

# Data, Analysis and the Conclusion

## Visualizing the data:

Now that you have entered your data in a table or spreadsheet, you are ready to represent the data in the appropriate visual format for your lab report. Representing your data in a visual format will allow you to identify trends and relationships among variables more easily. Follow these steps:

- Establish what types of data you have, [quantitative or qualitative](#).
- Determine if the data should be represented as a [table or a graph](#).
- If you decide to use a graph to represent your data, determine which [type of graph](#) is one that best represents your data.
- If a table is the best format for representing your data, then modify the table you used to collect your data so that it is labeled and organized properly. Go to [Designing Tables](#) for help on making tables.
- If you need help creating a spreadsheet to make a table or graph, go to [Excel Tutorial](#).
- Remember that the purpose of your table or graph is to summarize your findings for yourself and for others and to reveal trends in your data.

## Making sense of your data:

Review all your data--tables, graphs, and drawings--and try to make sense of the overall findings of the lab procedure. Summarize the overall findings in a sentence or two. If your lab instructor says it is permissible, compare your findings with those of other students in the lab.

Summarizing your data in a sentence or two helps you to understand the lab. It is also useful for when you write the Results section of your lab report.

Corroborating data or sharing findings is a very common practice among scientists, which usually leads to more ideas and experimentation. For this reason, comparing your results to other students' results can be valuable as a way of testing your findings. It's OK if your findings are different. Your job is to try to figure out why, to identify the sources of the difference. You can use this information when explaining your findings in the Discussion section of your lab report.

## Discussion - Interpreting the results of the lab

Step 1: Write a sentence or two stating whether or not the results from the lab procedure fully support your hypothesis, do not support the hypothesis, or support the hypothesis but with certain exceptions.

Step 2: In a paragraph, identify specific data from your lab that led you to either support or reject your hypothesis. Refer to the visual representations of your data as evidence to back up your judgment about the hypothesis.

Step 3: In a paragraph, use your understanding of the scientific concept of this lab to explain why the results did or did not support your hypothesis. If the hypothesis from the Introduction was not fully supported, show how your understanding of the scientific concept has changed. Note any citations you use here for including in the Reference section of your report.

Step 4: Discuss other items as appropriate, such as (1) any problems that occurred or [sources of uncertainty](#) in your lab procedure that may account for any unexpected results; (2) how your findings compare to the findings of other students in the lab and an explanation for any differences; (3) suggestions for improving the lab.

## Conclusion - Focusing on what you learned by doing the lab

Step 1: Write a paragraph summarizing what you have learned about the scientific concept of the lab from doing the lab. Back up your statement with details from your lab experience.

Step 2: If there is anything else you have learned about from doing the lab, such as the lab procedures or kinds of analyses you used, describe it in a paragraph or 2.