

Chemistry Lab Report Guidelines

Updated as of 10/09/17

• Format

- ☐ 10pt Times New Roman font ONLY
- ☐ 1.5 spaced
- ☐ Bold section headings for everything
- ☐ 8.5"x11" white paper
- ☐ 0.5" margins on all sides
- ☐ Abstract has 2" margins on each side and is single-spaced.
- ☐ Stapled in following order:
 - o Title page
 - o Lab report
 - o Carbon Copy pages used during lab (Must have NAME on every page)
 - o Carbon Copy pages used for discussion questions
- ☐ **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

Formatting

- | | | | | |
|-------------|----------------------------|----------------------------|--|----------------------------|
| | 1 ☐ | 2 ☐ | 3 ☐ | 4 ☐ |
| 10-pt Font | Y ☐ | N ☐ | Stapled Or. Y ☐ N ☐ | |
| 0.5 Margins | Y ☐ | N ☐ | 3 rd Person Y ☐ N ☐ | |
| 1.5 Spacing | Y ☐ | N ☐ | Past Tense Y ☐ N ☐ | |
| | | | Sec. Heading Y ☐ N ☐ | |

Abstract Format

- Justified both sides Y ☐ N ☐
- 2-in Margins Y ☐ N ☐
- Single-spaced Y ☐ N ☐

• Title Page

- ☐ It gets its own page!
- ☐ Title of lab
- ☐ Abstract (see below)
- ☐ Group members and how they contributed (Name, section worked on)
- ☐ Date
- ☐ Class and period

• Abstract

- ☐ On Title page (2" margins). Do not center on the page. Justified on both sides
- ☐ *The following is to be articulated concisely in no more than 3-4 sentences in the order below* (see rubric)
- ☐ Sentence 1: What was the purpose of the experiment? The question or statement. Do not copy from lab handout
- ☐ Sentence 2: What you found (results...The silver alloy beads were found to contain X% of silver)
- ☐ Sentence 3: How your 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 and instructed by teacher/lab), what you draw from the experiment

Abstract

- | | | | | |
|------------------------------|------------------------------|------------------------------|----------------------------|----------------------------|
| | 1 ☐ | 2 ☐ | 3 ☐ | 4 ☐ |
| <u>Purpose</u> | <u>Results</u> | <u>How (Lab Tech)</u> | | |
| ☐ Yes | ☐ Yes | ☐ Yes | | |
| ☐ No | ☐ No | ☐ No | | |
| If applicable: | | <u>Too Long/☉Clr</u> | | |
| <u>Acc. Val / %Err</u> | <u>Conclusion(s)</u> | ☐ Yes | | |
| ☐ Yes | ☐ Yes | ☐ No | | |
| ☐ No | ☐ No | | | |

