

Chemistry Term Project

Summary: As an advanced elective course for college-bound students and especially those pursuing STEM education and careers, Chemistry students are expected to conduct and share authentic, independent scientific research. Students have the option of doing different projects each term or one major project worthy of competition in the school science fair.

Topic: Any topic covered in the Chemistry textbook is acceptable. Topics in the realm of organic chemistry, biochemistry, and chemical engineering are also acceptable.

Format: Each term project can be any of these formats:

- ☐ Write an **essay** (800 - 1000 words (3-4 pages))
- ☐ Make and present a PowerPoint **presentation** (15-25 slides)
- ☐ Write and demonstrate a multi-step **experiment*** to share with the class.
- ☐ Build a scientific **model*** for classroom display.
- ☐ Make a **poster*** (only for creative types)
- ☐ Etc.*

** Topics for Experiments, Models, Posters, etc: Ask first. Pre-approval required.*

Concept: The project should be focused on one of these general concepts:

- ☐ Compare competing solutions for a real world problem. (Examples: oil versus natural gas; sugar vs artificial sweetener, etc.)
- ☐ Describe or illustrate the relationships among chemistry and society (how society is affected by the use of fossil fuels, pharmaceuticals, plastics, etc.)
- ☐ Evaluate an innovative technological solution (solar roof tiles, Electric Vehicle batteries, Gorilla Glass, etc.)
- ☐ Construct an argument for or against a common scientific topic (Is Global Warming Real? Should lab-created elements be listed on the Periodic Table?)
- ☐ Engineer a solution to a real-world chemistry problem.
- ☐ Describe in detail some scientific phenomena and how it applies to the study of chemistry.

Research Criteria: Authentic research involves reading from multiple sources about a topic and synthesizing (in your own words) what you have learned. It should be obvious

from your work that you consulted at least three primary sources for your information, spent a considerable time generating your work product, and that your work is indeed your own. Each term project should take the average student approximately 4 hours to complete, exclusive of reading/research.

Rubric Summary:

- ☐ Not plagiarized or recycled from a prior assignment.
- ☐ Related to chemistry, chemical engineering, or biochemistry.
- ☐ Writing is scientific in nature, with proper use of scientific and academic language, proper use of mathematics, includes supporting graphs, tables, and/or formulæ.
- ☐ Summarizes a complete and correct scientific argument in a concise manner.
- ☐ Demonstrates thoroughness, creativity, attention to detail.
- ☐ Has a Title, Summary or Thesis statement, a well-developed central theme, and a Summary/Conclusion.
- ☐ Uses in-line citations and a separate Bibliography with at least three primary sources in either APA or MLA format.
- ☐ Composed in a standard, easy-to-read format
 - ☐ Essay = 12-point Times New Roman, double-spaced with 1" margins.
 - ☐ PowerPoint = 7 lines/page max, contrasting colors
 - ☐ Other formats in standard, easy-to-read format
- ☐ Evident that work took 3-5 hours to complete.

Additional Notes:

1. Projects exhibited in the school science fair earn credit for the 1st *and* 2nd term. Science fair projects that advance and compete in the county fair will earn credit as 3rd term projects; projects that advance and compete in the regional fair will earn credit as 4th term projects.
2. Each student must work independently unless prior approval is granted.
3. 2019-2020 Due Dates:

<u>Term Project</u> Term 1 = Fri, Oct 11 Term 2 = Mon, Dec 9 Term 3 = Fri, March 6 Term 4 = Fri, May 8	<u>Science Project</u> Research Plan = Fri, Oct 11 School Science Fair = Thu, Dec 5 County Science Fair = Sat, Feb 1 Regional Science Fair = Tue, Mar 17
--	--
4. Do a good job! Term projects count **10%** toward your final grade.