

Micr-22 Formal Lab Report revised Spring 2018

You have been asked to write a lab report on a certain lab exercise. The objectives of this request are to:

- help clarify the exercise in your mind, and
- provide an opportunity to help you improve your analysis and your writing.

When completing the exercise in lab, be sure to take good notes on any variations to the procedure. Careful records of your results are also crucial!

Be sure to label and include the following elements:

1. Authorship

- Your name
- The date
- The course (Micr-22)
- Your lab meeting times

2. Introduction

Introduce your reader to the topic. Consider including a history of investigation, applications of the ideas, or importance of the topic. Reach broadly enough to fill about one page. Outside sources (and citations) will be useful here. Paraphrase, rather than quoting directly.

Include your hypothesis at the end of the introduction. This is a tentative assumption or educated guess as to what the experimental outcomes will be, or a suggested solution based on your introductory evidence. One tricky part of writing a good hypothesis is being sure that your hypothesis is *falsifiable* in the exercise. For example, the hypothesis that “all microbiologists are right-handed” can be falsified by observing a single left-handed microbiologist. It may be helpful to try using words like “all,” “none,” “never,” or “always.” Please explicitly state, “I hypothesize...”

Procedures -- omit: *These are already written in our lab manual, so there is no need to duplicate them here. (Normally, this section would give enough information so that someone could duplicate the exercise without needing further instructions, including materials or equipment you used, and any organisms you used.)*

3. Results

Report your actual results in depth, not what was “supposed” to happen. Tables and labeled diagrams may be useful. Any observations relevant to the experiment will be helpful.

4. Discussion

This is the most important part of your report. Excellent microbiologists will analyze their results and then broaden their perspective to make their work relevant to the rest of the world. Outside sources will again be useful. Again, reach broadly enough to fill about one page.

Also, when, if ever, is it appropriate to use the word “proved” in scientific writing? If you're not sure, let's chat!

Well-written discussion sections address most or all of these questions:

- Was your hypothesis supported by your results?
- Why do you think the exercise turned out the way it did?
- What are possible explanations for unexpected results?
- What were potential sources of error?
- How might someone apply your information in a real-life situation?
- What further questions come to mind?

5. Recommendations

This is an opportunity for you to make suggestions about how the lab exercise might be improved for future students.

6. Works Cited

The best research builds from recent, relevant, high-quality information. Your report will need support from at least three outside sources, not including our textbook or lab manual.

If you do not already have a favorite citation format, please use the CSE citation format for both your in-text citations and your Works Cited (http://writing.wisc.edu/Handbook/DocCSE_NameYear.html).

Example website citation:

Williamson RC. 2004. Deciduous tree galls [Internet]. Madison (WI): University of Wisconsin-Madison; [cited 2013 Sep 12]. Available from http://labs.russell.wisc.edu/pddc/files/Fact_Sheets/FC_PDF/Deciduous_Tree_Galls.pdf

To demonstrate that you've thought about the trustworthiness of your sources, **please annotate** each reference in your Works Cited with a brief explanation of why you believe the source to be credible.

Example citation with annotation:

Briggs, C. 2014. Glass blowers and their exposure to thermophilic *Escherichia* in molten products. *Journal of Interesting-Sounding Example Studies*, 31(2): 123-125.

- I believe this source is credible because I wrote it. (not so good)
- I believe this source is credible because it was published in a peer-reviewed journal, contact information is given for the author, and no conflicts of interest are evident. (better)

Potential sources:

- Peer-reviewed journals (such as from Mt. SAC library databases, some from scholar.google.com)
- Reputable websites (consider our library's handout on evaluating websites)
- Our textbook (note the specific pages you used)
- Our lab manual (again, note specific pages)

Formatting

- Double-spaced
- Times New Roman font, 12pt.
- Label your sections
- Double-sided printing is encouraged
- No cover needed – just staple one corner, please

Our Writing Center is available to help you! Visit building 26B, room 1561.

Grading Rubric

- Requirements to qualify for grading:
 - Your own original work
 - Typed
 - Please attach this sheet to your report
- Authorship: _____ / 1 point complete
- Introduction: _____ / 6 complete, thorough, relevant hypothesis?
- Results: _____ / 4 complete, clear
- Discussion: _____ / 10 complete, critical, thoughtful
- Recommendations: _____ / 3 thoughtful
- Works Cited: _____ / 3 complete annotations?
- Mechanics: _____ / 3 section labels, grammar, spelling, species-name format

-10% if submitted fewer than 48 hours after when due
-50% if submitted more than 48 hours after when due

Score: _____ / 30