

Dougherty Valley High School Chemistry
Pre-Lab Assignment and Post-Lab Assignment

ONLY BLACK OR BLUE PEN

GENERAL GUIDELINES

- All sections must be clearly labeled.
- Sections must be done in the order listed here unless your lab handout says otherwise at the top of the handout.
- Headers must be filled out at the top of every page used in your lab notebook.
- This will be collected prior to the beginning of lab (except the data tables which are made before the lab, but on a separate page in your lab notebook so you can fill them out during lab).
- You may not participate in a lab without having it completed.
- 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.
- You 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.

PURPOSE OF THE EXPERIMENT

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

HYPOTHESIS

- a. Should answer the general purpose or goal of the lab.
- b. Needs to be in "IF...THEN...BECAUSE" format

REAGENTS TABLE

Name	Formula	Molecular Weight (g/mol)	Physicals Properties			State @ Room Temp (°C)	Safety Concerns
			B.P. (°C)	M.P (°C)	Density (g/cm ³)		

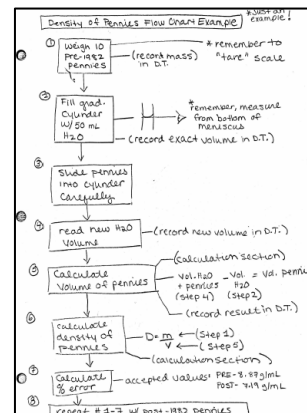
- a. Provide the above info for the state (s, l, g, aq) that is being used in the lab.
- b. Note safety/cleanup points (if provided, all should be – BE DESCRIPTIVE)
- c. Googling MSDS is how to do this! We don't really use physical MSDS books anymore.

MATERIALS

- a. List all needed chemicals, materials, and equipment in a bullet list.

PROCEDURE

- a. Rewrite the procedure in your own words and in FLOW CHART STYLE!
- b. Do not copy directly from lab handout!
- c. Full sentences not needed.
- d. Do not combine steps. Keep the original numbering system in the lab handout.
This is important in case we need to make changes before the lab, or if you need help you can tell me what step you are on.
- e. Included drawings of lab setups when applicable. Label the drawings with equipment names.
- f. Add reminders, equations, notes to yourself etc.
- g. The intention of this section is to get you to *think about* the steps by putting it in your own shortened version.
- h. You should be able to do the lab with nothing but your notebook!



PRE-LAB QUESTIONS

- 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 and detailed answers and thoughts are required!
- f. Box any final numerical or short phrase like answers.

DATA SECTION

- a. **Must be done on a NEW sheet of paper in your lab notebook! It cannot be on the same page as the rest of your pre-lab because you will be tearing out the carbon copy pages of your pre-lab and turning that in before you start the lab.**
- b. Set up your data table(s) BEFORE the lab starts. This is part of your pre-lab assignment even though it is not turned in with the rest of the sections. It may be checked even though it is not turned in until after the lab.
- c. Must include sections for QUANTITATIVE and QUALITATIVE data.
- d. Make it large – does not have to be an entire page, but needs to be sufficiently large. You will be docked points for any work that is “squished,” as that is not professional work and hinders the reader’s ability to learn from it.
- e. You must give your data table(s) a descriptive title. It should specifically mention any reaction(s) that is/are occurring as part of the title.
 - a. Bad titles – Data Table, Table for My Lab, Table of Lab Numbers, Lab Data, etc.
 - b. Better titles – Effect of Concentration on Absorbance, pH of Common Household Substances, etc.
- f. You must have units in the headers of the columns/rows.
- g. Your 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!
- h. Your 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!

CALCULATIONS SECTION

- a. Must show ANY calculation or manipulation of numbers done during and/or after the lab. If it is not a direct measurement, there should be evidence of it in the calculation section.
- b. Sometimes results of calculations are put into your data tables. You still need to show the calc’s here!
- c. Even “simple” calculations need to be shown. This includes subtracting, adding, metric conversions, etc.
- d. Number and label all calculations. Make sure to give short label so people know what the calculation is.
- e. Make sure you include units everywhere!

