

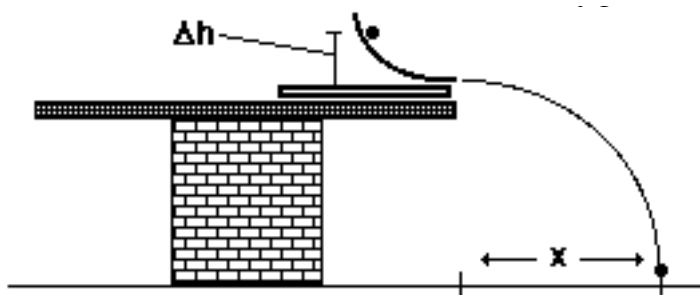
Writing the Physics Lab Report

Labs are the basis for our understanding of the key concepts in physics. What follows are the guidelines for success in writing a quality lab report.

1. You should keep all data collected during the lab in your lab notebook.
2. All laboratory reports are to be written *in pen* on loose-leaf paper or word-processed. *You should write on one side only.*
3. Your name, the name(s) of all members of your laboratory team and the date the investigation was performed is to be written in the upper right hand corner of the first page of each report.
4. An appropriate title for the report should be placed in the center of the first page of the report.
5. Each of the following sections of the laboratory report should be prefaced with the section names.

Purpose - This is a statement of the problem to be investigated. It provides the overall direction for laboratory investigation and must be addressed in the conclusion.

Apparatus - All laboratory apparatus used in the investigation, along with a detailed diagram to illustrate the configuration of the apparatus, should be included in this section. See example below. The variables to be measured should be clearly pictured.



Procedure - This section should identify and name all experimental variables and briefly describe how the independent variables are controlled. Someone who was not present during the lab should be able to understand how the experiment was performed by reading your procedure.

Data - Data consists only of those values measured directly from the experimental apparatus. No values obtained by way of mathematical manipulations or interpretations of any kind may be included in this section of the report. Data should consist of as many trials as judgment would indicate necessary. The units for physical measurements (kg, m, s, etc.) in a data table should be specified in column heading only.

Evaluation of Data - This section should include all graphs, analysis of graphs, and post laboratory calculations. State each formula, and if necessary, identify the symbols used in the formula. If repetitive calculations are to be performed, substitute *only one set of data* into each formula and then construct a **table of values** for all additional calculated values. Be certain that your final calculated values are expressed to the correct number of significant figures. Do not show your arithmetic calculations.

Conclusion - In the conclusion you must do the following:

- a) State the relationship between the variables identified in the purpose in a clear, concise English sentence.
- b) When a mathematical expression can be derived from graphical analysis, write it, making sure to include the appropriate units. State the *meaning of the slope* and discuss the *significance of the y-intercept* (when appropriate).
- c) Describe any new terms that arise as a result of your evaluation of data.
- d) When your results differ from what is expected, provide a plausible explanation.