

Writing a Formal Lab Report

Name

Date

Course – Block

Teacher

Date performed; lab partners

TITLE: A title that describes the lab.

INTRODUCTION: One to two paragraphs describing any background information pertinent to the lab. Any topics explored in the experiment should be addressed. This section includes a specific statement of the question or problem under investigation, and statements about other goals of the laboratory exercise. When applicable, do a literature search on the topic. Be certain to cite your sources. Clearly state the purpose at the end of the section.

PURPOSE: State the purpose of this experiment

HYPOTHESIS: The hypothesis section consists of a statement predicting the outcome of the experiment based on that hypothesis.

For example:

Purpose: The problem is to study the effect of raising the temperature on the volume of a balloon.

Hypothesis: If the temperature of a balloon is increased, then the volume of the balloon will be increased and if the temperature of the balloon is decreased then the volume of the balloon will be decreased, because molecules move faster with increased temperature.

MATERIALS: This section consists of a list of materials, including the quantity of each one, required to carry out the experiment. An experiment designed by a teacher will include a list of materials needed, which was developed ahead of time. If it is helpful, a diagram showing experimental apparatus can be shown.

PROCEDURE: The procedure section describes each step in the experiment in enough detail so that a stranger can read it and perform the experiment. In a pre-designed laboratory experiment the procedure is already written and the student only needs to rewrite the procedure in their own words. Make the rewritten procedure short and concise, but make sure it demonstrates an understanding of the experiment. In a lab designed by the student, the procedure should be a complete step-by-step description of how to carry out the experiment.

RESULTS: Brief and concise formal presentation of data.

DATA TABLE: Data is usually presented in a Data Table and includes the following:

Title- The data table should have a descriptive title i.e.) Table 1: the efficiency of plants at converting solar energy into chemical energy

Columns -The data should be aligned correctly in columns with lines separating.

Headings - Each column must have a heading, which describes the type of data found in the column.

Units - Each column heading must include the units of the data in that column.

CALCULATIONS (when applicable!): All calculations must be neatly presented with a subheading that describes the purpose of the calculation. Show the algebraic form of the equations (with VARIABLES), show the data substituted into the equation (include units) and show one sample calculation for each equation.

GRAPHS: All graphs should include a TITLE that describes the data being plotted and AXIS LABELS that include the UNITS of the data being plotted. Some graphs will have a curve (or line) fit to the data. In cases such as this, one include the formula and parameters for the curve.

CONCLUSIONS AND DISCUSSION: The critical analysis section; the place to interpret and evaluate your data and to speculate on other possibilities. The conclusion should answer the questions posed in the purpose section of the laboratory and should also indicate whether the hypothesis is supported by the results. If the results do not support the hypothesis the possible reasons for the discrepancy should be noted and discussed (aka: sources of error). Discussion of the results should include new questions that the results have brought up. If applicable, the discussion should also consider any possible changes needed in the design of the experiment. Refer directly to your results! Literally use data from your table and graphs to support your conclusion. For example, "As seen in Graph 1, the trend in using roller-skates to commute to school has decreased by 87% in the past four years."

WORKS CITED: Use standard MLA format.

A LAB REPORT...

- 1... will be typed using single space or 1.5 (**not double!**). Use of a pencil is REQUIRED for drawings and sketches.
- 2...is to be treated as though it were a manuscript being submitted to a scientific journal for publication. Make it clear, concise, and legible. **Spellcheck and proofread.** Grammatical/spelling errors will cost you!
- 3...will have section headings in order.

INTELLECTUAL RESPONSIBILITY

Any work submitted in your name is to be your work alone. You may brainstorm problems and labs with others, but you must individually write your report. We take this very seriously. If you don't practice academic honest, you compromise your integrity and the integrity of the course. The consequences are clearly explained in the student