How to Write a Lab Report

What is a Lab Report?
A lab report consists of seven components: abstract, introduction, procedures, results, discussion, conclusion, and, in some cases, references.

Abstract
The abstract is a one or two paragraph, concise yet detailed summary of the report. It should contain these four elements:

- The main objective(s) of the study (the central question);
- Brief statement of what was done (methods);
- Brief statement of what was found (results);
- Brief statement of what was concluded (discussion).

It is often easier to write the abstract once the other components of the lab report are written.

Introduction
This section tells the reader why you did the experiment. Include background information that suggests why the topic is of interest and related findings. It should contain the following:

- A description of the nature of the problem and a summary of relevant research. In this description and summary you should provide context and key terms so your reader can understand the experiment.
- A statement of the purpose, scope, and general method of investigation in your study. Express the central question you are asking.
- A description of your experiment, the research question, and your hypothesis.

Procedures (Materials and Methods)
This section should describe all experimental procedures in enough detail so that someone else could repeat the experiment. Some guidelines to follow:

- Explain the general type of scientific procedure you used to study the problem.
- Describe what materials, subjects, and equipment you used (materials).
- Explain the steps you took in your experiment (methods).
- Mathematical equations and statistical tests should be described.
Results
The results section should present data that you collected from your experiment and summarise the data with text, tables, and/or figures. Effective results sections include:

- All results should be presented, including those that do not support the hypothesis.
- Statements made in the text must be supported by the results contained in figures and tables.

Discussion
The discussion section should explain to the reader the significance of the results and give a detailed account of what happened in the experiment. Evaluate what happened, based on the hypothesis and purpose of the experiment. If the results contained errors, analyse the reasons for the errors. In the discussion, you should:

- Summarise the important findings of your observations.
- For each result, describe the patterns, principles, and relationships your results show. Explain how your results relate to expectations and to any references cited. Explain any agreements, contradictions, or exceptions. Describe what additional research might resolve contradictions or explain exceptions.
- Suggest the theoretical implications of your results. Extend your findings to other situations or other species. Give the big picture: do your findings help us understand a broader topic?

Conclusion
A brief summary of what was done, how, the results and your conclusions of the experiment.

References
A list of any works you cited in the text of your report. The references should be listed in accordance with your required citation format guide.

Further Resources
You can also pick up a free Palgrave Pocket Study Skills Guide from the CAPOD offices.