Chemistry Lab Report Guidelines Please Note: Labs grades are based on quality not just completion! Articulating ideas clearly is key to science! AREAS TO IMPROVE UPON **REQUIREMENTS** Format 2 3 4 1 🗌 **Formatting** ☐ 10pt Times New Roman or Arial font ONLY 10pt correct font Yes No 1.5 spaced □ No ☐ Yes 0.5-in margins ☐ Bold section headings for everything Yes No 1.5-in spacing 8.5"x11" white paper Yes □ No Stapled In Order \square 0.5" margins on all sides No 3rd Person Yes Abstract has 2" margins on each side and is single-spaced. Yes ☐ No Past Tense ☐ Yes ☐ No Section Headings ☐ Stapled in following order: o Title page **Abstract Format** o Lab report o Carbon Copy pages used during lab (Must have Justified both sides ☐ Yes No HEADER filled out on every page) Yes No 2-in margins o Carbon Copy pages used for lab report and post lab Q's Single Spaced Yes □ No ☐ THIRD PERSON, PAST TENSE, PASSIVE VOICE!!!! 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! Active voice: The hot plate stirred the reaction for three minutes. Passive voice: The reaction was stirred by the hot plate for three minutes Title Page $2 \square 3 \square 4 \square$ **Title Page** 1 ☐ It gets its own page! Yes □ No Own page ☐ Title of lab Yes No Title Abstract (see below) Yes □ No Abstract present Group members and how they contributed Group members Yes □ No (Name, section worked on) ☐ Yes No Date ☐ Date of lab experiment Yes ☐ No Class and period ☐ Class and period Abstract 1 🗌 4 2 3 🗌 Abstract ☐ On Title Page (2-in margins) Purpose Percent error* ☐ Justified on both sides, do not center on page! ☐ Yes ☐ No Yes The following is to be articulated concisely in no more □ No Results than 3-5 sentence sin the order below Sentence 1: What was the purpose of the ☐ Yes ☐ No Conclusions made experiment? The question or statement. Do not copy Yes from lab handout. How results were found Sentence 2: What you found out (the results – the □ No ☐ Yes ☐ No silver alloy beads were found to contain X% of Short, concise and clear Named techniques* Sentence 3: How the results were determined (Brief! Yes Specific names of lab techniques if applicable) ☐ Yes ☐ No Sentence 4: Report accepted value (if applicable) □ No and percent error. Accepted value* Sentence 5: Conclusions made (if applicable), what ☐ Yes ☐ No you drew from the experiment *if applicable

Background – part of prelab if required	Background 1 2 2	3 🗆 4 🗆
☐ Do NOT copy info from lab worksheet!	In Own Words	Defined Vocab
☐ Summary/explanation of the important chemistry topics covered in lab	Yes	☐ AII
☐ Explain how the topics relate directly to the lab	□ No	Some
☐ What will your lab be discovering/testing related to the topics	Chem Topics Explained	None
☐ What is your experimental question/variables	All	Chem Rxns*
	Some	☐ All balanced w/ states
☐ Include relevant chemistry vocabulary	☐ None or incorrect	☐ Some or not bal/states
☐ Include relevant chemical equations	Connection to Lab	☐ None or wrong
☐ Include balancing and states for chemical equations		Hypothesis*
☐ Number each equation to make referencing easier	Some	Yes and correct format
	☐ None or incorrect	☐ Yes but lacking
Everyone forgets the BECAUSE portion! Relate it back to the topics covered	Exp. Q/Variables	☐ Not included
☐ Be sure to site any references used including textbook,	☐ All identified	References*
website, lab manual, etc. Below is a good explanation of	☐ Some identified	$\ \square$ Yes and ACS format
ACS formatting. • https://libguides.williams.edu/citing/acs	□ None	☐ Yes but lacking
	*if applicable	☐ Not included
Observations/Data	Data Table 1 2 2 3	3 🗆 4 🗆
☐ Qualitative and quantitative! Must have both!	Observations	<u>Professionalism</u>
☐ Lab notebook paper only, with data tables and graphs made/collected DURING the lab	☐ Significant, detailed,	☐ Total pro, ruler
☐ Professional appearance	thorough Sufficient	used, readable, etc
Clear, large, not squished! Plants and having ONLY.		