• Background – part of your PRELAB Assignment (AP Chemistry) ☐ DO NOT copy info from lab worksheet! ☐ Summary/explanation of the important chemistry topics covered in lab ☐ Explain how the topics relate directly to the lab ☐ What will your lab be discovering/testing related to the topics ☐ What is your experimental question/variables ☐ Include relevant chemistry vocabulary ☐ Relevant Chemical equation(s) ☐ Including balancing and states ☐ Each Equation should be numbered to make referencing easier ☐ Hypothesis if applicable ☐ If _____, then _____, BECAUSE _____. Everyone forgets the BECAUSE part! ☐ Relate it back to the topics covered	Background 1 ☐ 2 ☐ 3 ☐ 4 ☐ <table style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <u>Chem Topics</u> ☐ Sum./Explained ☐ No Sum/Explained <u>Defined Vocab</u> ☐ Yes ☐ No <u>Exp. Q/Variables</u> ☐ Yes ☐ No </td> <td style="width: 50%; vertical-align: top;"> <u>Topics Related to Lab</u> ☐ Yes ☐ No <u>Chem Rx's (Bal/St's)</u> ☐ Yes ☐ No <u>Hypothesis (if app)</u> ☐ Yes ☐ No <u>References (ACS)</u> ☐ Yes ☐ No </td> </tr> </table>	<u>Chem Topics</u> ☐ Sum./Explained ☐ No Sum/Explained <u>Defined Vocab</u> ☐ Yes ☐ No <u>Exp. Q/Variables</u> ☐ Yes ☐ No	<u>Topics Related to Lab</u> ☐ Yes ☐ No <u>Chem Rx's (Bal/St's)</u> ☐ Yes ☐ No <u>Hypothesis (if app)</u> ☐ Yes ☐ No <u>References (ACS)</u> ☐ Yes ☐ No
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• Observations/Data ☐ Qualitative and quantitative! Must have both ☐ Lab notebook paper only with data tables graphs made/collected DURING the lab ☐ Professional appearing (boxes outlined, title – not “Data Table”) ☐ Title: Must include the reaction in name or formula, cannot use “Qual or Quant” of... ☐ Clear, large, not squished! – use one whole page ☐ Sig figs for calculations and measurements ☐ Label graphs and tables ☐ Give everything a <i>descriptive</i> title ☐ Units ☐ Black or blue INK ONLY	Data Table 4 ☐ 3 ☐ 2 ☐ 1 ☐ Quant ☐ Qual ☐ <table style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <u>Observations</u> ☐ Significant ☐ Sufficient ☐ Lacking </td> <td style="width: 50%; vertical-align: top;"> <u>Title</u> ☐ Strong / Clear ☐ Good / No Rxn ☐ Unclear / What? Used ink on C_{copy}: ☐ Y ☐ N <u>Mistakes Cor. w/ 1-line strike:</u> ☐ Y ☐ N <u>Table Appearance</u> ☐ Pro w/ Ruler ☐ Good ☐ Lacking / No Table </td> </tr> </table>	<u>Observations</u> ☐ Significant ☐ Sufficient ☐ Lacking	<u>Title</u> ☐ Strong / Clear ☐ Good / No Rxn ☐ Unclear / What? Used ink on C_{copy}: ☐ Y ☐ N <u>Mistakes Cor. w/ 1-line strike:</u> ☐ Y ☐ N <u>Table Appearance</u> ☐ Pro w/ Ruler ☐ Good ☐ Lacking / No Table
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Calculations ☐ Work shown completely ☐ Flow of work clear ☐ Work set up correctly to solve actual problem ☐ Correct numbers used in work ☐ Units provided ☐ Correct answers	Calculations 1 ☐ 2 ☐ 3 ☐ 4 ☐ <table style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <u>Work Shown</u> ☐ Significant ☐ Sufficient ☐ Lacking </td> <td style="width: 50%; vertical-align: top;"> <u>Correctly set up</u> ☐ All ☐ Most ☐ Some </td> </tr> <tr> <td colspan="2"> <u>Organization of work / flow</u> ☐ Clear ☐ Hazy ☐ Clouded <u>Units:</u> ☐ Yes ☐ No <u>Correct:</u> ☐ All ☐ Most ☐ Some </td> </tr> </table>	<u>Work Shown</u> ☐ Significant ☐ Sufficient ☐ Lacking	<u>Correctly set up</u> ☐ All ☐ Most ☐ Some	<u>Organization of work / flow</u> ☐ Clear ☐ Hazy ☐ Clouded <u>Units:</u> ☐ Yes ☐ No <u>Correct:</u> ☐ All ☐ Most ☐ Some	
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• Data Analysis ☐ Include table and graph (labeled correctly) of anything you calculated, manipulated or plotted AFTER lab ☐ Explain data that you collected ☐ Mention any errors and how they affect your data analysis ☐ Include percent errors if applicable ☐ Include one sample calculation for each type of calculation performed ☐ Include equations, reactions, units, work, etc. ☐ Define symbols/variables ☐ Include a couple sentences explaining what graphs/tables show ☐ You may be graded on the accuracy of your lab data and whether your calculations are correct or not.	Data Analysis 1 ☐ 2 ☐ 3 ☐ 4 ☐ <table style="width: 100%;"> <tr> <td style="width: 33%; vertical-align: top;"> <u>Data/Graphs</u> ☐ Yes ☐ No <u>Labels</u> Y ☐ N ☐ <u>%Error</u> ☐ Yes ☐ No </td> <td style="width: 33%; vertical-align: top;"> <u>Explain Data</u> ☐ All ☐ Most ☐ Some <u>Calc's</u> ☐ Yes ☐ No </td> <td style="width: 33%; vertical-align: top;"> <u>Errors (3+)</u> ☐ Yes ☐ No <u>How Errors Affect Analysis</u> ☐ Yes ☐ No </td> </tr> </table>	<u>Data/Graphs</u> ☐ Yes ☐ No <u>Labels</u> Y ☐ N ☐ <u>%Error</u> ☐ Yes ☐ No	<u>Explain Data</u> ☐ All ☐ Most ☐ Some <u>Calc's</u> ☐ Yes ☐ No	<u>Errors (3+)</u> ☐ Yes ☐ No <u>How Errors Affect Analysis</u> ☐ Yes ☐ No
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• Discussion Questions ☐ Answers to the lab questions or statements or calculation with work. ☐ Each question should be numbered and answered in complete sentences ☐ Restate the question in your answer, don't copy the question! ☐ Will sometimes be done on Carbon Copy paper individually. <i>Still include this section in the report, but simply say "Refer to Carbon Copy pages at the end of the report"</i>	DISCUSSION 1 ☐ 2 ☐ 3 ☐ 4 ☐ <table style="width: 100%;"> <tr> <td style="width: 50%;"><u>Questions</u></td> <td style="width: 50%;"><u>Complete Sent.</u></td> </tr> <tr> <td>☐ All</td> <td>☐ Yes ☐ No</td> </tr> <tr> <td>☐ Most</td> <td><u>Questions Copied</u></td> </tr> <tr> <td>☐ Few</td> <td>☐ Yes ☐ No</td> </tr> </table> <table style="width: 100%; margin-top: 10px;"> <tr> <td style="width: 50%;"><u>Correct Answers</u></td> <td style="width: 50%;"><u>Calculations w/ work</u></td> </tr> <tr> <td>☐ All ☐ Most ☐ Few</td> <td>☐ Yes ☐ No ☐ Accurate</td> </tr> </table>	<u>Questions</u>	<u>Complete Sent.</u>	☐ All	☐ Yes ☐ No	☐ Most	<u>Questions Copied</u>	☐ Few	☐ Yes ☐ No	<u>Correct Answers</u>	<u>Calculations w/ work</u>	☐ All ☐ Most ☐ Few	☐ Yes ☐ No ☐ Accurate
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☐ All ☐ Most ☐ Few	☐ Yes ☐ No ☐ Accurate												

