

Jane Smith

Miss Gurganus

Chemistry

May 18, 2012

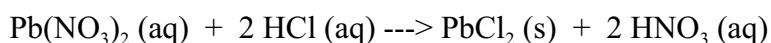
Your Creative, Unique Title Here

Your final chemistry project report is to be written using a blend of the traditional scientific research paper style and the creative writing style you have learned in English class. Someone should be able to take your report and recreate your entire project. The report begins by describing your choice of demonstrations, explains how to prepare them, and ends with a discussion of the chemistry behind your demonstrations. The research section will be the most challenging section to write and should be the longest one. In it, you will teach the reader (me!) about the chemistry behind your demonstrations.

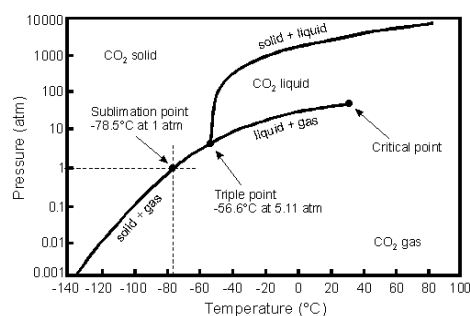
The report is to be a formal, typed paper at least 6 pages long but not over 12 pages long. The report should be typed, double-spaced, with each paragraph indented one tab. The report should be formatted using the MLA formatting described in your agenda planner on pages 50-55. This page is printed using the required format. All margins should be 1 inch. Learn to turn off widow and orphan protection! Do NOT use headings or sections in your report; use paragraphs, sentences, calculations, and graphics only. Since this is to be a formal paper, please avoid using the word *you*. If you do not have a typing program on your home computer, consider the free programs Open Office (from openoffice.org) and Google Docs (through your LHS Gmail).

Graphics (4" or less in height—any width is fine) should be centered and worked into the text near the information they help explain. They should have no words on either side of them. (An example graphic is on the next page.) Full-page graphics will not count toward the total

number of report pages. Only type on one side of each piece of paper. Equations (both chemical equations and math) should also be centered on their own lines. Talk to me about how to make an equation part of a sentence, such as



Pages should be numbered on the top right of the page, 1/2" from the top of the paper, in the header. (Margins of the typed words should still be one inch.) Also note that in a double-spaced paper, an extra line is not added between paragraphs. (Caution: Microsoft Word likes to add extra space between paragraphs. Ask how to remove the extra spaces!)



Pressure-Temperature phase diagram for CO₂.

The typed font needs to be easy for me to read. This paper was typed with Times New Roman - size 12. You must choose size 12; your font choices are Arial or Times New Roman. I do NOT like fancy type (including italics and bold)! When in doubt, bring in a printed sample. DO NOT use larger letters; if you do, I will assume you did not have enough to write and were trying to pad your report. Also note that pencil should NOT be used in your report unless it is colored pencil! (Anything not typed should be in pen/ink/marker/etc.)

Remember that I have to read 100 of these reports! You want me to be in a good mood while reading, so write your report in the following order:

Introductory Paragraph

The first paragraph of your report should introduce the reader to your report and project. It should describe the final chemistry project and its requirements. Be sure to include:

- what the final chemistry project is all about
- some of the requirements of the final chemistry project (demos, presentation, lab reports, typed report)
- the names of the demonstrations you chose
- why you chose your demonstrations

Your introductory paragraph should be an intriguing set of sentences that draws the reader in!
Don't include any research or research topics here.