POST LAB

- a. Post Lab Questions – in lab notebook.
 - a. Number all questions.
 - b. Do not recopy the question. Paraphrase in your answers so a reader can infer what the question was.
 - c. Complete sentences not needed unless asked for. Complete thoughts and answers ARE needed!
- b. Post Lab Two Pager – worksheet given to you.
 - a. Summarizes what you learned.
 - b. Imagine you are making a “cheat sheet” for a lab quiz! You may or may not be allowed to use these Two Pagers on Post Lab Quizzes. It will be announced at the start of the quiz if you can use it or not.
- c. Formal Lab Report Sections
 - a. Not always given. You will be told if/when to do one or more of these formal sections.
 - b. Expectations will be given to you at the time. General expectations are on the Lab Guidelines Check List.
- d. Post Lab Quiz
 - a. Pop quizzes that can happen any time after a quiz.
 - b. Will assess whether you actually *learned* from the lab. It is imperative that you do not just copy lab work from classmates. Lab questions may appear on pop quizzes, chapter quizzes, tests, finals etc.

The lab assignments and expectations can change at teacher’s discretion

Worksheet # _____

Name: _____

Period: _____

Seat#: _____

Lab Title		Topic
Purpose/Question/Problem/Goal/Hypothesis		
Key Vocab Terms	Key Equations	
Key Concept Explained		
Important or Unique Lab Equipment, Set Up, or Named Lab Techniques		Sig Figs Related to Lab Equipment
Your Experimental Results		
Accepted Value/Results	Percent Error Calculation	

Sample Calculations for Each Type of Calculation Done	
Possible Lab Errors	Mathematical Impact of Lab Errors on Results
Example Test Question on this Topic	Solved Example Test Question on this Topic

Things to Turn In

- **Prelab** – Done in lab notebook, carbon papers turned in before the lab.
- **Post Lab** – Turned in after the lab. Due dates will be told to you in class.
 - **Page 1 – Post Lab Two Pager** – Done on this template.
 - **Page 2 – Data Tables** – Done in lab notebook, carbon papers turned in.
 - **Page 3 – Calculation Section** – Done in lab notebook, carbon papers turned in.
 - **Page 4 – Post Lab Questions** – Questions on lab sheet, answers done in lab notebook, carbon papers turned in.
 - **Page 5 – Formal Post Lab Section** - If asked for. Will be given specific instructions at the time.
- **Post Lab Quiz** – Will be done and turned in during class.

Make-up Lab Sheet for Missed Lab Assignment

You can print copies of this on the "Labs" tab of the class website. You have one day longer than you were gone to complete this assignment. Gone one day, then you get two days to complete. Gone two days, then you get three days. If you were present for the lab but did not participate then it is due the next day.

Name:
Period:
Seat #:

Write the name of the missed lab here: _____

Write the date that the lab was originally performed here: _____

Instructions:

Interview at least three (3) students who were present for the lab activity and have them orally answer the questions listed below. Take notes while discussing the lab and staple them to this paper. Please have your interviewees provide their names and signatures in the table below.

Name (Printed)	Period/Teacher	Signature

Now, YOU answer the following questions on this sheet:

1. What was the main idea that this lab activity was trying to demonstrate?
2. How did the lab activity demonstrate this idea (i.e., what did people do to find out the main idea?)
3. How does the information from questions 1 and 2 relate to what we are currently studying?
4. Identify at least one applicable (or use) for the information presented in the lab; that is, how could the information relate to your own personal use, an industrial use, or a societal application?
5. Write two test questions that would be fair to ask about this lab on a unit test or a quiz.

