

Kitchen Chemistry Lab Report Expectations

Title- Heading, Name, Name of Partners, Class Name, Teacher Name, Date Lab Report

Introductory Paragraph – This section should be written in complete sentences and should connect lab concepts to class content. The introduction should provide background information on the history of the concepts tested, scientists, theories, and any laws tested in the experiment. Cite Sources Used. The introduction should contain any prior knowledge on which the experiment is based including an explanation of principles, definitions, experimental techniques, theories and laws.

State Problem / Purpose The objective is a concise statement in complete sentences outlining the purpose of the experiment. The purpose section of a lab is where you tell the reader your reason for doing the lab in the first place and briefly summarize any relevant background information about the experiment, including any relevant chemical equations and/or algebraic equations.

Hypothesis: Possible if _____ then _____ statement. Define any variables such as manipulated, measured, controlled and the cause and effect predicted. The hypothesis is a one-line sentence where you discuss how you'll solve the problem at hand. The statement after "if" is the independent variable. The independent variable is whatever you will do to solve the problem. The statement after "then" is the dependent variable, because what happens will depend on what you did in the first place. Generally, the dependent variable will be the problem you mentioned in the purpose.

Materials: (Bulleted List) The materials section is a list of all equipment, reagents (chemicals), and computer programs that were used to complete the experiment. Drawings of the apparatus setup should be included in this section if needed. The materials list must be complete. Indicate how much of each material will be used in the experiment.

If you plan on arranging some of the equipment into a more complex setup (for example, if you are going to heat something over a Bunsen burner, you will need a ring stand, wire gauze, etc.), draw it as well as mention the equipment used.

Procedure: This section may be written in either paragraphs or numbered steps. Explain the test design, and allow for pictures and diagrams. The procedure is a detailed statement (step by step) of how the experiment was performed such that the experiment could be repeated using your report. Safety precautions that were followed should be stated in this section.

The procedure must be written in the impersonal (3rd person) past tense:

We are taking the temperature every 2 minutes. NO

The temperature was taken every 2 minutes. YES

Data / Results / Observations: This is a collection of observations, measurements, multiple trials, data tables, charts, and repeating steps. This section may consist of quantitative and/or qualitative observations of the experiment. A qualitative piece of data is a written description and/or sketch of what was seen during the experiment. Quantitative information may be in the form of a table or simply a written description.

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When graphs are required, special attention should be paid to the following items: the type of graph expected (straight line or curve), utilizing the entire graph paper, plotted point size, title of the graph, and axis labels. When numerous measurements have occurred, data is to be placed in a data table whenever possible. Figure headings are placed below the figure and should give a short description of the figure. The figure number should be in bold print. Table headings are found above the table and should also have a brief description.

Analysis / Calculations: Graphs, Error Calculations, Equations, Statistical Analysis - One example of each type of calculation should be included. Results from numerous calculations should be placed in a data table with the proper number of significant figures and correct units. % yield and % error calculations should be included when possible. Conclusion: The conclusion is a concise statement that answers the objective. The result of percent error and/or percent yield should be discussed and compared with known results. A portion of the conclusion should be dedicated to error analysis which discusses any possible sources of error that may have contributed to the percent error or yield. The conclusion should be written in the impersonal past tense. How to change the experiment for improved results, What did you learn? Explain what the results are telling you,

Accept/Reject Hypothesis, Answer any Questions posed by the lab or teacher. A one-line sentence that supports the hypothesis or states that the hypothesis is incorrect. For example, if you proved the hypothesis that “If I poke myself in the eye, then my eye will hurt”, this first sentence would be “When I poked myself in the eye, it hurt.” If the hypothesis didn’t work, an explanation of what possibly went wrong. These should be specific suggestions (I should have heated the mixture to 55°C), not general suggestions (I should have heated it more). List at least two possible errors in the lab, as well as ways to prevent those errors in the future. The errors you mention should be errors that you can do something about, not mystical errors that probably did not occur.

Works Cited: (MLA Format) Any information borrowed from another source which is not common knowledge must be cited within the text of the report as outlined in the OWL MLA Format Guide. Literature Cited section of the lab report in alphabetical order.

From: Liberty High School Science Department Lab

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