

# LAB INFORMATION PACKET

## PRE-Lab Assignment

USE BLACK OR BLUE PEN IN YOUR LAB NOTEBOOK. NO PENCIL or ERASABLE PEN!  
You can use color to annotate, but the majority of the writing needs to be in black or blue pen.  
Make a mistake? Cross out with a SINGLE line. NO WHITE OUT – EVER!

### GENERAL GUIDELINES

- **Done in your Lab Notebook. Will physically turn in Lab Notebook and/or submit photos digitally.**
- Prelab due prior to the beginning of lab (data tables must be created as part of the prelab, will be filled out later).
- You may not participate in a lab without having it completed.
- The top of your lab handout will tell you which sections need to be completed each time.
- Do NOT do extra sections than what is asked for at the top of your lab handout.
- Sections must be done in the order listed here unless the lab handout says otherwise.
- Sections must be clearly labeled.
- Headers must be filled out at the top of each lab, and you must initial and circle your initials in the bottom right-hand corner of every page. The sticker in the front of your lab notebook shows you how to set up the headers.
- Will sometimes be graded for completion and/or accuracy. Not all completed sections will necessarily be graded every time, one section might be chosen, or all might be chosen for grading.
- Professionalism matters – If I can't read it, if it looks like you did it last minute walking to class, if it looks like you put no thought, effort, care, detail into your work, that will be reflected in your score.
- Must use adequate spacing between sections to keep your work clear and understandable. Do NOT try to save space. You have plenty of pages in your lab notebook. Clearly communicating your work matters more than saving a few pages in your lab notebook. Worst case, I get you a second lab notebook if you run out of space!

### PURPOSE/GOAL/QUESTION OF THE EXPERIMENT

- a. State the general chemistry principle being studied.
- b. State any specific results to be obtained.

### HYPOTHESIS

- a. Must be done BEFORE the lab starts – we never come up with a hypothesis after we do the lab!
- b. Must have the three required parts:
  - If \_\_\_\_\_ (*If I add fertilizer to the soil...*)
    - What are you physically doing in the lab. Be specific. Include chemicals that are being used. Include named techniques you are using.
  - Then \_\_\_\_\_ (*...then the tomato plants will grow taller than the plants without fertilizer...*)
    - What results do you expect to see/obtain? If you have been paying attention to the lessons in class this shouldn't be hard to predict! Our labs are demonstrating concepts we are learning!
  - Because \_\_\_\_\_ (*...because fertilizer has extra nutrients to promote growth than the control soil has.*)
    - Needs to be a scientific explanation. It is showing you understand what we have learned in class and which scientific principle/concept is the explanation for what you are seeing in lab!
- c. These do not literally have to use the words if/then/because – you can use more sophisticated or varied verbiage if you would like.

### PRE-LAB QUESTIONS/TASKS

- a. Complete any listed pre-lab questions.
- b. Number all questions.
- c. Must show all work for calculations.
- d. Do not recopy the question. Paraphrase it into your answers so a reader can infer what the question was.
- e. Full sentence answers are not needed, but complete, detailed and Honors level answers are required!
- f. Box any final numerical or short phrase like answers.

### MATERIALS

- a. List all needed chemicals, and equipment in a bullet list.
- b. Yes this will match your lab handout – that is ok.
- c. Make sure you include relevant concentrations, states of matter, etc.

## REAGENTS TABLE

Name	Formula	Molecular Weight (g/mol)	Physical and Chemical Properties	First Aid Measures	Fire Measures	Accidental Release Measures
		SAMPLE	make yours as big as needed!			

- Any chemicals with a \* need to be included.
- Provide the above info for the state (s, l, g, aq) that is being used in the lab. Sometimes there is different information based on if we are using the solid, liquid, gas form.
- Note safety/cleanup points (if provided on MSDS – **BE DESCRIPTIVE!**)
- We don't really use physical MSDS books anymore. This is my "go-to" MSDS site, but if there is a chemical not listed here then just Google "MSDS" and then the chemical name, look for a free site that has it. <https://www.flinnsci.com/sds/>
- DO NOT squish your information into the table. DO NOT do this at the last minute. **SAFETY MATTERS!**



## PROCEDURE

- Rewrite the procedure in your own words and in FLOW CHART STYLE! A flow chart is a highly visual representation of information. It is not a bunch of sentences with boxes around them...
- Do not copy directly from lab handout!
- Full sentences not needed.
- Do not combine steps. Keep the original numbering system in the lab handout. This is important in case we make changes to the lab, or if you need help you can tell me which step you are on.
- Included drawings of lab setups when applicable. Label the drawings and equipment names.
- Add reminders, equations, notes to yourself, etc.
- The intention is to *think about* the steps by putting it in your own shortened and more visual version.
- You should be able to do the lab with nothing but your notebook!

## DATA TABLE SECTION

- Setting up data table(s) BEFORE the lab starts is part of your pre-lab. The setup may be checked even though you won't be adding data until during the lab. Finished version checked with Post-Lab.
  - I will sometimes show you an example Data Table in the lab handout, but it is not always a finished table! You must always make sure your table is complete, has all the required parts, etc. You do not need to set your table up the same as my sample table necessarily.
- Must include sections for QUANTITATIVE and QUALITATIVE data.
- Make it large – does not have to be an entire page, but it needs to be sufficiently large.
- Give tables a **descriptive** title. It should specifically mention any rxn(s) that is occurring as part of the title.
  - If I found your data table on the floor, I should know exactly which lab it is for.
  - Bad titles – Data Table, Lab Data, Temperatures taken, Taking temperatures of my reaction
  - Better titles – Effect of Concentration on Absorbance, pH of Common Household Substances, Temperature Change for the Reaction of  $\text{MgCl}_2 + 2\text{NaOH} \rightarrow \text{Mg(OH)}_2 + 2\text{NaCl}$
- Must have labels and units in the headers of the columns/rows.
- Data collection should reflect the significant figures that are appropriate for each piece of equipment you are using. Remember that our equipment is inherently limited in precision!
  - Always record data with the appropriate sig figs for **that** device! Some devices/equipment have more/less sig figs than others.
  - Final calculations will be limited by the smallest number of sig figs from the equipment. We worry about that when doing the calculations, not when recording our data.
- Qualitative observations must be descriptive and detailed. It is not sufficient to say "it changed colors," or "it reacted." Qualitative data is as important as quantitative data!

## This pre-lab assignment can change at teacher's discretion

ALWAYS read the top of the lab handout, the assignment instructions posted on Schoology and listen to your teacher's instructions!

Those supersede what is on this handout – this is a generic set of guidelines and expectations.

If in doubt – ASK! Ahead of the due date!