Biology 3A/3B Laboratory Notebook Guidelines

Keeping a well-documented laboratory notebook is an important record keeping tool that will allow you to remember what you did during the year, month, week or day as you conducted your study. It’s inevitable that you will not be able to remember what you did and why you did a certain procedure or calculation all the time. You cannot rely on your laboratory collaborators to remember the details either. It’s the tiny details that you may omit which could lead more frustration. In addition your laboratory notebook may be important with various issues such as intellectual property, ownership issues, archive of records and even fraud prevention. Hence, it is important to develop the skill in keeping a well-documented laboratory notebook.

Your laboratory notebook is your daily record keeping for everything you do for your experiment. This includes your titles, hypothesis or hypotheses, what you’re planning to do, look up, etc. It’s essentially your daily thoughts regarding every aspect of your project. It’s this laboratory notebook that you will initially turn to as you write your paper, especially the Methods and Materials section. If you stop your project for any extended period of time, you know exactly where you can begin again. In addition, someone who would like to reproduce your results should be able to look at your notes and duplicated your experiment. Remember, your laboratory notebook is your official record keeper of the dates and times as you progress through your project or invention. This can be used as documented proof of who conceived an idea first.

WHAT DO YOU INCLUDE IN THE LAB NOTEBOOK?

Each experiment should have its own laboratory notebook. However, for Biology 3A and 3B, you will be using preexisting laboratory notebooks where former students have documented their study already. Some of these are good, fair and very poor.

On the front of the laboratory notebook, you should have your title and hypothesis(es). Everything you write in your laboratory notebook must be written in indelible ink!

- Make sure you include the specific details for your study.
  - Your planning processes and ideas
  - What, why and how you’re going to proceed
  - There needs to be enough detail that someone with some scientific background would be able to determine how to repeat, proceed with the experiment(s) or why you got the results you got
- Make sure you’re documenting daily in your laboratory notebook with the dates for every entry. For some entries, this may also include time, temperature, rainfall, humidity or any other pertinent recording keeping that may have an effect on your study.
- Your protocol(s) should be documented with enough detail that you or someone else could reproduce. If you’re using another well-documented procedure, say a particular enzymatic assay from Srere, 1969, you can reference the paper, but make sure you record the reagents, lot numbers in each entry. For other studies you may need to include other descriptive details or make sketches (field studies).
• Include anything you may think is significant to your experiment. It may seem trivial now, but may be important when you’re interpreting the results or drawing conclusions. Observations, results and conclusions for the experiment should be included.
• DON’T FORGET THE DETAILS – have I said that already???
• If you have photos or printouts that need to be included in your laboratory notebook, make sure you attach them so they don’t come loose. Larger items should be dated, signed and placed into a binder near your laboratory notebook. For those studies that include the Informed Consent Form, appended a blank one that’s distributed to the participants in the laboratory notebook. The Consent Forms completed by the participants should be placed into a binder and kept with the laboratory notebook. If you’re study included a form that facilitates data recording, append each form to the laboratory notebook.
• If you have corrections that need to be made, please line out the incorrect entry and include the corrections near it or reference where the correction(s) is. Do not scratch it out like a kindergartener nor use white out! DO NOT TEAR OUT PAGES FROM YOUR LABORATORY NOTEBOOK. All records should be made on successive pages. (Note: some laboratories frown on the insertion of materials into the laboratory notebook. We have already mentioned that is okay, but to certain point though).
• Do not start a new page until the previous page has been filled or marked in a way so that you cannot go back and back fill any data or record keeping information.
• Keep your laboratory notebook safe. Remember, you could be working on a patent pending project or breakthrough. So, store your laboratory notebook carefully and keep its contents confidential as it may be of great value someday as you discover the cure all drug. But, for 3A/3B, this is not going to be the case.

The laboratory notebook grading rubric is based upon the comments above.