

Technical Write-Up Paper

Upon entering college, a student should have a certain set of skills established in high school to promote future success in their post-secondary education. In science, note-taking, study skills, test preparation, inquiry-based learning, problem-solving skills, and an understanding of lab equipment is necessary. In addition, the ability to communicate scientific findings in a technical manner is needed. As a college student you will be required to write laboratory reports in a specific, technical format. This paper project will assist with gaining the skill of technical writing. For this assignment, you will type out a formal laboratory experiment paper. Although there is no set length for technical write-ups, being more in-depth is preferred over a superficial approach. This paper is worth 150 points, and the rough draft is due in two weeks. The final draft will be due a week after the rough draft is returned. The following criteria must be fulfilled :

1. **Title Page** : (10 Points)

- Include a title that is descriptive of the experiment and analysis of results
- Example : Determining The Free Chlorine Content Of Pool Water
- Include Name, Class and Section, Date

2. **Outline** : (10 Points)

- Include :
 - Title
 - Background Information
 - Materials & Methods
 - Results
 - Discussion
 - Conclusion
 - References

3. **Background Information** : (20 Points)

- The introduction of a lab report discusses the problem being studied
- Write the introduction in your own words (do not copy from a lab manual)
- Explain the problem and include relevant information required to understand the paper

4. **Materials & Methods** : (20 Points)

- The materials & methods section provides an overview of any equipment, apparatus, or other substances used in the experiment (include specific amounts of materials)
- Include steps taken during the experiment / study
(*as they happened, not supposed to happen*)
- If written correctly, another researcher should be able to duplicate the experiment and get the same (or very similar) results

5. **Results** : (20 Points)

- The results show the data that were collected or found during the experiment / study
- Explain in words the data that were collected
- If using graphs, charts, or other figures, present them in the results section
 - Tables and Figures should be labeled numerically “Table 1.”, “Figure 2”
 - Descriptions should follow the tables or charts
- Calculations to understand the data can also be included in the results section
- Results are narrative only (NO ANALYSIS OF RESULTS SHOULD BE PRESENT)

6. **Discussion** : (20 Points)

- The discussion section analyzes the results of the experiment / study
- Explain your results and discuss them
- Try to answer these questions :
 1. What do the results indicate?
 2. What is the significance of the results?
 3. Are there any unexpected results? Why?
 4. Analyze the strengths and weaknesses of the experiment / study.
 5. If there are any experimental errors, analyze them.
 6. Are there any new questions that have been raised?

7. **Conclusion** : (20 Points)

- The conclusion is a summation of the experiment
- Clearly and concisely state what was learned and its importance
- If there is future work that needs to be done, it can be explained in the conclusion

8. **References** : (10 Points)

- When using ANY outside source to explain background information or support a claim, those sources MUST be cited in the references section
- Here is an acceptable example of citing an Internet source (*and posted kiosks*).

Within The Paper :

: Most recently, the caves were shut down in 2018 to make extensive upgrades to pavements, electricity needs, and cave lighting (Maquoketa Caves State Park, 2020).

In The References Section :

Geology Background. Posted at Maquoketa Caves State Park Kiosk. 26 Mar. 2020; Maquoketa, Iowa.

“Helictite.” *Wikipedia The Free Encyclopedia*. Web. 4 Dec. 2019.

“Maquoketa Caves State Park.” *Wikipedia The Free Encyclopedia*. Web. 7 Jan. 2020.

“Park Details : Maquoketa Caves State Park.” *Iowa Department Of Natural Resources*. Iowa.gov. Web. 30 Mar. 2020.

Soda Straws and Draperies. Posted at Maquoketa Caves State Park Kiosk. 26 Mar. 2020; Maquoketa, Iowa.

9. **Format** : (20 Points)

- 12-point, Double-spacing, 1-inch margins, (*Times New-Roman preferred*)