Generic Chemistry Lab Report Guidelines – Specifics given in class supersede these generic guidelines! Please Note: Labs grades are based on quality not just completion! Articulating ideas clearly is key to science!																											
REQUIREMENTS	AREAS TO IMPROVE UPON																										
Format <input type="checkbox"/> 10pt Times New Roman or Arial font ONLY <input type="checkbox"/> 1.5 spaced <input type="checkbox"/> Bold section headings for everything <input type="checkbox"/> 8.5"x11" white paper <input type="checkbox"/> 0.5" margins on all sides <input type="checkbox"/> Abstract has 2" margins on each side and is single-spaced. <input type="checkbox"/> Stapled in following order: <ul style="list-style-type: none"> o Title page o Lab report o Carbon Copy pages used during lab (Must have HEADER filled out on every page) o Carbon Copy pages used for lab report and post lab Q's <input type="checkbox"/> THIRD PERSON, PAST TENSE, PASSIVE VOICE!!!! <ul style="list-style-type: none"> o We know you wrote it...your name is on the front...use third person o You already finished the lab before you did your report! Use past tense! o I know your English teachers don't like passive voice... but it is appropriate for lab reports! <ul style="list-style-type: none"> • Active voice: The hot plate stirred the reaction for three minutes. • Passive voice: The reaction was stirred by the hot plate for three minutes 	Formatting 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 10pt correct font <input type="checkbox"/> Yes <input type="checkbox"/> No 0.5-in margins <input type="checkbox"/> Yes <input type="checkbox"/> No 1.5-in spacing <input type="checkbox"/> Yes <input type="checkbox"/> No Stapled In Order <input type="checkbox"/> Yes <input type="checkbox"/> No 3 rd Person <input type="checkbox"/> Yes <input type="checkbox"/> No Past Tense <input type="checkbox"/> Yes <input type="checkbox"/> No Section Headings <input type="checkbox"/> Yes <input type="checkbox"/> No Abstract Format Justified both sides <input type="checkbox"/> Yes <input type="checkbox"/> No 2-in margins <input type="checkbox"/> Yes <input type="checkbox"/> No Single Spaced <input type="checkbox"/> Yes <input type="checkbox"/> No																										
Title Page <input type="checkbox"/> It gets its own page! <input type="checkbox"/> Title of lab <input type="checkbox"/> Abstract (see below) <input type="checkbox"/> Group members and how they contributed (Name, section worked on) <input type="checkbox"/> Date of lab experiment <input type="checkbox"/> Class and period	Title Page 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> Own page <input type="checkbox"/> Yes <input type="checkbox"/> No Title <input type="checkbox"/> Yes <input type="checkbox"/> No Abstract present <input type="checkbox"/> Yes <input type="checkbox"/> No Group members <input type="checkbox"/> Yes <input type="checkbox"/> No Date <input type="checkbox"/> Yes <input type="checkbox"/> No Class and period <input type="checkbox"/> Yes <input type="checkbox"/> No																										
Abstract <input type="checkbox"/> On Title Page (2-in margins) <input type="checkbox"/> Justified on both sides, do not center on page! <input type="checkbox"/> The following is to be articulated concisely in no more than 3-5 sentence sin the order below <ul style="list-style-type: none"> • Sentence 1: What was the purpose of the experiment? The question or statement. Do not copy from lab handout. • Sentence 2: What you found out (the results – the silver alloy beads were found to contain X% of silver) • Sentence 3: How the results were determined (Brief! Specific names of lab techniques if applicable) • Sentence 4: Report accepted value (if applicable) and percent error. • Sentence 5: Conclusions made (if applicable), what you drew from the experiment 	Abstract 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> <table