Black or blue ink ONLY Descriptive titles	Lacking	Lacking
	<u>Titles</u>	
☐ Sig figs for measurements and calculations	☐ Strong, descriptive, clear	
Label graphs/tables with name of measurement and units	☐ Good, attempt at being descriptive	
	☐ Unclear, not descriptive	
<u>Calculations</u>	Calculations 1 2 2	3 🗆 4 🗆
☐ Work shown completely	Work Shown	<u>Units</u>
☐ Flow of work is clear	☐ Significant, detailed,	\square All
☐ Work set up correctly to solve actual problem	thorough	Some
☐ Correct numbers used in work	Sufficient	☐ None or wrong
☐ Units provided everywhere	Lacking	Compost Anomore
☐ Correct answer	Organization of Work	Correct Answers
	☐ Clear	□ Most
	☐ Hazy	_
	☐ Cloudy	Some
	-	
	Correctly Set Up	
	☐ All ☐ Most ☐ Some	e 🗆 None

Data Analysis	Data Analysis 1 ☐ 2 ☐	3 🗆 4 🗆
 □ Include table and graph of anything you calculated, manipulated or plotted AFTER the lab. Make sure tables and graphs are labeled correctly □ Explain data that you collected 	Data/Graphs ☐ All included ☐ Missing some	% Error ☐ Yes ☐ No
☐ Include a few sentences explaining what the graphs/tables show or indicate	☐ Not included	☐ Wrong
 □ Mention any errors and how they affect your data analysis. Remember "human error" is not an acceptable phrase. □ Include percent errors if applicable □ Include one sample calculation for each type of calculation performed □ Include equations, reactions, units, work, etc. □ Define symbols/variables used □ You may be graded on the accuracy of your lab data and/or whether your calculations are correct or not 	Labels ☐ All ☐ Some ☐ None or wrong Explain Data/Graphs ☐ All ☐ Some ☐ None	Sample Calculations All Some None or wrong Eq's, Rxns, Units, etc All Some None or wrong
	Errors ☐ Significant errors ☐ Not significant ones ☐ Did not explain impact ☐ Not included	Accuracy Great Ok Poor
Discussion Questions	Discussion Questions 1	
 □ Answers to provided lab questions, statements, or calculations with work shown and units when appropriate. □ Each Q is numbered and answered in complete sentences. □ Restate the question in your answer, do not just copy the Q! □ Will sometimes be done as part of a formal report as a group, or done individually on the carbon copy paper in your notebook. • 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." □ Will sometimes be graded for completion, and sometimes will be graded for accuracy. 	Questions All included Not included Complete Sentences All Some None All Some None	Calculations w/ Work All Some None Correct Answer All Most Few None
	Conclusion 1 2	3 🗌 4 🗌
 ☐ Complete sentences, paragraph form ☐ Report your final results ☐ Include accepted value and % error if applicable 	Complete Sentences ☐ Yes ☐ No	Relate to Chem Topics Yes No
Explain why it turned out the way it did – sources of error, limits in lab design, etc.	Results Reported Yes No	Further Experiments ☐ Yes ☐ No
 □ Relate findings back to basic principles of chemistry □ What further experiments might you do to keep studying this? □ How does it relate to real life if applicable? 	Accepted Value / % Error Yes No Errors	Relates to Real Life Yes No Improvements
☐ How could you make improvements to the lab?	☐ Yes ☐ No <u>Level of Detail</u> ☐ Significan	☐ Yes ☐ No t ☐ Sufficient ☐ Lacking