

How To Write a Lab Report

Name

Date

Partner's Name(s)

Title: The title says what you did. It should be brief (aim for ten words or less) and describe the main point of the experiment or investigation. An example of a title would be: "Effects of Ultraviolet Light on Borax Crystal Growth Rate". If you can, begin your title using a keyword rather than an article like 'The' or 'A'.

Purpose: Explain what the goal(s) of the lab are and why it was performed.

Materials: List everything needed to complete your experiment.

Procedure: List the steps (numbered list) you completed during your investigation. It should be sufficiently detailed that anyone could read this section and duplicate your experiment. Write it as if you were giving directions for someone else to perform the lab. It may be helpful to provide a Figure to diagram your experimental setup. Do NOT use personal pronouns (I, we, etc.).

Data (Table): Numerical data obtained and observations from your procedure; usually is presented as a table. Data encompasses what you recorded when you conducted the experiment. It's just the facts, not any interpretation of what they mean. Be sure to properly label the data and have proper units.

Figures & Graphs: Graphs and figures must both be labeled with a descriptive title. Label the axes on a graph, being sure to include units of measurement. The independent variable is on the X-axis. The dependent variable (the one you are measuring) is on the Y-axis. Be sure to refer to figures and graphs in the text of your report.

If you are using regular graph paper or a preprinted data sheet, you may attach it to the lab rather than cutting it out and taping it in.

Calculations: Show all required mathematical calculations. Be sure to label clearly and show all work. Use the *Factor Label Method* where applicable.

Discussion and Analysis of results: Explain the results in terms of the purpose. Interpret the data, and discuss any mistakes you might have made while conducting the investigation (analyze experimental error). Be specific as to what caused the error. Describe ways the study might have been improved. Provide background and theory pertaining to the experiment. If research is done for this section, be sure to cite any sources used.

Conclusions: The conclusion sums up what happened in the experiment. Explain/summarize the scientific concept the lab was using.

Examples of some FORBIDDEN TERMS: 1) I learned a lot from this lab. 2) This lab was fun 3) We learned about_____.

General Lab Tips

- 1) Be Concise. In scientific writing it is important to write important items using as few words as possible. Reports should be thorough, clear, and straightforward. AVOID repetition.
- 2) Avoid using personal pronouns such as "I" or "We" when referring to the experimental procedure. For example, instead of "I boiled 50 ml of water for 10 minutes," the report should read, "50 ml of H₂O was boiled for 10 min."
- 3) Use correct verb tenses.
- 4) Be prepared for the lab. If you understand what you will be doing before beginning, it will be much easier to take relevant notes during the lab and to see what you will need to include in your lab report.
- 5) Take good/detailed lab notes. This includes, but is not limited to, materials and equipment used, observations, and anything out of the ordinary that happened. Set up a data table to record your results beforehand.
- 6) Do not copy the lab handout word for word. Be concise and make sure to include changes made to the procedure.
- 7) Write about what really happened, NOT what "should" have happened. Explain what might have gone wrong and suggest ways to improve the experiment in the discussion section. *Grades are based on understanding of the experiment rather than results achieved.*
- 8) All safety guidelines must be followed.
- 9) The lab report is a record of everything that takes place during the experiment. Unambiguous statements of what was done and observed are noted as a factual account of your work.
- 10) Labs are due at the beginning of class on the assigned due date, or received via e-mail to the teacher prior to the start of the school day. Be sure to save a copy in your "sent" folder.