

**Intro:** *Brief* description of what was done, why it was done and what the major conclusions were.

**Theory:** What is the background for the experiment including a qualitative and quantitative overview of the experiment. Include all relevant equations.

**Experimental Procedure:** Simply put, what you did. A good experimental procedure allows anyone to come in and recreate the experiment.

**Results:** What data did you get out of the experiment. The results section should also clue me into *what* should be seen and where it should be seen (i.e. Figure 1). Pages of tables and figures are meaningless if there's no indication as to what the key takeaways are.

**Discussion:** Explain what is so important about the data: what does it prove or disprove? What does it indicate? If the results section deals with the question "*what* did the experiment do?", then the discussion should answer "*why* were these results seen?"

**Conclusion:** What was done, why it was done and what should be taken away from the report?

**Appendix:** The report should include key data or summaries of data. Fishing through pages of raw data is tedious and boring and so the report should highlight only that which is actually useful for (dis)proving what the experiment sought to do. If it's still somewhat useful or relevant, put it in the appendix.

### **Things to Avoid in Reports**

- Pronouns: I, you, we, us, etc.
- Unexplained figures and tables.
  - If a table or figure is included in the report, it should be talked about at some point in the lab. If it's not important enough to be discussed in the report, then it's probably not worth having in the report; put it in the appendix.
- Properly labeling figures and tables
  - Tables are labeled above
  - Figures are labeled below
- When working in groups, there should not be a dramatic change from section to section; it should be nearly indecipherable which group member(s) worked on which section.
- Choppy flow.
  - The best lab reports are the ones in which the reader doesn't have to flip pages to find the information being sought. For example, if a circuit was built and discussed on page one, then having the circuit on page 5 might not be a good idea.

- Numbers
  - When talking about non-data, numbers less than 10 should be typed out.
    - “Two capacitors were used...”
    - “12 resistors were used...”
  - Data and figure/table numbers can be left in numeric form
    - “12 volts”
    - “1 Amp”
    - “Figure 1”
    - “Table 5”
- Always be aware of what is being said. In reports, the author(s) are seen as experts and even the most innocent of mistakes can cause the rest of the report to be questioned.
  - For example, saying something along the lines of “the resistors were not giving off the appropriate resistances” is something that will instantly destroy any and all credibility the author has. (Resistors don’t “give off” resistance).