border="0"> <tr> <td><u>Purpose</u></td> <td><u>Percent error*</u></td> </tr> <tr> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td><input type="checkbox"/> Yes</td> </tr> <tr> <td></td> <td><input type="checkbox"/> No</td> </tr> <tr> <td><u>Results</u></td> <td></td> </tr> <tr> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td><u>Conclusions made</u></td> </tr> <tr> <td></td> <td><input type="checkbox"/> Yes</td> </tr> <tr> <td><u>How results were found</u></td> <td><input type="checkbox"/> No</td> </tr> <tr> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td></td> </tr> <tr> <td><u>Named techniques*</u></td> <td><u>Short, concise and clear</u></td> </tr> <tr> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td><input type="checkbox"/> Yes</td> </tr> <tr> <td></td> <td><input type="checkbox"/> No</td> </tr> <tr> <td><u>Accepted value*</u></td> <td></td> </tr> <tr> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td><i>*if applicable</i></td> </tr> </table>	<u>Purpose</u>	<u>Percent error*</u>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes		<input type="checkbox"/> No	<u>Results</u>		<input type="checkbox"/> Yes <input type="checkbox"/> No	<u>Conclusions made</u>		<input type="checkbox"/> Yes	<u>How results were found</u>	<input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		<u>Named techniques*</u>	<u>Short, concise and clear</u>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes		<input type="checkbox"/> No	<u>Accepted value*</u>		<input type="checkbox"/> Yes <input type="checkbox"/> No	<i>*if applicable</i>
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<p>Background – part of prelab if required</p> <p><input type="checkbox"/> Do NOT copy info from lab worksheet!</p> <p><input type="checkbox"/> Summary/explanation of the important chemistry topics covered in lab</p> <p><input type="checkbox"/> Explain how the topics relate directly to the lab</p> <p><input type="checkbox"/> What will your lab be discovering/testing related to the topics</p> <p><input type="checkbox"/> What is your experimental question/variables</p> <p><input type="checkbox"/> Include relevant chemistry vocabulary</p> <p><input type="checkbox"/> Include relevant chemical equations</p> <p><input type="checkbox"/> Include balancing and states for chemical equations</p> <p><input type="checkbox"/> Number each equation to make referencing easier</p> <p><input type="checkbox"/> Hypothesis if applicable</p> <ul style="list-style-type: none"> • If _____, then _____, BECAUSE _____. Everyone forgets the BECAUSE portion! • Relate it back to the topics covered <p><input type="checkbox"/> Be sure to site any references used including textbook, website, lab manual, etc. Below is a good explanation of ACS formatting.</p> <ul style="list-style-type: none"> • https://libguides.williams.edu/citing/acs 	<p>Background 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/></p> <table border="0"> <tr> <td> <p><u>In Own Words</u></p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> </td> <td> <p><u>Defined Vocab</u></p> <p><input type="checkbox"/> All</p> <p><input type="checkbox"/> Some</p> <p><input type="checkbox"/> None</p> </td> </tr> <tr> <td> <p><u>Chem Topics Explained</u></p> <p><input type="checkbox"/> All</p> <p><input type="checkbox"/> Some</p> <p><input type="checkbox"/> None or incorrect</p> </td> <td> <p><u>Chem Rxns*</u></p> <p><input type="checkbox"/> All balanced w/ states</p> <p><input type="checkbox"/> Some or not bal/states</p> <p><input type="checkbox"/> None or wrong</p> </td> </tr> <tr> <td> <p><u>Connection to Lab</u></p> <p><input type="checkbox"/> All</p> <p><input type="checkbox"/> Some</p> <p><input type="checkbox"/> None or incorrect</p> </td> <td> <p><u>Hypothesis*</u></p> <p><input type="checkbox"/> Yes and correct format</p> <p><input type="checkbox"/> Yes but lacking</p> <p><input type="checkbox"/> Not included</p> </td> </tr> <tr> <td> <p><u>Exp. Q/Variables</u></p> <p><input