

The Lab Notebook

Integrated Physics & Chemistry

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Laboratory notebooks are an integral part of scientific research. They serve as permanent records of actual experimental work. Thus, it is critical that they are both accurate and truthful. In this course, you will implement some of the procedures used by chemists to safeguard against false or inaccurate records.

- ◆ Your lab notebook should be a composition book used only for lab experiments. Write your name and class period neatly on the front cover, save the first two pages for a Table of Contents, and number both sides of the remaining pages in the upper outside corner.
- ◆ In your lab notebook, write neatly using only **black** ink. If you make an error, draw a single line through the mistake. **DO NOT SCRIBBLE OUT ERRORS OR USE WHITE OUT.**
- ◆ Start each lab on a new page and record the title and page number in the Table of Contents.
- ◆ All notes made during a lab should go **directly** in your lab notebook, **NOT** on a separate piece of paper.
- ◆ When turning in your lab notebook for grading, mark the first page of the current lab with a Post-It. Then, have your team manager collect your group's books and turn them in together.
- ◆ Use the following format for each lab unless instructed otherwise. Include headings for each section. You should have the Title and Purpose written before you come to class. If the lab requires a Data Table, you should also prepare that in advance in order to save time during class.

TITLE OF EXPERIMENT

DATE

PURPOSE: In one or two sentences, describe the purpose of the experiment *in your own words*.

PROCEDURE: For inquiry labs, you will design your own procedure. Your group secretary should write down your procedure in his or her notebook. Other group members may simply write: "See (*secretary's name*)'s notebook."

DATA or OBSERVATIONS: Items in this section should be recorded in chronological order *while you are conducting the lab* and should include...

- quantitative measurements such as mass, volume, temperature, etc.
- qualitative observations such as changes in color, appearance of bubbles, etc.
- neat and clearly labeled data – USE A RULER TO DRAW DATA TABLES

ANALYSIS: In this section, you will analyze your experimental data.

- Show all of your work whenever calculations are necessary. Always label each calculation and include units. For example:

$$\text{Density of metal A: } D = \frac{M}{V} = \frac{56.03 \text{ g}}{8.0 \text{ cm}^3} = 7.0 \text{ g/cm}^3$$

- The results of all calculations should be summarized in a Results Table including labels and units for each value.

| | |
|--------------------|------------------------|
| Density of metal A | 7.0 g/cm ³ |
| Density of metal B | 0.79 g/cm ³ |

- Graphs should conform to the *Graphing Guidelines*.

CONCLUSIONS: In this section, you should summarize your findings and/or answer questions as instructed. Write clearly and concisely using complete sentences. Be specific. Avoid using vague pronouns that force the reader to guess what you're describing. **This is the most important part of the report. It's where you tie everything together and show me what you know.**