**General Chemistry Unit 1**

**Lab Report Notes**

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| **Objectives**  **Pre-Lab**  **Abstract**  **Introduction**  **Procedure**  **Experiment/ Results**  **Post-Lab**  **Analysis**  **Conclusion**  **Discussion** | I will be able to:   * create a lab report with all the correct sections. * Apply the scientific method to lab reports. * Abstract * Introduction   + Hypothesis * Procedures   + Material list * The abstract explains why the experiment was performed and what conclusions were drawn from the results obtained. * A general guideline for an abstract has five areas of focus: * why the experiment was conducted; * the problem being addressed; * what methods were used to solve the problem; * the major results obtained; * and the overall conclusions from the experiment as a whole. * Do not be misled, however, from this list into thinking that the abstract is a long section. In fact, it should be significantly shorter than all of the others. All of this information should be summarized in a clear but succinct manner if the abstract is going to be successful. * Your abstract should only be 1-2 paragraphs long. * The introduction section of a lab report is where you tell the reader your reason for doing the lab in the first place. * Be sure to include pertinent background information so that the reader can fully understand the findings from your experiment. * This information will come from what we have learned in class as well as additional research. * This section will also include your overarching question/problem, hypothesis, and predictions. * The hypothesis is a testable explanation of the question/problem where you discuss the how/why of the problem at hand. * **Hypothesis:** can be done in two ways: * If \_\_\_\_\_\_\_\_\_\_\_\_\_, then \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * The statement after **“if”** tells what is done with the independent variable. * The statement after **“then”** tells how the dependent variable is affected by the independent variable. **or** * 1-2 sentences explaining how the independent variable affects the dependent variable. * Your hypothesis must explain the question/problem and be testable. It should not be a prediction of results. * The procedure section of a lab report will include the ‘how’ and ‘what’ of your experiment. * This is a very clear, step-by-step list of procedures you plan on doing during the experiment. * Each step should be short and concise. You must also include your material list. * **Materials:** * Your materials list must be VERY complete. * You need to indicate how much of each material will be used in the experiment so you know what you’ll need.   If you plan on arranging some of the equipment into a more complex setup (for example, if you’re going to heat something over a Bunsen burner, you’d need a ring stand, wire gauze, etc.), draw it as well as mentioning the equipment used.   * As you are conducting your procedures, collect data, make observations, design a chart, etc. in which to organize your data. * Be sure to record your data in your lab composition book. * Create graphs if needed to present data. * Analysis:   + (Statistically) analyze data from results section   + Graphs or charts of data. * Conclusion:   + Discussion (What does it mean?)   + Communication * Create charts or graphs of your data. * Conduct statistical analysis of your data (mean, median, mode, variance, standard deviation) * You must explain where your data came from or show your work for any math that you needed to compute to complete your data charts, etc. * In this section you will discuss what your data means. * This needs to be thorough! * The conclusion is also where you state whether or not your hypothesis was supported. * Use evidence (from your results section) to support your conclusion! * What now? This is where we explain where we are headed next after we have completed our experiment. * You must include a brief error analysis section. * You should list at least two things that could have caused errors in the lab as well as ways you can prevent those errors in the future. * The errors you mention should be errors that you can do something about, not mystical errors that probably didn’t happen. * You should also tie in any relationships to current class content and objectives. |