

Term Project Guidelines:

Purpose:

- To develop an appreciation of how chemistry applies to the world outside the classroom.
- To develop the skills necessary to search and obtain useful/scientific information from sources other than a textbook.
- To synthesize learned knowledge with critical thinking to develop practical application and derive meaning conclusions.
- To work as a project team while conducting a research project
- Most importantly, to learn something new, interesting, and FUN.

The project involves researching a topic that describes the chemistry of something that pertains to an outside the classroom setting. The subject of the project should be of interest to the student and preferably relate to his/her background or life.

General Examples:

- Magnetic resonance imaging (MRI): What is it? How does it work? How was the scientific method applied in its development?
- The chemical and physical properties, and usages of an interesting chemical element, compound, or substance (such as americium, Teflon, or mustard gas).
- Chadwick's discovery of the neutron.
- What are quarks?
- Baryons and Leptons?
- A topic related to nuclear chemistry, such as radioisotope dating

Project Format

1. Project Topic Proposal	10%
2. Poster Presentation during last week of class	70%
3. Resources: additional research <u>beyond</u> the text	10%
4. <u>Activity</u>	10%
Total:	100%

Format Description

Part 1: Project Topic Proposal (up to 10% of project grade)

- Pick a general topic related to one of the following areas:
 1. Chemistry and Technology
 2. Chemistry and Society
 3. Classic Chemistry Experiment or Discovery
- Due October 22th. By email or hard copy.
- Format:
 - a) Name
 - b) Partner(s)
 - c) Topic (at least 1 complete paragraph □ should be well thought out before writing the proposal)
 - d) Explanation of interest in topic

Part 2: Poster Presentation (up to 70% of project grade)

- Develop the topic into personal knowledge through textbook reading, assigned homework examples, additional reading, and/or hands-on work
- Design your poster presentation to be displayed on a 36" x 48" folding display board, such as a "Project Pro Display Board" made by Hunt
 - *this type of poster board will stand-up on its own and not need to be attached to a wall*
- **Required:** 1 appointment with me to discuss progress (toward the end of the term)
- **Bottom Line:** Use me as a reference as you develop ideas for your project

Part 3: Project Resources & References (up to 10% of project grade)

- Keep log of all of your information sources
- Resources should be selected that will provide you with reliable information, such as:

<ul style="list-style-type: none">o end use of the topico cost analysiso environmental effectso government agency investigation	<ul style="list-style-type: none">o what are the limits and why?o ethical discussion (and evidence)o public healtho practical applications
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- It is a good idea to choose one of the above to orient your project around and structure your project to include your evidence

Part 4: Activity (up to 10% of project grade)

- Develop a learning activity or demonstration to elucidate your ideas, for instance:
 - design a lab activity/experiment and actually do it
 - build a device based on a chemistry principle and show how it works it
 - demonstrate the chemistry underlying a common (or not-so-common) everyday device

Evaluation of Poster Presentation

On the day of presentation, projects will be evaluated independently by each of your peers, as well as the instructor. Each of your classmates will complete an evaluation form identical to that of the instructor. Your final presentation score will be 80% based on the instructor's evaluation score and 20% based on the average peer evaluation score.

$$\text{Final Presentation Score} = 0.8 * (\text{instructor score}) + 0.2 * (\text{avg. peer score})$$

Additional Notes:

- Minimum of 3 references (2 from non-web-related sources). Citations of sources should be displayed on the poster (on the back side is fine). *Newspaper articles* and, in most cases, *encyclopedia and/or web site entries* are not appropriate.
- Students will work in groups of 2 or 3. However, each student must have a specific assigned role in the project and will be graded in the participation/completion of that role.
- Include appropriate figures, graphs, equations, and visual aids
- DO NOT plagiarize from your sources or otherwise! Please note the following:
 - o Your group is expected to author all text for your presentation
 - o When using a figure or text fragment (when appropriate) from an outside source, be certain to acknowledge it.
- **Note:** Deviation from these requirements will only be allowed with prior discussion with and approval by the instructor.

Term Project Timeline

<u>Week #</u>	<u>Goal/Activity</u>
1	begin thinking about a topic and discuss ideas w/ instructor
4	Due: Topic Proposal (Friday, October 22 th)
5-6	formalize topic and begin acquiring information sources/references
7-8	meet with instructor to discuss progress (make appointment)
8	Due: Project Outline (Wednesday, November 19 th)
9-10	work on project
11	Due: Poster Presentation (Friday, December 10 th)