

Sixth Grade Show - Research Paper Description and Requirements
Chemistry II - December/January 2009-2010

Now that the show is over, our focus turns to a research paper describing how the show was performed and the chemistry behind the demonstrations. The research paper will be worth 50 points and will be due on Tuesday, January 12, 2010. The paper should be at least six pages long; maximum is fifteen pages. A three-page rough draft (which may be handwritten) will be due on Wednesday, January 6, 2010.

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

****For each section copied/similar, BOTH/ALL students will
receive NO CREDIT.****

DO NOT “HELP” YOUR PARTNER(S) ON THE PAPER!

Title/Cover Page

The title page for your paper should be set up like the title page for a lab book lab, including a creative title, your name, partner(s') name(s), course, hour, date, and abstract. No artwork should appear on the title page.

Introductory Paragraph

The first paragraph of your research paper should describe the overall project, including key requirements. Your introductory paragraph should be an intriguing set of sentences that draws the reader in!

Skit

The next part of your paper needs to be a detailed description of your parts of the show. **I do NOT want a script**, but the reader should be able to recreate your general presentation from your description. Describe the idea(s) behind your skit(s) (commercial, part of the game show, etc.). A general time line (what was done first, what was said first, etc.) is good if it is in sentence form. Explain where each of your demonstrations belonged and what you did in front of the audience to activate the demonstrations. **You are required to include at least one full-color, labeled diagram of how each demonstration was set up on the show table/area. Include people, props, tables, equipment, chemicals, and demonstrations in your diagrams.**

Preparation and Hazards

After describing the skit and presentation, you need to give **very specific** directions on how to prepare each of the chemical demonstrations you used. Include names, formulas, concentrations, and amounts for all chemicals used. Don't forget to include directions on how to make every solution and mixture (other than concentrated solutions) **even if you did not make them! Include a detailed, labeled diagram of each demo preparation set-up AND any props you had to build** (and the directions on how to build them). Discuss the hazards of the chemicals (both what you started with and what you created), any problems you encountered, and warnings for anyone who would try to recreate your work. These warnings should also include safety precautions concerning the handling of the chemicals (especially gloves, use of the fume hood, explosion barriers, and keeping chemicals cold) and the execution of the demonstrations. Most importantly, tell the reader any changes you made from the demonstrations' printed instructions and any special hints or tricks

your group learned/figured out along the way to make the demonstrations work better. Don't forget to describe how to set off the demonstrations if you haven't already done so elsewhere in the paper!

Research

The research portion of the paper should be the largest section of the paper and will be the most challenging to write. In it, you will apply the chemistry topics covered during this semester and research skills to describe the chemistry involved in your demonstrations. I am expecting both qualitative and quantitative research on all demonstrations. Your goal should be to teach me what makes your demonstrations do the cool things they do! Find connecting chemical themes between your demonstrations to make the research more cohesive (and easier to write). **Put EVERYTHING in your own words!**

You need to be able to use the reactions from your demonstrations to illustrate the different chemistry concepts. It is important that you demonstrate throughout your paper that you have an understanding of all the aspects of your demonstrations. You **must** use examples when describing the different concepts, but **they may only be examples from your demonstrations. You can not mention any reactions or chemicals as examples that you did not use in your demonstrations.**

Chemical Disposal

The project doesn't end when the audience leaves. In your paper, include the directions needed to treat ALL the waste (including left-over original chemicals that never got used). 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 it yourself, describe what you would have (or should have) done.

Conclusion

To end your paper, describe this project from day one to your paper-writing experience. Discuss your partner(s), your prep days, and the show itself. Explain any problems encountered along the way and the unique solutions you came up with. Include suggestions for improvements you would make if you could re-do the project. Tell me your honest, factual opinion of the show/project and why! This is your chance to praise or rant! Be honest, **be detailed**, and be critical (of yourself and others)! [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

You will be required to include a complete bibliography at the end of your paper, but you do not have to footnote the paper. The bibliography needs to start on a new page but **is not** considered one of the six pages of the paper (and neither is the title/cover page). Remember to document 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.** A "passing" paper will have at least five sources in its bibliography. [NOTE: Search engines (like Google, Yahoo, 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.]

