

## LAB NOTEBOOKS

Keeping a thorough lab notebook is an essential part of scientific research. Your notebook should be legible and thorough enough for someone else to read and understand exactly what you did. All protocols and results should be kept in your notebook -- **not** filed in folders or on your desk. Carefully kept records will minimize problems that may be encountered if any questions arise about your results, and may also be useful for future research and publications. The following rules are designed to ensure an accurate and detailed record of your laboratory results.

1. Title and number each notebook for easy reference.
2. Include a running table of contents so experimental results can be looked up quickly and easily. Update the table of contents each time you begin a new experiment.
3. Write your name at the top of each page. Date each page or entry.
4. Each experiment should include the following sections:
  - a. Purpose. Begin with a short explanation of why you did the experiment.
  - b. Protocol. Include a detailed description of what you actually did. Provide sufficient detail so someone could repeat the experiment exactly the way you did it. Indicate how each solution was made. All procedures obtained from other sources (e.g. lab manuals or lab protocols) should be included as a permanent part of your notebook the first time they are used. It is OK to cross-reference previous experiments, but you should specify any any changes or differences in the experiments. Do not count on your memory -- write all observations in your notebook while your are doing the experiment.
  - c. Results. Include the actual raw data in your notebook as well as any plots or calculations. Show any equations used for your calculations.
  - d. Discussion. Include a brief summary of the conclusions. Did the controls work? What do the results mean?
5. Errors should be crossed out with a single line so they remain readable. Do not erase or scratch out errors or tear pages out of your notebook. When an error is made, include a comment on what went wrong and whether the experiment was repeated. This will allow you to figure out what actually happened even a long time after you did the experiment.
6. Tape any attachments (e.g., photographs and print-outs) directly to the notebook. All attachments should include the date and details about how they were obtained (e.g. how long an autoradiogram was exposed, the settings of the spectrophotometer, etc.). Material that is too large or cumbersome to be attached to the notebook (e.g., sequencing autoradiograms) should be clearly marked with the the date and page of the experiment in your lab book.