type="checkbox"/> All identified</p> <p><input type="checkbox"/> Some identified</p> <p><input type="checkbox"/> None</p> <p><i>*if applicable</i></p> </td> <td> <p><u>References*</u></p> <p><input type="checkbox"/> Yes and ACS format</p> <p><input type="checkbox"/> Yes but lacking</p> <p><input type="checkbox"/> Not included</p> </td> </tr> </table>	<p><u>In Own Words</u></p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p>	<p><u>Defined Vocab</u></p> <p><input type="checkbox"/> All</p> <p><input type="checkbox"/> Some</p> <p><input type="checkbox"/> None</p>	<p><u>Chem Topics Explained</u></p> <p><input type="checkbox"/> All</p> <p><input type="checkbox"/> Some</p> <p><input type="checkbox"/> None or incorrect</p>	<p><u>Chem Rxns*</u></p> <p><input type="checkbox"/> All balanced w/ states</p> <p><input type="checkbox"/> Some or not bal/states</p> <p><input type="checkbox"/> None or wrong</p>	<p><u>Connection to Lab</u></p> <p><input type="checkbox"/> All</p> <p><input type="checkbox"/> Some</p> <p><input type="checkbox"/> None or incorrect</p>	<p><u>Hypothesis*</u></p> <p><input type="checkbox"/> Yes and correct format</p> <p><input type="checkbox"/> Yes but lacking</p> <p><input type="checkbox"/> Not included</p>	<p><u>Exp. Q/Variables</u></p> <p><input type="checkbox"/> All identified</p> <p><input type="checkbox"/> Some identified</p> <p><input type="checkbox"/> None</p> <p><i>*if applicable</i></p>	<p><u>References*</u></p> <p><input type="checkbox"/> Yes and ACS format</p> <p><input type="checkbox"/> Yes but lacking</p> <p><input type="checkbox"/> Not included</p>
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<p>Observations/Data</p> <p><input type="checkbox"/> Qualitative and quantitative! Must have both!</p> <p><input type="checkbox"/> Lab notebook paper only, with data tables and graphs made/collected DURING the lab</p> <p><input type="checkbox"/> Professional appearance</p> <ul style="list-style-type: none"> • Clear, large, not squished! • Black or blue ink ONLY <p><input type="checkbox"/> Descriptive titles</p> <p><input type="checkbox"/> Sig figs for measurements and calculations</p> <p><input type="checkbox"/> Label graphs/tables with name of measurement and units</p>	<p>Data Table 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/></p> <table border="0"> <tr> <td> <p><u>Observations</u></p> <p><input type="checkbox"/> Significant, detailed, thorough</p> <p><input type="checkbox"/> Sufficient</p> <p><input type="checkbox"/> Lacking</p> </td> <td> <p><u>Professionalism</u></p> <p><input type="checkbox"/> Total pro, ruler used, readable, etc</p> <p><input type="checkbox"/> Good</p> <p><input type="checkbox"/> Lacking</p> </td> </tr> <tr> <td colspan="2"> <p><u>Titles</u></p> <p><input type="checkbox"/> Strong, descriptive, clear</p> <p><input type="checkbox"/> Good, attempt at being descriptive</p> <p><input type="checkbox"/> Unclear, not descriptive</p> </td> </tr> </table>	<p><u>Observations</u></p> <p><input type="checkbox"/> Significant, detailed, thorough</p> <p><input type="checkbox"/> Sufficient</p> <p><input type="checkbox"/> Lacking</p>	<p><u>Professionalism</u></p> <p><input type="checkbox"/> Total pro, ruler used, readable, etc</p> <p><input type="checkbox"/> Good</p> <p><input type="checkbox"/> Lacking</p>	<p><u>Titles</u></p> <p><input type="checkbox"/> Strong, descriptive, clear</p> <p><input type="checkbox"/> Good, attempt at being descriptive</p> <p><input type="checkbox"/> Unclear, not descriptive</p>					
