

# LAB REPORT GUIDELINES • GENERAL CHEMISTRY 2

## SKYLINE COLLEGE

### PRE-LAB

Begin the prelab on a new page of your laboratory notebook. **ALL elements of the pre-lab MUST be completed before an experiment is started.** The duplicate pages marked copy from your notebook will be collected as you enter the lab.

**Heading:** Fill in the heading boxes on the first page of the Lab Report Section.

### **Purpose**

- In 1-3 sentences, explain the question you are trying to answer or the problem you are trying to solve.

### **Procedure Summary**

- In about ½ of a lab manual page, briefly summarize or outline the major parts of the lab procedure.
- Indicate important equipment used and reactions or other phenomena to be studied or observed.
- Do NOT recopy the whole procedure. Do NOT include details like volumes, masses, etc.

**Answers to Pre-Lab Questions:** Answer questions on the lab manual pages and staple to the pre-lab COPY page.

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### LAB REPORT

Begin the lab report on a new page of the lab notebook. The lab report section includes work recorded during the lab, your analysis and discussion of data and results, and your conclusions. A type-written report will be accepted. However, the copy of the instructor-initialed ORIGINAL data from the lab notebook must be included.

**Heading:** Fill in the heading boxes on the first page of the Lab Report Section.

### **Data / Observations**

- This section is a record of what you do and observe, *as you perform the experiment*.
- Tables for data should be prepared prior to the lab session.
- Quantitative data (numerical measurements) must be recorded with *units* in appropriate tables.
- Qualitative data (observations) – colors, textures, evolution of gases, precipitations, etc. – should be recorded here as well. Any modifications you make to the published lab procedures (or procedures you devise in the prelab) should also be recorded here.
- **All data taken in lab must be recorded in pen directly in the lab notebook.**
- Include titles, heading, units *etc.*, on your original tables and any reorganized tables.
- Pages in your notebook with your ORIGINAL data must be signed by the instructor before you leave the lab. The lab report will not be accepted without the signed pages. Though data tables may be reorganized in your report, your original data still must be clear enough for the reader to understand what the data refers to.

### **Calculations/ Results**

- Calculations, tables, graphs, and qualitative verbal descriptions of outcomes.
- All calculations must be shown with original formulas and full solutions. Keep track of units at all steps. Label all calculations, tables and graphs.
- Summarize results in a table when appropriate.

### **Discussion**

#### **Experimental Strategy & Background Theory**

- Explain the process you followed in the lab to solve the problem stated in the purpose.
- Explain the theory behind the steps in the process.
- Write out any important reactions being studied as complete, balanced equations and discuss briefly.

#### **Experimental Findings**

- Discuss the data you collected in the lab and your results or calculations based on that data.

#### **Error Analysis**

- Discuss specific sources of error that may have led to discrepancies in your results.
- Be thorough and accurate about your error analysis. For example, if a value determined is too high, your explanation should be consistent with a value that is too high.
- Include a qualitative and quantitative discussion of accuracy (percent error) and/or precision (standard deviation or relative range) when possible.

### **Results & Conclusions**

- Answers to any questions or solutions or explanations to problems stated in the purpose.
- Clearly indicate the findings of the experiment.
- Make any necessary clarifications about your findings.
- Include any unknown numbers.

**Answers to Post-Lab Questions:** Answer questions on the lab manual pages and staple to the lab report COPY pages.

# KEEPING A LABORATORY NOTEBOOK

## GENERAL CHEMISTRY • SKYLINE COLLEGE

Follow the “General Lab Report Guidelines” handout when writing pre-labs and lab reports. Below are some additional notes about the proper use of the lab notebook.

- *Always write in the lab notebook in PEN with permanent blue or black ink.*
- Do not write in pencil or erasable ink. Do not use felt tip or colorful gel pens.
- *Use a single line to cross out a mistake, and write the correct word or number next to it. Initial the cross-out.*  
Example: ~~mistake~~ mistake
- Do not white out or scribble out mistakes.
- *You must practice real-time entry of data, observations, and steps in the lab. In other words, record data directly into your notebook.*
- *Ask the instructor to review and sign your data pages BEFORE you leave lab each day that you collect data.*
- Do not write on scratch paper, then copy into the notebook later. This could result in the loss or confusion of data and makes the validity of your data suspect. Lab reports will NOT be accepted and you will receive no credit for an experiment if you do not practice real-time entry.
- Organize data tables before you begin collecting data.
- Clearly label and organize each section of your report.
- Clearly label all data tables, calculations, and graphs.
- Keep the *Table of Contents* up-to-date.
- *Remove only pages marked COPY from your notebook.*
- Do not remove the original pages, even if you mess them up. Removing pages makes your data suspect.
- Write lab reports for a college freshman non-science major audience that has a high school education with some chemistry in it. Write for an audience that you assume has not read the lab handout.
- *Neatness and legibility are very important. We must be able to easily read what you write.*