

Successful Laboratory Work

Labs are an exciting part of any science class. It is a time for collaborative physical work and discussion, but all lab reports must be individually written. Please keep the following in mind when preparing for and conducting a science lab. Know what you are doing and why you are doing it. Your written conclusion is the way you will communicate what you did, what you learned and how you know what you know. In order to do this effectively your observations and data collection must be thorough, organized and clearly labeled.

If you have been absent from a lab, you may not copy the data from your lab partners.

The learning is in the performing of the lab yourself & in writing your own conclusion. You may make up the lab on your own time by making an appointment with me. If you do decide to do a "dry" lab, copy the data from another student, but complete the report. You can only earn up to $\frac{1}{2}$ credit.

PRE-LABS

Pre-labs help prepare you for the lab. They usually consist of:

1. Writing the objective for the lab
2. Reading the procedures and creating a **flow chart** of those procedures
3. Preparing any data tables needed to record observations

Pre-labs are usually assigned as homework and if they are not completed by the following class period, the student will not participate in the lab. If a pre-lab is not complete, the student may do a "dry" lab. (Obtain the data from another student and complete the lab report for $\frac{1}{2}$ credit.)

LABS WILL CONSIST OF:

Title / Problem Question

Clearly & specifically state the problem you wish to study in the form of a question.

Background:

Through research, collect information that relates to your problem. What is known?

What do you already know about the problem?

Hypothesis: (if one is made)

A hypothesis is a tentative explanation for a set of observations or answers to a scientific question. It must be something that can be tested.

Materials:

List all materials you plan to use

Method/Procedure:

This is a detailed step by step explanation of how the experiment is going to be conducted.

Results:

Information collected and recorded in an organized format. (Data tables)

Discussion/Analysis:

Answer any questions pertaining to the lab with complete thoughts. Analyze and interpret your data. Address errors that may have occurred.

Conclusion:

The conclusion should be in paragraph form and a minimum of 5 sentences. Begin with an introductory sentence. Include the following;

SUCCESSFUL CONCLUSIONS

Your conclusion must be thorough and presented in a clear, logical way. You will make a claim and show how your data supports that claim. Imagine you are explaining your lab to a friend that has never taken Biology. Your conclusion should "Connect the Dots" for your reader.

Conclusion guidelines

- a. the best, most truthful response to the problem question(s) as stated at the beginning of the lab
- b. a reason for the response (what evidence did you discover? What did the results show? (How do you know what you know?))
- c. address your hypothesis, (if one was made) did your results support your hypothesis, why, why not?
- d. what else did you learn
- e. any questions that remain.
- f. concluding sentence

Each lab report is worth 25 points, and the conclusion is usually worth 10 of the 25 points! Once the lab is graded and returned, make corrections if necessary and resubmit for grading then place in your binder.