

How to Write a Lab Report

**Please see class syllabus for information on lab report violations*

Lab Report Structure: *Each report will contain the same basic components, but please see the instructions with each lab for the specific questions and data that are required to discuss.*

Your Lab Report Will Contain The Following Elements:

- | | |
|----------------------------------|-------------------|
| 1. Title/Heading | 6. Error Analysis |
| 2. Abstract/Statement of Purpose | 7. Analysis |
| 3. Introduction/Theory | 8. Conclusion |
| 4. Procedure | 9. *Works Cited |
| 5. Data | |

1. Title/Heading

A title page should have the following elements:

- A title – The one given on the lab will be fine
- Your name
- Your partners' name(s)
- Date – Date of the actual experiment preferably or the date the report was written
- Instructor's name (Mrs. Whittaker)

2. Abstract/Statement of Purpose (*Length: 1 to 2 sentences*)

- A purpose statement should say specifically what you are investigating and how you are going to investigate it.
- *"The purpose of this experiment was to _____ (what were your investigating?) by/through _____ (how did you go about investigating it?)"*
- **Example:** *"The purpose of this experiment is to determine the value of the acceleration due to gravity at Turner Ashby High School by comparing the falling distances and falling times of a dropped bouncy ball."*

3. Introduction/Theory (*Length: 1 to 2 paragraphs, length can vary*)

- Get straight to the point. No flowery intros.
- Explain background theories. What are the principles behind this experiment?
- What do we already know and what should this lab show?
- Define any new terms or variables.
 - When in doubt, take the time to define new terms rather than consider it general knowledge
- Explain any formulas that will be used. What does each variable represent?
- This section may require in-text citations. *See notes in Section 9.

****Do NOT mention results yet!!**

4. Procedure (*Length: 1 to 2 paragraphs, length can vary*)

- List materials and/or equipment used.
- Describe the initial set-up or include a picture if possible.
- Give a step-by-step explanation of what was done and what results were obtained.
- Explain any how and when formulas or calculations done during the lab.
- **Detailed but concise.**
- Use **passive voice** in this section. Do not make it a personal play-by-play, "I did this...." "...then I did this..." Instead, "this was done..." "...then this was done..."

5. Data

- Include any graphs, charts, or tables created during the lab or reference where these things can be found. Data should be neat and legible.
- Graphs always need titles and axes labels. Tables also need titles.
- Quantities measured should have units attached.

6. Error Analysis (*Length: 1 paragraph*)

- Some experiments will require calculations of error or percent error.
- No experiment is perfect. Take notes as you go through your experiment on things that might lead to inaccurate results.
- Even if you have a very successful experiment, discuss how you could improve your experiment for future trials.

7. Analysis (*Length: 1 paragraph*)

- This section should summarize the data from the experiments without discussing their final results. Discuss any trends that you see.
- **Use your data to prove your statements!** Reference your numbers and formulas to add strength to your statements.

8. Conclusion (*Length: 1 paragraph*)

- Bring it all together. What does your data say about your final results?
- Reference your actual data as well as statements made in your analysis section.
- If the lab required any percent error calculations, use these numbers to show *how* accurate your results may be.
- Discuss any spin-off experiments or further testing that could be done based on your results.

*There may be some overlap between your analysis and conclusion, but try to focus on trends in your data during analysis and the final implications of these trends in the conclusion.

9. *Works Cited and In-Text Citations

- All in-text citations and works cited need to be done in MLA format.
- If you used any resources to explain terms or theories in any of your sections, please use in-text or parenthetical citations in the body of the report and attach a works cited page as the last page.

General Information:

- Reports are graded on both scientific content and accuracy as well as grammar and spelling.
- Typed, Double Spaced, past tense (lab is already complete)
- **Avoid Contractions** – Instead of didn't, say did not. More formal that way :)
- **Make Sure All Subjects are Clear** – “It was attracted to it.” Make sure you are clear what both ‘its’ are in this statement.
- **No Generalizations** – Make sure you are as precise and clear as possible. Also, do not assume what your audience thinks.

Examples:

- Sample 1: *It is clear for anyone to see our results....*(May not be clear to everyone)
- Sample 2: *The string was a little shorter than the one used earlier....*(Define, a little shorter and earlier, how much shorter, which trial was earlier)
- **Remove Yourself from the Report (Writing in Passive Voice)** – The most important thing in the report is the experiment and the data it produces. Believe it or not, no one really cares that much about *you* in a lab report. *See example in the procedure instructions.