

Chem 2 – Formal Laboratory Report Guidelines Overview – WS10 (Guideline is Specific to Writing a Synopsis of 3-5 pages.)

*****IMPORTANT:** EACH STUDENT MUST PRODUCE THEIR OWN ORIGINAL REPORT. DO NOT COPY TEXT, TABLES, GRAPHS, ETC. FROM LAB PARTNER(S) NOR FROM ANY OTHER STUDENTS CURRENTLY OR PREVIOUSLY IN CHEM 2. ***

Format

Paper – 8 ½ by 11 white, print to one side, staple top left

Font – Times New Roman 12 point font

Spacing – Double Spaced

Paragraphs – Indent ½ inch, do not put blank line between paragraphs

Margins – 1 ¼ inch margins (Microsoft Office Word default.)

Page Numbers – Top Right Along with Last name

1. Go to Insert - Page Number- Choose Top Right
2. Go to View – Header / Footer – Type Name to the left of the page Number

Outline (for specifics see “Sections” on the next page)

Title Page

Introduction

Experimental Methods (Procedure)

Results and Discussion

Conclusions

References

Appendices

Editing

Spell-check / Grammar check – In Word under Tools there is a tab for “Spelling and Grammar...”

1. Always run a spell-check/grammar check before submitting a paper; however, do not rely on spell-check/grammar check to catch all errors. Sometimes it is easier to have a friend or your lab partner read over the paper to catch any mistakes.
2. Parts of the paper may be written in the passive voice. Grammar check will try and convince you that this is incorrect. Do not believe grammar check. Leave the passages in the passive voice.

Autocorrect – In Word under Tools there is a tab for “Autocorrect Options”. Turning off the following options often makes it easier to type a chemistry report.

1. Correct TWo INitial CAPitals – that way it won't alter HCl to Hcl
2. Capitalize first letters of sentences
3. Capitalize first letters of table cells
4. Correct accidental usage of cAPSLOCK

Autoformat – Also under Autocorrect Options. These may or may not affect your typing.

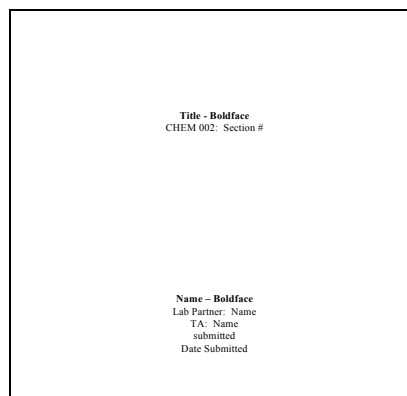
1. Automatic bulleted lists
2. List styles
3. Other paragraph forms

Sections

Title Page

Information should be centered left to right. Title of the report should give a brief description of the work. Your title page will look similar to the format on the right.

Title - Boldface
 CHEM 002: Section #
13 spaces
Name – Boldface
 Lab Partner: Name
 TA: Name
 submitted
 Date Submitted



Introduction:

This is where you explain why someone would want to do this experiment. *Why is this cutting edge work? What do the authors hope to learn? What is the purpose of this work?* You must reference whatever information you use. If you actually cite the information, then you must note this in the text. *See References.*

Experimental Methods:

This is where you describe the hypothesis and the procedure that was followed. *What previous works were used as models? What variables were altered / controlled? How was the data collected? What methods were used to ensure that the data was valid?*

Results and Discussion:

This is where you need to include information about the figures and the textual results. The discussion needs to include any descriptions of physical properties; any discrepancies in the data; any anomalies noted in the graphs; and, any errors that could be avoided the next time the experiment is performed.

Conclusion

This is where you explain how well the experiment went. *Did the authors test what they intended to test? Do you feel their conclusions were valid based on the evidence they presented?* Explain why you think the experimental data was acceptable or not. Finally discuss any suggestions you have for future experimenters. These conclusions need to be supported by the data/information provided in the article.

References

If you actually cite the information, then you must note this in the text with quotation marks around the cited material. If you paraphrase information, you must cite it as well unless it is considered common knowledge. Common knowledge is generally considered information that can be found in 5 or more sites. Sometimes it is easier to cite the paraphrase than it is to confirm that it is common knowledge and list the 5+ sites where you found the information. **Parenthetical notation** may be used. List the author's last name and page number. The last name then will correspond to a listing in the references section. For example:

“Prior to Guttenberg's invention of moveable type, Medieval mankind was forced to rely on a collective societal memory as a resource. The elderly were respected and revered for they had lived through significant events and their recounts of these events were relied upon as facts.” (Burke 93)

Works Cited

Burke, James. The Day The Universe Changed. Boston: Little, Brown, 1995.

References can be listed as “Works Cited” and/or “Works Consulted”. For this paper the MLA format for references is preferred. *Please see next page for proper format for how to cite various types of works.*

Synopsis of the following articles:

Bray, P. Sargent & Ken B. Anderson. "Identification of Carboniferous (320 Million Years Old) Class Ic Amber." 2009. *Science* 326: 132-134.

Grimaldi, David. "Pushing Back Amber Production." 2009 *Science* 326: 51-52.

Questions you MIGHT consider addressing:

Who is doing this study? What is their hypothesis? What is their experimental method? What is their conclusion?

What previous research is this study based on?

Why is this topic significant to the study of science? Is it a new topic of interest? Is there a new method of analysis?

How does it differ from the previous research?

What is amber? What color is it? What type of texture does it have?

What are the modern day uses of amber?

What is resin? How does it differ from tree sap? What function does resin serve to trees with cuts?

How does amber form? (If exposed to light or air, what happens to resins containing terpenoid compounds?)

What are gymnosperms? angiosperms? progymnosperms? pre-conifer gymnosperms?

From where and from what time period did Neolithic people gather the amber?

Where were the Bray & Anderson samples found?

The discovered 320 million year old amber resembles amber from which type of plants? Why is this significant?

Hymenaea belong to which family of plants?

Does the data imply that angiosperms existed in the Carboniferous? Why?

When was the Carboniferous period?

What technique was used to study compound in plant resin?

How does Py-GC-MS help in identifying a plant resin? Why can it be used to identify which plants produced which amber resin?

What is co-pyrolysis? How does it differ from pyrolysis?

At what temperature, are the pyrolysis of compounds from class A done?

How (in previous studies) were infrared spectroscopy and nuclear magnetic resonance used to help determine the compound of the structure? What was the main drawback of these methods? What is the main advantage of these methods over Py-GC-MS?

What type of products are produced from the pyrolysis of Class I ambers?

How did the author in the article figure out the structure of resin from the amber?

Resins are classified into 2 broad groups. What aspects differentiate one group from the other?

What are terpenoids? What are flavonoids? What is succinic acid?

Class I ambers are subclassified on what basis? (How were the subclasses defined?)

Why are the diterpenes considered valuable in assisting scientists to determine the origin of the amber?

On what basis did Bray & Anderson determine that their 320 Mya amber was not from angiosperms?

On what basis did Bray & Anderson determine the classification of their amber? What class was it?

Why do authors indicate that caution should be exhibited while classifying ambers?

The chemical nature of ambers before the Cretaceous and the evolutionary development of resins are still unknown.

Why?

How does author's data support the hypothesis the divergence of biosynthetic mechanisms needed to produce resins was developed far before conifers and differentiation of angiosperms and gymnosperms?

Any other question that you had when you read the article is a worthy question to be addressed. The purpose of this assignment is to make you think about a given topic and then communicate your thoughts. Some of the questions that are listed above are not answered in the articles (e.g., What are the modern day uses of amber?). These are simply questions that we had when we read the article and thought that you might have similar questions.

