Keeping a Laboratory Notebook

(Adapted from NC State's LabWrite: http://www.ncsu.edu/labwrite/index_labwrite.htm)

These steps will help you record all necessary information as you perform a laboratory activity/experiment.

Step 1: ***Setting up the lab***

Before you start the lab, review the objectives and procedures you will follow. In your lab notebook, list the materials you'll be using and describe the set-up for this experiment including instrument calibrations (see example below). Take notes about potential sources of uncertainty so that you may refer to them when you are writing the Discussion section of your lab report. You may want to or may be required to draw and label the instruments you'll be using.

Step 2: ***Getting ready to collect data***

In your lab notebook, list all the variables in the experiment, identifying independent variable(s) and dependent variable(s). Beside each variable, give the unit of measurement, where appropriate. In 1-2 sentences, write down your hypothesis (your prediction of the relationship or interaction among variables).

Step 3: *Preparing a table or spreadsheet for recording your data*

Use the list of variables and units of measurement to create a table in your lab notebook for entering your data.

Step 4: *Conducting the experiment*

Carefully follow the experimental protocol. As you conduct your experiment and record your data, take notes in your lab notebook on what you are doing, being sure to note any changes from the protocol. Describe or sketch other observations as you collect data during the experiment. As you record your data, make notes about trends that emerge in the data.

Step 5: *Visualizing the data*

- Establish what types of data you have, **quantitative** or **qualitative** (is the data described by numbers (quantitative) or by observations of changes in qualities such as color?).
- Determine if the data should be represented as a **table** or a **graph**.
- If you decide to use a graph to represent your data, determine which **type of graph** is one that best represents your data.
- If a table is the best format for your data, then modify the table you used to collect your data so that it is labeled and organized properly.
- If you need help creating a spreadsheet to make a table or graph, refer to the Microsoft Excel Guide for Graphing Data.
- Remember that the purpose of your table or graph is to summarize your findings for yourself and for others and to reveal trends in your data.

Step 6: *Making sense of your data*

Review all your data (tables, graphs, and drawings) and try to make sense of the overall findings of the lab procedure. In your lab notebook, summarize the overall findings of your experiment in a sentence or two. If your lab instructor says it is permissible, compare your findings with those of other students in the lab. Take notes here of what you found, and if there are any differences in the findings, write down some possible reasons for the differences.