Formatting requirements

- The paper **MUST BE TYPED, DOUBLE SPACED!!**
- each paragraph indented a tab (or, for less credit, 5 spaces)
- use sentences, paragraphs, equations/math, and diagrams/pictures only (no lists)
- fully justified margins, please (not centered or left-aligned)
- one-inch margins on all sides ****I will be using a ruler to check!****
[Note to MS Word users: Word is often set to 1.25" margins; **YOU MUST CHANGE THEM!**]
- length: 6 (minimum) to 15 (maximum) typed pages; if you have more to say, put the diagrams at the end of the paper (as pages with more than 4.5" of diagram don't count in the total). I will only read 15 typed pages! More than that will be ripped off and thrown away!
- font options: Times New Roman (shortens paper), Arial, or Courier New (lengthens)
- font size: 12
- two spaces between sentences
- **DON'T CAPITALIZE NAMES OF CHEMICALS!!!!**
- no headings (like Research, Disposal, or Skit)
- equations (math and reactions) 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, charts, and graphs should be centered and worked into the text. If you can't figure out how to do that, have separate pages at the end of your paper labeled "Figure 1," "Figure 2," etc.
- **DO NOT USE THE WORDS 'YOU' or 'YOUR.'**
- **DO NOT USE COMMANDS! Tell the reader what YOU did!**
- **Use the past tense! (The show 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 paper together with a single staple in the top, left-hand corner
- no report covers!
- paper due on January 12, 2010 during third hour (or earlier! ☺)
- 5% off if turned in later that day; 10% off for each school day late
- send the paper in with a friend if you can't make it to school the day it is due

NOTES:

I am willing to print papers!

- If you want me to print your paper, save it in RTF (Rich Text Format)
- **DON'T SAVE YOUR PAPER AS A MICROSOFT WORKS FILE!**

Options: - Print the paper yourself and bring it in
 - E-mail me your paper (gurganus@gw.lincoln.k12.mi.us)
 - Bring it in on disk/CD/thumb drive for me to print
 - **DON'T bring in the computer! (Yes, it has been done before.)**

No printer/computer/disk/ink/paper/CD/typing/etc. excuses will be accepted.

Don't have your mom/dad/guardian call or write a note to make excuses for you. I've heard it all before. Just get the paper done and turn it in on time!

Total Score = _____ = _____ %
 50

| Chemistry II - Sixth Grade Show Research Paper | | | | |
|-------------------------------------------------------------------------------------------------|---------------------------------------|-----|-------------|-----------------------------------------|
| Title (cover) page: | | | | |
| 1 | 0.8 | 0.7 | 0.6 | 0 |
| Complete with creative title | Incomplete or improper format | | | Missing |
| Abstract: | | | | |
| 2 | 1.6 | 1.4 | 1.2 | 0 |
| Complete and brief summary | Too wordy or incomplete | | | Missing |
| Introductory paragraph: | | | | |
| 1 | 0.8 | 0.7 | 0.6 | 0 |
| Describes purpose of paper/show | Incomplete or not interesting | | | Missing |
| Inviting to reader | | | | |
| Skit (description): | | | | |
| 3 | 2.4 | 2.1 | 1.8 | 0 |
| Complete & detailed description of skit | Incomplete | | | Missing many details |
| Skit (full-color diagram[s]): | | | | |
| 2 | 1.6 | 1.4 | 1.2 | 0 |
| Neat and complete | Incomplete/messy/not colorful | | | Missing |
| Preparation Description (solutions/mixtures/chemicals/masses/formulas/props/equipment/set-off): | | | | |
| 3 | 2.4 | 2.1 | 1.8 | 0 |
| Complete and detailed | Incomplete description | | No | |
| Includes diagrams | Some diagrams | | diagrams | Missing |
| Preparation Description (warnings/hazards/safety/tips): | | | | |
| 2 | 1.6 | 1.4 | 1.2 | 0 |
| Complete/correct/detailed | Incomplete/not detailed | | | Missing |
| Research - qualitative (general description of the chemistry - definitions, concepts): | | | | |
| 8 | 6.4 | 5.6 | 4.8 | 0 |
| Complete and detailed | Incomplete/brief | | | Missing |
| Research - quantitative (reaction equations, calculations): | | | | |
| 8 | 6.4 | 5.6 | 4.8 | 0 |
| All equations & calculations complete and correctly done | Some equations/calculations correct | | | No equations All calculations wrong |
| Research - connections between demonstrations and use of examples: | | | | |
| 3 | 2.4 | 2.1 | 1.8 | 0 |
| Clear connection | Vague connection | | | No connection |
| Excellent use of examples | Some examples used | | | No examples used |
| Research - demonstrated understanding of demos' chemistry: | | | | |
| 3 | 2.4 | 2.1 | 1.8 | 0 |
| Excellent understanding | Missing some detail | | | No understanding demonstrated |
| Chemical Disposal: | | | | |
| 3 | 2.4 | 2.1 | 1.8 | 0 |
| Complete, correct directions | Incomplete or some incorrect | | | No correct directions |
| Conclusion: | | | | |
| 4 | 3.2 | 2.8 | 2.4 | 0 |
| Complete, detailed, lengthy | Incomplete/brief | | | Missing |
| Bibliography: | | | | |
| 2 | 1.6 | 1.4 | 1.2 | 0 |
| Complete and proper format | Incomplete/improper format | | At least | |
| At least 10 resources used | | | 5 resources | Missing |
| Overall format and quality of the writing: | | | | |
| 5 | 4 | 3.5 | 3 | 0 |
| Proper format/length | Some format/length problems | | | Many format/length problems |
| Proper grammar, spelling | Full sentences but writing needs work | | | Poor spelling, grammar, and punctuation |
| Good flow and style | | | | |