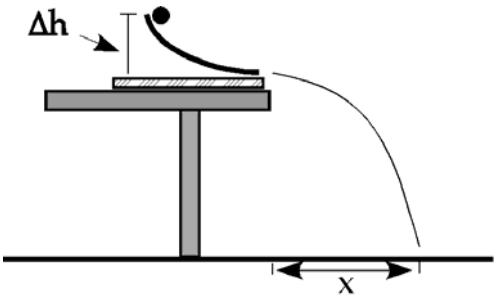
Writing the Physics Lab Report

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 on loose leaf paper in your physics binder.
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 lower 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. Usually the goal is trying to find out how two variables are related in a specific situation.

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 at right. 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. Your independent and dependent variables for each relationship being studied should be here as well.

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 (including the linearization(s)), analysis of graphs, and post laboratory calculations. You are to state the type of relationship(s) found between the variables in each graph. You must include the equation found describing each relationship. Finally, the equation must contain the correct units, which must be consistent with your graphical results.

Conclusion In the conclusion you must do the following:

a) State any new terms developed in the lab. If there was a new concept, describe the concept and how you could apply and extend it to similar situations.
b) State the *meaning of the slope* and discuss the *significance of the y-intercept* (when appropriate) for each relationship found in your experiment.
c) State the general relationship(s) found in the post lab discussion. These are the final relationships/equations which could apply to any situation. *Doesn't include your data..must be generalized.*
d) When your results differ from what is expected, provide a plausible explanation. If your results agree, state that your results agreed with the class consensus.