

# Chemistry CP

## Writing Laboratory Reports

Name: \_\_\_\_\_

Section: \_\_\_\_\_

Scientific work has little value unless the information is made public, so that other scientists can verify and expand on the experiments to learn more about the topic. This is done by publishing the work in the form of a written article in a scientific journal. Prominent chemistry journals include Science, Nature, Journal of the American Chemical Society, and Proceedings of the National Academy of Science, and many others. Therefore, when we do a lab, we too will “publish” them in the form of formal laboratory reports.

Labs are graded on a 100 point scale. Lab reports MUST include the following information, which are assigned point values as follows:

- An appropriate hypothesis statement and introduction for your experiment (10 pts)  
Scientists discuss the background and purpose of their experiments, and where appropriate include a hypothesis (a proposed or expected outcome for the experiment). Include the purpose or hypothesis of the lab, and a discussion of the relevant theory (minimum 4 sentences). It must be written using complete sentences.
- The names of all your group members (9 pts)  
Scientists give credit to their collaborators when the work is published. Therefore this list should be complete—use first and last names, spelled correctly. Also, include each group member’s role.
- A list of the materials used in your experiment (15 pts)  
Scientific publications always include lists of the reagents and the equipment used, so that other scientists trying to repeat or extend the experiments can carry them out under similar conditions. You need to include all reagents used, as well as the lab equipment used.
- A step by step procedure for your experiment (15 pts)  
Scientists include a description of the actual procedure used in their reports, so that other scientists can replicate the experiment if needed. You should include a numbered list, with the steps that you actually performed in the correct sequence, described in your own words. The procedure should include enough detail so that you could give your procedure to a classmate and he/she could correctly carry it out. It is not acceptable to either copy the procedure word for word from the lab handout. You do not need to include safety equipment (goggles, aprons) in your procedure. The procedure should be written in passive voice (see the course website for more information).
- All of the data collected for your experiment, presented in an appropriate format such as a table or graph (20 pts)  
Scientists are careful to include the relevant data in their publications, so that other scientists can reinterpret the data themselves. Since there is limited room in journals, the data must be presented as concisely as possible. Summarize the data in the form of tables or graphs. You need to prepare your data tables in your lab notebook before doing the experiment (this way you’ll have a better chance of collecting all the data you need!). If calculations are required, give the formulas and show sample calculations.
- Answers to the Analyze and Apply questions, in complete sentences (25 pts)  
Scientists include a discussion of the significance of the work and applications to different areas. This is your opportunity to show me (your instructor) your understanding of the concepts and to extend them to other situations. Show me what you can do! Answers must be written in grammatically correct English. If the question is a problem, show all your work and include all relevant formulas, etc.

- A conclusion, answering the following three questions (at least **two** meaningful sentences for each question, to get credit) (6 pts)
  - What did you enjoy about the lab?
  - What did you learn from the lab?
  - How could you improve the lab or your results, if you were to repeat it?