

# The Care and Keeping of Your Lab Notebook

October 16, 2007

Staple this in the inside cover of your lab notebook.

## 1 Best Practices

1. Use a notebook with graph paper. An 80 sheet notebook should be sufficient.
2. Use only **blue or black ink** in your lab notebook.
3. If any of your work is incorrect, draw a single line through it. You may need to be able to read it later.
4. Include units on all measurements. The only numbers without units should be the date and the page number!
5. When doing a calculation, first write down the symbolic calculation, such as  $E = mgh$ , and define each symbol.
6. Put the date on every page.
7. Box your answers to the questions posed in the lab manual.
8. Include diagrams of your experimental setups, and printouts of data whenever possible.
9. Note the estimated error on all of your measurements.

## 2 How to Organize Information in Your Lab Notebook

Each experiment is broken down into sections. For example, the kinematics experiment is comprised of the following sections: measuring instantaneous velocity, measuring acceleration, kinematic relations for constant acceleration, Atwood's machine, and follow-up questions.

Title and box the name of each section in your lab notebook. Each section must contain the following:

1. **Goals of the section.** What is the purpose of this experiment?
2. **Procedures and descriptions.** What did you do, and how?
3. **Analysis.** What results did you get?
4. **Conclusions.**
  - (a) What results did you expect?
  - (b) How do your results compare with the expected results?
  - (c) If and when you have a result whose expected value is independently known, calculate the percentage error.
  - (d) What were the specific sources of error in your measurements, and how much error did that introduce into your results?

Answers to the follow-up questions go after all of the experimental sections, and should be clearly labeled.

### 3 How To Get An A

If you do everything according to the book, flawlessly, you're guaranteed a B. To get an A on a lab, you also need to extend the experiment. Come up with a related question or measurement, and then try to do it yourself. You can, and should, prepare for this before getting into lab.