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# To The Student

This laboratory manual was written to introduce first year college chemistry students to some of the techniques of experimental chemistry. In addition, the experiments illustrate principles conveyed in the lecture. As a result, the laboratory assignments should also serve to review and clarify many of the lecture topics.

In order to benefit from each aspect of the laboratory, the introduction and procedures for each experiment should be read and understood before performing the experiment. It is important to recognize what data will be collected and how that data will be used to obtain the desired results.

Both data and results should be recorded on the laboratory sheets provided with each experiment. Data are collected in the laboratory and should be recorded in ink directly on the data sheets. Incorrectly recorded data should be neatly crossed out with one line and the correct data should be substituted above or next to it. Results, graphs, and the short summary of the purpose, introduction, and conclusions may be completed after the laboratory. The entire report should be submitted to the instructor at the beginning of the following laboratory session.

# Laboratory Safety

There are potential dangers in any chemistry laboratory. Chemicals may be toxic or explosive, and laboratory work often involves experiments leading to unknown results.

In a first year college chemistry laboratory, experiments with extremely hazardous chemicals or completely unknown results are avoided. The most common accidents are cuts, spills, and burns. Laboratory procedures should be followed carefully and the chemicals used in the experiments should be handled with caution.

Many accidents can be avoided, and the injury done by those that occur minimized, by using common sense and following a few basic rules.

1. Never work in a laboratory that is not supervised.
2. Always wear safety glasses in the laboratory.
3. Know where safety equipment (eye baths, fire extinguishers, fire blankets, and showers) is located and know how to use it.
4. Store coats and books away from the work area.
5. Keep the working area in the laboratory neat and clean.
6. Never perform unauthorized experiments.
7. Never return chemicals to the stock bottles. To avoid waste, take only the quantity of chemicals needed for the experiment.
8. Dispose of chemicals as directed.
9. Never pour water into acid.
10. Never taste chemicals.
11. If an accident does occur:
  - a. Report it to the instructor immediately.
  - b. Clean up spills and broken glass as directed.
12. Wear sensible clothes.
13. Tie back long hair.

All students must watch the safety video and take the quiz posted at this EH&S web site:

<http://www.york.cuny.edu/administrative/environmental/environmental-health-and-safety-ehs>

You can also get there from the York home page by going to the tab labeled "Faculty/Staff/Offices," go to Administrative Affairs in the menu that pops up, then choose Environmental Health and Safety. The video can be started by clicking the small screen on the right side of the page.