



LESSON 1

PHYSICAL SCIENCE LAB REPORT GUIDE

Use this lab report guide to help direct you in writing lab reports. Every lab report should include the following sections outlined in this guide.

Title

Each lab report should have a descriptive title. The title should clearly explain what you're studying. Also include your name and the date of the laboratory experiment or observation.

A poor title choice might be "Pool Water." A much better title choice would be "Comparing the number of bacteria found in chlorinated and salt-treated pool water."

Introduction

The introduction should describe the problem. This is also where you explain what the investigation is about—why you are doing the lab. You should give some background information, explaining what is already known about this problem.

If your lab is to simply complete observations, which is often the case in science, it's okay to write a problem statement like this: "I intend to make observations about chemicals commonly found around the home and how they interact with each other." It is not acceptable to write, "I'm doing lab #1."

Don't forget to do some reading in your textbook or other resources. The research step is very important. Consult some resources to help you explain some of what is already known about the problem. What have you learned in your lectures or textbook reading? For instance, if you're doing a lab observing plant cells, you could discuss specific structures found in plant cells, noting unique plant cell structures as part of your background information.

Hypothesis

Your hypothesis is a statement that tells what you expect to happen and why. It's important to explain your reasoning; otherwise, your hypothesis is just a random guess. Scientific hypotheses are based on the knowledge you have. Your hypothesis should be written as a statement.

If your lab assignment is just observation, you do not need to make an educated guess about what will happen—no hypothesis is needed.

Materials

In a neat column, list all the materials that are necessary to carry out the investigation. In the labs for this course, this should be easy because the materials list will be given in your directions. However, if you vary the materials used from the instructions, be sure to change that in your lab report.

Procedure

In the procedure section, you'll discuss what you did and how you did it. Using a numbering system, give all the steps in the procedure you used. This should be so complete that someone else could follow your instructions to do the same lab. If needed, you can also draw pictures to help with this step. For instance, if you have an elaborate equipment set-up, a picture may be helpful to someone trying to recreate your experiment.

This part should be fairly easy since you'll have procedures listed in your instructions for completing each lab report. You may use the instructions as a guide; however, an important part of this process is putting into your own words what you did. If you varied the procedures in any way, be sure to indicate this in your lab report. Accuracy is extremely important!

Results

Your results should include information in any and all formats you've collected those results. Be sure to include a written description of your results. In addition, if you collected any numerical data, present this in a neat, easy-to-read data chart or graph. Observations, in the form of drawings, should also be recorded in this section. You're not interpreting your data in this section, just recording what you observed and the data you collected.

Conclusion & Discussion

The conclusion is a very important step and should not be skipped. This is the step where you're interpreting the data you collected. In your analysis, you should state whether your hypothesis was supported by the data or not and explain the evidence for your conclusion.

Explain why you think it happened, trying to evaluate the data from an unbiased point of view. Give reasons for why you believe the outcome is or is not consistent with your hypothesis. Were there errors or potential errors that impacted your results? Be sure to discuss those.

This is also where you answer any questions that have been presented in the discussion section of your lab instructions. In your conclusion, you should also record what you learned and any questions this research brought up for you. Give suggestions for more investigation on this topic.