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<p>Data Analysis</p> <ul style="list-style-type: none"> <input type="checkbox"/> Include table and graph of anything you calculated, manipulated or plotted AFTER the lab. Make sure tables and graphs are labeled correctly <input type="checkbox"/> Explain data that you collected <input type="checkbox"/> Include a few sentences explaining what the graphs/tables show or indicate <input type="checkbox"/> Mention any errors and how they affect your data analysis. Remember "human error" is not an acceptable phrase. <input type="checkbox"/> Include percent errors if applicable <input type="checkbox"/> Include one sample calculation for each type of calculation performed <input type="checkbox"/> Include equations, reactions, units, work, etc. <input type="checkbox"/> Define symbols/variables used <input type="checkbox"/> You may be graded on the accuracy of your lab data and/or whether your calculations are correct or not 	<p>Data Analysis 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/></p> <table border="0"> <tr> <td><u>Data/Graphs</u></td> <td><u>% Error</u></td> </tr> <tr> <td><input type="checkbox"/> All included</td> <td><input type="checkbox"/> Yes</td> </tr> <tr> <td><input type="checkbox"/> Missing some</td> <td><input type="checkbox"/> No</td> </tr> <tr> <td><input type="checkbox"/> Not included</td> <td><input type="checkbox"/> Wrong</td> </tr> <tr> <td><u>Labels</u></td> <td><u>Sample Calculations</u></td> </tr> <tr> <td><input type="checkbox"/> All</td> <td><input type="checkbox"/> All</td> </tr> <tr> <td><input type="checkbox"/> Some</td> <td><input type="checkbox"/> Some</td> </tr> <tr> <td><input type="checkbox"/> None or wrong</td> <td><input type="checkbox"/> None or wrong</td> </tr> <tr> <td><u>Explain Data/Graphs</u></td> <td><u>Eq's, Rxns, Units, etc</u></td> </tr> <tr> <td><input type="checkbox"/> All</td> <td><input type="checkbox"/> All</td> </tr> <tr> <td><input type="checkbox"/> Some</td> <td><input type="checkbox"/> Some</td> </tr> <tr> <td><input type="checkbox"/> None</td> <td><input type="checkbox"/> None or wrong</td> </tr> <tr> <td><u>Errors</u></td> <td><u>Accuracy</u></td> </tr> <tr> <td><input type="checkbox"/> Significant errors</td> <td><input type="checkbox"/> Great</td> </tr> <tr> <td><input type="checkbox"/> Not significant ones</td> <td><input type="checkbox"/> Ok</td> </tr> <tr> <td><input type="checkbox"/> Did not explain impact</td> <td><input type="checkbox"/> Poor</td> </tr> <tr> <td><input type="checkbox"/> Not included</td> <td></td> </tr> </table>	<u>Data/Graphs</u>	<u>% Error</u>	<input type="checkbox"/> All included	<input type="checkbox"/> Yes	<input type="checkbox"/> Missing some	<input type="checkbox"/> No	<input type="checkbox"/> Not included	<input type="checkbox"/> Wrong	<u>Labels</u>	<u>Sample Calculations</u>	<input type="checkbox"/> All	<input type="checkbox"/> All	<input type="checkbox"/> Some	<input type="checkbox"/> Some	<input type="checkbox"/> None or wrong	<input type="checkbox"/> None or wrong	<u>Explain Data/Graphs</u>	<u>Eq's, Rxns, Units, etc</u>	<input type="checkbox"/> All	<input type="checkbox"/> All	<input type="checkbox"/> Some	<input type="checkbox"/> Some	<input type="checkbox"/> None	<input type="checkbox"/> None or wrong	<u>Errors</u>	<u>Accuracy</u>	<input type="checkbox"/> Significant errors	<input type="checkbox"/> Great	<input type="checkbox"/> Not significant ones	<input type="checkbox"/> Ok	<input type="checkbox"/> Did not explain impact	<input type="checkbox"/> Poor	<input type="checkbox"/> Not included	
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<p>Discussion Questions</p> <ul style="list-style-type: none"> <input type="checkbox"/> Answers to provided lab questions, statements, or calculations with work shown and units when appropriate. <input type="checkbox"/> Each Q is numbered and answered in complete sentences. <input type="checkbox"/> Restate the question in your answer, do not just copy the Q! <input type="checkbox"/> Will sometimes be done as part of a formal report as a group, or done individually on the carbon copy paper in your notebook. <ul style="list-style-type: none"> • If done on carbon copy paper but a formal lab report is also typed up, then you must include this section heading in the report but simply say "refer to carbon copy pages at the end of the report." <input type="checkbox"/> Will sometimes be graded for completion, and sometimes will be graded for accuracy. 	