Preparation and Hazards

After your introductory paragraph, you need to give **very specific** directions on how to prepare and perform each of your demonstrations. Be sure to include:

- detailed** directions of how to prepare each demonstration
- the name and chemical formula (in parentheses) of each chemical used. List the chemical formula only the first time the chemical is mentioned in your report.
 examples> water (H₂O) butyl alcohol (C₄H₁₀O)
- the amounts (grams, milliliters, measurements) of every chemical used
- all the materials and equipment used. Do not write a long, boring list! (Better is to mention the equipment being used in your directions and/or to label them in a diagram or photo)
- the directions on how to make every solution and mixture **even if you did not make them** (except the concentrated acids)
- detailed, labeled diagrams (hand-drawn, computer-drawn, or photos [only if your group actually took the photos]) of each demonstration's preparation/set-up **and** performance
- the hazards of the chemicals (both what you started with and what you created)
- any problems you encountered during preparation, practice, and/or performance
- warnings for anyone who would try to recreate your work [including safety precautions concerning the handling of the chemicals (especially gloves, explosion barriers, and keeping chemicals cold) and the execution of the demonstrations]
- any changes you made from the demonstrations' printed instructions
- any special hints or tricks your group learned/figured out along the way to make the demonstrations work better
- detailed directions on how to perform the demonstrations

Research

The research portion of the report should be the largest section of the paper and will be the most challenging to write. You will need to demonstrate a good understanding of the chemistry behind your demonstrations. **Your goal should be to teach me what makes your demonstrations do the cool things they do!** Imagine I know very little about your demonstrations and research topic. Introduce me to the research topic by helping me understand your research topic's important vocabulary (lists available at http://web.lincoln.k12.mi.us/buildings/hs/gurganus/chem_proj_index.html; choose Research Questions by Topic). Define the vocabulary **IN YOUR OWN WORDS** for the most credit. (If you can't figure out how to put something in your own words, put it in quotes.) For each vocabulary word or concept, use your demonstrations to help you explain it. For example, if one of the vocabulary words is *acid*, once you have defined what an acid is in your own words, tell me what the acids were in your demonstrations and how you can tell.

It is important that you demonstrate throughout your report that you have an understanding of many aspects of your demonstrations. You **must** use examples when describing the different concepts, but **they may only be examples from your project**. **You can not use any reactions or chemicals as examples that you did not use in your demonstrations**. Your goal is to relate every chemistry idea you mention to your two demonstrations. Put everything in your own words! Your research section is **NOT a collection of copied paragraphs**. Find ways to tie the two demonstrations together! Don't mention the same ideas twice!

No matter your research topic, you must include your demonstrations' **balanced chemical equations** with **states of matter**. If any of your chemicals have a structure (such as ethyl alcohol or hexane), the **chemical structure** should be drawn out (showing the bonds) and explained. You need to identify the **reactants and products** of each reaction as well. (Top credit would go to name each of the reactants and products or to include the equation in words along with symbols.) You also need to mention what **type of reaction** each equation is and how you can tell.

Note that you are required to include diagrams to explain vocabulary and concepts related to your demonstrations. (Diagrams may include chemical structures.) Make sure you explain any diagrams to the reader!

My research books and Ms. Makarewich's library will be available many days both before and after school. (Computer time before and after school is also available by appointment.) It is advisable to check with us before you plan on coming in on a specific day. None of the books may be removed from either room by students. We are both willing to copy/print any research pages you need. The first 10 pages are free, but you must donate (to the LHS science department) 10 cents per page for every page after that.

Summary of research requirements:

- definitions of your research topic's key vocabulary
- examples from your demonstrations of your research topic's key vocabulary
- balanced chemical equations of your demonstrations with states of matter
- chemical structures for any covalent compounds (with explanations)
- names of the reactants and products of each equation
- the type of reaction of each equation
- how you determined each type of reaction
- all of the above should be in sentences and paragraphs with good transitions, flow, and a logical order

Chemical Disposal

The project doesn't end when the demonstrations are done. You will need to clean up any left-over chemicals plus the new chemicals formed during your demonstrations. In your report, include the directions needed to treat ALL the waste (including left-over original chemicals that never got used, even if you used all of yours). You can find directions on cleaning up chemical waste in the Flinn catalog (and even sometimes in your demonstration handouts). Be specific! Don't just list numbers! Even if you did not dispose of the chemicals yourself, describe what you would have (or should have) done.