• Conclusion ☐ Complete sentences and paragraph form. ☐ Report your final results ☐ Include accepted value and percent error if applicable ☐ Explain why it turned out the way it did ☐ 3+ different Errors? – How those errors affect the result ☐ Limits in lab design? ☐ Relate findings back to basic principles of chemistry ☐ What further experiments might you do to continue studying this? ☐ How does it relate to real life (if applicable)? ☐ How could you make improvements to the lab?	Conclusion 1 ☐ 2 ☐ 3 ☐ 4 ☐ <table style="width: 100%;"> <tr> <td style="width: 33%;"><u>Results</u></td> <td style="width: 33%;"><u>Acct Val/%Err</u></td> <td style="width: 33%;"><u>Why (errors)</u></td> </tr> <tr> <td>☐ Yes</td> <td>☐ Yes</td> <td>☐ Yes</td> </tr> <tr> <td>☐ No</td> <td>☐ No</td> <td>☐ No</td> </tr> </table> Detail: Significant ☐ Sufficient ☐ Enough ☐ <table style="width: 100%; margin-top: 10px;"> <tr> <td style="width: 33%;"><u>Relate to Chem</u></td> <td style="width: 33%;"><u>Further Exp.</u></td> <td style="width: 33%;"><u>Rel. 2 Real Life</u></td> </tr> <tr> <td>☐ Yes</td> <td>☐ Yes</td> <td>☐ Yes</td> </tr> <tr> <td>☐ No</td> <td>☐ No</td> <td>☐ No</td> </tr> </table> <u>Improvements:</u> ☐ Yes ☐ No	<u>Results</u>	<u>Acct Val/%Err</u>	<u>Why (errors)</u>	☐ Yes	☐ Yes	☐ Yes	☐ No	☐ No	☐ No	<u>Relate to Chem</u>	<u>Further Exp.</u>	<u>Rel. 2 Real Life</u>	☐ Yes	☐ Yes	☐ Yes	☐ No	☐ No	☐ No
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☐ Yes	☐ Yes	☐ Yes																	
☐ No	☐ No	☐ No																	

• References

- ☐ List all sources, e.g. lab manual, textbook, course packet, etc. using ACS Notation (found on chemistryrocks.net)