<p>Discussion Questions 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/></p> <table border="0"> <tr> <td><u>Questions</u></td> <td><u>Calculations w/ Work</u></td> </tr> <tr> <td><input type="checkbox"/> All included</td> <td><input type="checkbox"/> All</td> </tr> <tr> <td><input type="checkbox"/> Missing some</td> <td><input type="checkbox"/> Some</td> </tr> <tr> <td><input type="checkbox"/> Not included</td> <td><input type="checkbox"/> None</td> </tr> <tr> <td><u>Complete Sentences</u></td> <td><u>Correct Answer</u></td> </tr> <tr> <td><input type="checkbox"/> All</td> <td><input type="checkbox"/> All</td> </tr> <tr> <td><input type="checkbox"/> Some</td> <td><input type="checkbox"/> Most</td> </tr> <tr> <td><input type="checkbox"/> None</td> <td><input type="checkbox"/> Few</td> </tr> <tr> <td></td> <td><input type="checkbox"/> None</td> </tr> <tr> <td><u>Questions Restated</u></td> <td></td> </tr> <tr> <td><input type="checkbox"/> All <input type="checkbox"/> Some <input type="checkbox"/> None</td> <td></td> </tr> </table>	<u>Questions</u>	<u>Calculations w/ Work</u>	<input type="checkbox"/> All included	<input type="checkbox"/> All	<input type="checkbox"/> Missing some	<input type="checkbox"/> Some	<input type="checkbox"/> Not included	<input type="checkbox"/> None	<u>Complete Sentences</u>	<u>Correct Answer</u>	<input type="checkbox"/> All	<input type="checkbox"/> All	<input type="checkbox"/> Some	<input type="checkbox"/> Most	<input type="checkbox"/> None	<input type="checkbox"/> Few		<input type="checkbox"/> None	<u>Questions Restated</u>		<input type="checkbox"/> All <input type="checkbox"/> Some <input type="checkbox"/> None													
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<p>Conclusion</p> <ul style="list-style-type: none"> <input type="checkbox"/> Complete sentences, paragraph form <input type="checkbox"/> Report your final results <input type="checkbox"/> Include accepted value and % error if applicable <input type="checkbox"/> Explain why it turned out the way it did – sources of error, limits in lab design, etc. <input type="checkbox"/> Relate findings back to basic principles of chemistry <input type="checkbox"/> What further experiments might you do to keep studying this? <input type="checkbox"/> How does it relate to real life if applicable? <input type="checkbox"/> How could you make improvements to the lab? 	<p>Conclusion 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/></p> <table border="0"> <tr> <td><u>Complete Sentences</u></td> <td><u>Relate to Chem Topics</u></td> </tr> <tr> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td><u>Results Reported</u></td> <td><u>Further Experiments</u></td> </tr> <tr> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td><u>Accepted Value / % Error</u></td> <td><u>Relates to Real Life</u></td> </tr> <tr> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td><u>Errors</u></td> <td><u>Improvements</u></td> </tr> <tr> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td><u>Level of Detail</u> <input type="checkbox"/> Significant <input type="checkbox"/> Sufficient <input type="checkbox"/> Lacking</td> <td></td> </tr> </table>	<u>Complete Sentences</u>	<u>Relate to Chem Topics</u>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<u>Results Reported</u>	<u>Further Experiments</u>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<u>Accepted Value / % Error</u>	<u>Relates to Real Life</u>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<u>Errors</u>	<u>Improvements</u>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<u>Level of Detail</u> <input type="checkbox"/> Significant <input type="checkbox"/> Sufficient <input type="checkbox"/> Lacking																	
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