

# Writing a Lab Report

A scientific lab report has six main sections

## 1. Title

This should provide a specific summary of the work conducted

## 2. Introduction

State the motivation behind study, explain how it fits into preexisting literature, and present the objectives of the study. This should be done by provide background information and theory relevant to the experiment performed, explaining overall theme of the experiment and explicitly listing objectives, hypotheses, and predictions.

## 3. Methods –

Provide details on the experimental design and setup Describe experimental design without too much or too little detail

- Do not present raw or analyzed data

## 4. Results –

Here you will present your analyzed data (not raw data) in the form of statistics, tables, or figures. There are two main section of the results the visual presentation of data (Fig and Tables) and

- Number and title Figures and Tables (Figure 1, 2, 3... Table 1, 2, 3...; Tables have titles on top, Figures have title below)
- Label axes on Figures and show legends
- Verbally describe and refer to what each table or figure shows (example: The “Y-axis variable” increased/decreased/did not vary with an increase in the “X-axis variable”)
- Present analyzed data but do not interpret what it means

## 5. Discussion – interpret result in the light of the objectives and argue why the study is important

- Interpret the results and relate them back to the overall theme of the experiment
- Use the results as evidence supporting or refuting hypotheses (not proving right or wrong)
- Self-reflect on what could be done to improve the experiment or learn more about different aspects of the system studied

## 6. Work Cited

### II. Citations

– Citations in lab reports appear mainly in the Introduction, Materials and Methods and Discussion sections. Citations are used to support statements while providing background information and presenting arguments.

– Direct quotes are rarely allowed. Instead, writers must use indirect quotes that are substantially paraphrased into the writer’s own words and give credit to their sources using the author-year format:

- For a single author: (Author’s last name, Year)
- For two authors: (Author 1 & Author 2, Year); ‘and’ may be used instead of ‘&’
- For three or more authors: (Author 1 *et al.*, Year)

### III. Voice and Tense

– There is no agreed upon format for voice. Active voice is usually encouraged, but in practice many writers switch between active and passive voice to keep the writing from becoming too repetitive and dry. Actions that took place in the past (setup and execution of experiment (**Methods**), deciding on hypotheses and making predictions (last part of **Introduction**) are usually written in past tense. The **Results** and interpretations of the results (**Discussion**) are considered to be happening in the present, so they are usually written in present tense.