**CHEMISTRY LAB NOTEBOOK**

The required laboratory notebook is an important part of the Chemistry laboratory experience. These written records of what transpires in the laboratory are critical to the practice of chemistry and other laboratory sciences. In the real world, they are the basis of:

1. Published results of investigations
2. Verification and reproduction of important procedures
3. Determination of claims of discoveries and ownership of inventions

The objective of a laboratory notebook entry is to permit another scientist to be able to reproduce the procedure and get the same result.

What should go in the notebook?

1. Table of Contents – first two pages
2. Title of Experiment
3. Names of Individuals in Group
4. Purpose of lab
5. Materials needed to complete lab
6. Safety Concerns/Hazards
7. Methods/Procedure
8. Data and Observations (include important Chemical Reactions)
9. Results (Calculations)
10. Conclusion and Discussion

Additional Guidelines

1. All entries are made in pen (blue or black are preferable).
2. If a mistake is made, a single line is used to cross out the mistake. The correction is dated and initialed.
3. All pages are numbered sequentially in the upper outside corner.
4. Do not remove pages from the notebook.
5. Sample calculations must be shown. All calculated values should have a calculation shown to support them.
6. Sign and date every entry in the notebook.

In the results section you should follow the “REE, PE, PA” method.

**REE = results with evidence and explanation**

Give the answer to the purpose question (results) with numerical data, if possible, as evidence. For most experiments, averaged data are the best numerical answer to a purpose question. Then, explain whether the data support or refute the hypothesis and why. Give specific examples.

**PE = possible errors**

Identify the sources of experimental design errors that would lead to false or misleading data, and explain the possible implications from making such errors. Once potential errors in experimentation are identified, give recommendations to improve the experiment to minimize these sources of errors. The goal is to design experiments that have the most reproducible and reliable data.

**PA = practical applications**

Discuss the meaning or value of the experimental results in the short term and in the long term. How are the findings valuable to the scientist, the company, or the scientific community? What recommendations can be made about using the data or for planning future experimentation? Often, the next experiment is only a slight modification or refinement of the previous one.

