

Your tables should have the appropriate units, and should be neatly formatted, with a short caption. If you have a huge amount of data though, there is no need to show it all in tables. Altogether, your tables and graphs should occupy no more than one page of your lab report.

### **Distribution of points:**

Title: 1%

Abstract: 9%

Introduction: 10%

Theory: 20%

Experimental Setup: 10%

Results (including graphs): 25%

Conclusion: 25%