Conclusion

To end your report, describe this learning experience from the day you chose your

demonstrations to your report-writing experience. Be sure to discuss:

- yourself (what you did well during the project, what you could have done better)
- your partner (positives and negatives during the project)
- your lab/prep days (best day, worst day, what went wrong)
- your before/after-school appointment(s) (if applicable; be sure to include dates)
- the presentation (positives, negatives)
- the research/writing
- any problems encountered along the way and the unique solutions you came up with
- suggestions for improvements you would make if you could re-do the project
- your honest, factual opinion of the entire project! This is your chance to praise and rant! (I don't have to like your opinion as long as you justify it.)

In your conclusion, **be honest, be detailed, and be critical** (of yourself and your partner)! [I would love to give every student full credit on the conclusion section, but I can't if you don't include **lots of details!**]

Bibliography and Resources

You will be required to include a complete bibliography, but you do not have to use MLA parenthetical references (so it's a bibliography, not a Works Cited page). The bibliography needs to start on a new page but is NOT considered one of the six pages of the report. Remember to document books, web sites, online images, interviews, and diagrams! If you use a book or web site for even a single idea, it should be listed in your bibliography. **Most critical is to document where you found your demonstration handouts/directions.** A "passing" report will have at least five different sources in its bibliography. Use the bibliography handout for one way to complete the bibliography. [NOTE: Search engines (like Google, Yahoo, Bing, and Ask.com) are not sources. They only lead you to sources. Write down the FULL ADDRESS of any web pages where you find information! Also remember that Internet sources are less likely to be correct than printed sources.] **Put everything in your own words!!!** If you didn't use the source, it should not be in your bibliography.

**EACH PERSON IS TO WRITE HIS/HER OWN REPORT.
THIS IS NOT A GROUP REPORT!!!!**

****For each section copied or similar, BOTH students will receive
NO CREDIT. DO NOT "HELP" YOUR PARTNER ON THE REPORT!****

Special formatting requirements

- two spaces between sentences is the maximum (but one space is also OK)
- **DON'T CAPITALIZE THE NAMES OF CHEMICALS!!!!**
- write out counted numbers (such as three microscoops) but not sizes or measurements (examples are 5.00 g of potassium chlorate and four 30 mL beakers)
- equations (math, reactions, and calculations) should be centered on their own lines
- subscript on many programs: CTRL = superscript on many programs: CTRL SHIFT =
- degree symbol: ALT 248 (on number pad)
- turn off widow and orphan protection!
- no extra line between paragraphs
- diagrams, photos, charts, and graphs should be worked into the text with a maximum height of 4". If you can't figure out how to do that, have separate pages at the end of your report labeled "Figure 1," "Figure 2," etc.

- **DO NOT USE THE WORDS ‘YOU’ or ‘YOUR’ ANYWHERE IN YOUR REPORT!**
- **DO NOT USE COMMANDS** (such as measure)! Tell the reader what **YOU** did!
- Use the past tense! (The report is due after presentation is over!)
- put a space between numbers and units (write 4.00 g, not 4.00g)
- put a zero in front of measurements less than one (write 0.005 g, not .005g)
- staple the pages of your report together with a single staple in the top, left-hand corner
- **no report covers!**
- report due on May 18, 2012 during your class hour (or earlier! ☺)
- 5 points off if turned in later that day; 10 points off for each school day late
- send the report in with a friend (or e-mail it or fax it) if you can't make it to school the day it is due

No printer/computer/ink/paper/Internet/CD/flash drive/typing/etc. excuses will be accepted. Don't have your mom/dad/guardian call or write a note to make excuses for you, either. (It won't work. I've heard it all before. Just get the report done and turn it in on time!)

Other options for turning the report in:

- E-mail me your report (gurganus@lincolnk12.org)
- Bring it in on CD/flash drive for me to print
- Share it with me on Google Docs (gurganus@lincolnk12.org)
- **DON'T** bring in the computer! (Yes, it has been done before.)
- If you want me to print your report, save it in RTF (Rich Text Format)
- PLEASE **DON'T** SAVE YOUR REPORT AS A MICROSOFT WORKS FILE!