

## LAB REPORT FORMAT

The laboratory report should be neat and organized. It should also be written in a scientific manner, meaning that the writing is objective and uses the past tense. It is to be type written. When working with a partner or in a group, each student must turn in a separate, individual report (*not duplicates!*).

Each lab report should contain the following:

- **Title/Source/Partner Name/Date:**
- **Purpose:** Write one or two sentences that describe the reasons or objectives for completing the lab.
- **Chemical Reaction:** List the balanced chemical reactions involved in the experiment, if applicable.
- **List of Materials:** Include a list of materials needed to complete the experiment.
- **Safety Considerations:** List applicable safety rules to consider in this experiment. Include special handling and disposal instructions.
- **Procedure:** In your own words, write the directions (or log) for the experiment in a numbered step-by-step list. Write the procedures with enough detail that experiments could be reproduced from what is written. The text may have a sequence that is not suitable for the lab, so you may have to write the steps in a different order than presented in the literature. For instance, towards the end of a procedure, you may be told to pour boiling water over a substance. When you write the procedure in your notebook, you may want to make an earlier step directing you to begin heating the water so that it is ready by the time you need it.
- **Data Table(s):** Create a data table of recorded data collected during the experiment. Record the information from the experiment in the table while conducting the lab in your notebook so that it may be reproduced in the lab report. Include units for all measurements. Any physical results such as a chromatogram will be turned in with the final typed report.
- **Observations:** All observations noted and collected during the experiment should be stated in the report. Record these in your notebook during the lab so that they can be reproduced in the report. Include anything you do, see, smell, hear, etc.
- **Calculations/Results:** Include all pertinent calculations. For all calculations, the equation must be expressed in words first before numbers are used in the equation. Show work for calculations, express all answers to the correct number of significant digits and include units. For repetitive problems, provide one sample calculation (with appropriate units) for each type of calculation. Percent error should be calculated in this section.

*For example:*

Mass of substance = mass of substance and beaker – mass of beaker

$$24 \text{ g} = 63 \text{ g} - 39 \text{ g}$$

Volume of object = Volume of water and object – volume of water only

$$2.0 \text{ mL} = 14.3 \text{ mL} - 12.3 \text{ mL}$$

$$\text{Density} = \frac{\text{mass}}{\text{Volume}}$$

$$= \frac{24 \text{ g}}{2.0 \text{ mL}}$$

$$= 12 \text{ g/mL}$$

- **Graphs:** Data should be graphed with maximum use of the paper, labels on both axes with units, a title, and a best fit line or curve through the data. Write the equation expressing the relationship between the variables. Graphs may be hand drawn on graph paper or prepared on a computer. Tape graphs into the notebook. Not all activities will require a graph.
- **Conclusion:** should contain the following:
  - (2-3 sentences) Restate the overall purpose of the experiment and how the procedure enabled you to accomplish it. Do not repeat the whole procedure!
  - (2-3 sentences) Discuss overall results and draw conclusions from your data. Discuss possible trends in the data/graphs (if applicable).
  - (2-3 sentences) Describe likely sources of error. Weighing errors, misreading of digits, balance inaccuracies, etc. should be included only if you seriously believe they were applicable to your work.
- **References:** Include when applicable; list in MLA format