

LAB REPORT FORM

Lab reports for all experiments should be submitted in the following form:

Description/Purpose - Write a brief description in a couple of sentences stating what is to be done and the principle to be investigated. A simple diagram or sketch should be included where it clarifies the description.

Data/Observations - All primary data and observations should be included in this section. Organize data in tables with clearly labeled columns, including units. Each table should have a title, identifying the information it contains. Lines around data tables and between columns of data should always be drawn with a straight edge, similar to the example below.

Table 1: Inertial Balance

mass (grams)	period (seconds)

Estimate and make a note of the uncertainty in each measurement. In short sentence form, record any observations of interesting or unexpected occurrences, especially those which may affect the outcome of your experiment. Derived data may also be tabulated, but be sure to indicate how it was computed.

Analysis - This is the most important part of the report. Think. Relate the information you have collected. Include the following features:

1. Graph all repetitive data on graph paper. Graphs should be large but leave wide margins around the axes so that clear parameters and scales can be labeled. The axes on all graphs should be straight lines and every graph should have a title, identifying the system on which the measurement was made.

Include error bars where appropriate. If the data falls on a straight line, within the error margin, draw the straight line with a straight edge. [Note: Many times a straight line graph produces a wealth of information, especially relating to the slope of the line. Using the slope intercept form of the equation of a line, $y=mx+b$, write an equation for the graph and give a verbal description of the relationship.]

If the data does not fall on a straight line, sketch a smooth curve through the points. When indicated, determine the algebraic function of the data that will graph it in a straight line and continue with the analysis of the line.

2. Show complete calculations, including comments as required for clarity.
3. Explain error sources. Compute percent error when a standard or theoretical value is available.
4. Verbalize the logical development of the analysis, leading from the primary data of the investigation to the relationship you have determined.

Conclusion - State whether the investigation supports the principle it was designed to investigate. This statement should logically follow from the verbal development in the preceding paragraph.

Opinion/Reaction - Optional. If you want to "react to the lab" in the sense of telling whether or not it made sense to you, and in terms of its educational value to yourself, you may do so in this section. DO NOT put such subjective reactions in the conclusion.