

## Honors Chemistry Lab Report Format – Mr. Thompson

During each unit, you will be asked to complete at least one formal laboratory report. All reports must include the following:

**1. Title of lab, name, lab partner(s), due date, and class period.**

**2. Purpose or Goal of the experiment**

This is a short summary of what you hope to achieve during the experiment. It should be no more than 1-2 sentences long.

**3. Experimental Data**

Anything you measure during an experiment should be presented in a well-organized data table with a descriptive title and appropriate headings (with units). Some experiments will require you to graph data. Graphs should be drawn on graph paper or printed from a computer and must include a descriptive title and labeled axes (with units).

**4. Observations**

Observations should specifically describe what you see, hear, feel, and smell during an experiment. They can be made in note form or in complete sentences.

**5. Calculations**

Calculations should be carefully labeled so that the reader can follow each step. Answers should be expressed with the correct number of significant figures. In addition, you must include units in your answers. For example:

$$\text{Density of Liquid A} = \frac{66.45 \text{ g}}{67.8 \text{ mL}} = \mathbf{0.980 \text{ g/mL}}$$

**6. Answers to Questions**

Answer questions in the order they're presented on your instruction sheet. Some of these questions may require calculations; if so, follow the same format described above. Otherwise, please answer questions in complete sentences.

**7. Error Analysis**

In this section, list at least THREE sources of experimental error and discuss *specifically* how they may have affected your results. Whenever possible, calculate your percent error and discuss both the accuracy and precision of your results.

**8. Conclusion**

The conclusion should restate the results of the experiment. For example, "The density of liquid A was experimentally determined to be 0.980 g/mL." In addition, the conclusion should answer the following questions:

- Did you reach the goal of the experiment?
- What did you learn? Why is it important?
- What improvements could be made to this experiment?

Conclusions should be concise but should also demonstrate a strong understanding of the concepts demonstrated in the experiment. Please do not summarize the procedure!

***On a few occasions, I will ask you to design your own laboratory experiment. When this occurs, you must also include the following in your lab report:***

- **Materials List\***
- **Numbered Procedure\***
- **Safety Precautions\***

\*For most experiments, I will provide you with the items listed above. If this is the case, you DO NOT have to re-type them into your reports!

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## **Notes:**

- **Formal lab reports must be typed.** I will be happy to give passes for the computer lab during study hall periods. In addition, there are computers available to students in the library and in my classroom after school. You will have one week to complete all reports, so please do not wait until the last minute. A computer or printer problem is not a valid excuse for a lab being late. Plan ahead!
- Microsoft Word comes with a program called *Equation Editor* that makes typing calculations much easier. Go to INSERT → OBJECT and select “Microsoft Equation 3.0” from the object list. This program doesn’t install automatically, so you may need your original program disk the first time you open the program. Other word processing programs may have similar functions – see me if you have questions.
- Please learn the shortcuts for subscripts, superscripts, arrows, degree symbols, etc. and use them in your reports. “H<sub>2</sub>O” looks much more professional than “H20.”
- Some experiments require detailed observations with little or no data. Some require collecting extensive data and have few observations. Some require graphs, some do not. Some include questions, some do not. The point is that each lab report will be slightly different.
- Writing is just as important in science as it is in any other subject area. When drafting error analyses and conclusions, I encourage you to do some peer editing. Take the time to read, reread, and revise your work before you hand it in.
- Finally, remember that **presentation** is an important aspect of a well-written lab report. The “little things” are sometimes just as important as the lab report itself. I encourage you to take pride in your work!