

## WRITING EFFECTIVE LAB REPORTS

### EFFECTIVE LAB REPORTS HAVE THESE COMMON SECTIONS:

The order they appear in your paper:

1. Abstract
2. Introduction
3. Materials & Methods
4. Results
5. Conclusion/Discussion
6. References

The order that is easiest to write them:

1. Materials & Methods
2. Results
3. Introduction & References (Cite your sources as you go!)
4. Conclusion/Discussion & References
5. Abstract (*Always* write this part last!)

### THE MATERIALS & METHODS SECTION

- Use past-tense verbs in this section to express an action or a condition that occurred at a specific, definite time in the past, as when discussing another researcher's work, when reporting your results or describing observations
- Avoid first person singular. Instead of saying "I boiled water," say "The water was boiled"

### THE RESULTS SECTION

This section describes your results, but do not *interpret* or *analyze* them yet. Enter your observations, data collected, graphs, and pictures of results

- Use past-tense verbs in this section to express an action or a condition that occurred at a specific, definite time in the past, as when discussing another researcher's work, when reporting your results or describing observations
- Sometimes there are calculations needed to obtain or support your results. Ask your professor if they require a separate calculations section
- If you include pictures, tables, or graphs, describe them in words as well

### THE INTRODUCTION

This section describes the theory behind the experiment in clear, concise language. What concepts are being illustrated? What does this particular method involve? Why is each step important for a successful experiment?

- Use present-tense verbs in this section to explain what is know about the theory behind the experiment
- Use past-tense verbs in this section to describe the history behind a discovery

(Continued on reverse side)

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**Additional online resources can be found at [www.madonna.edu/owl](http://www.madonna.edu/owl)**

- Introductions need to be grammatically correct and well organized, with topic sentences and strong transitions from one idea to the next
- Include a purpose statement briefly describing the goal and method of your experiment. Most scientific papers put this purpose statement at the end of the introduction. Do not include any of your results or discussions in this statement
- Assume that nothing is general knowledge. Use citations and current sources to back up each statement
- Only use paraphrased material. Do not use direct quotations

## THE CONCLUSION/DISCUSSION

Describe why the methods you used were effective, or suggest reasons why the methods used were ineffective. Did you notice anything strange during the experiment? Has anyone else noticed this before? Can you think of any explanations? What would you suggest for future versions of this experiment?

- Be careful with your verb tenses:
  - The results were obtained in the *past*
  - But explained with theoretical concepts in the *present*
  - And recommended further actions will be in the *future*
- It is ok to acknowledge mistakes! In fact, it's encouraged
  - Be careful in the laboratory, but every failure is an opportunity to learn
  - Explain what went wrong, how it impacted the experiment, and how to avoid it in the future
- Cite any sources used

## THE REFERENCES SECTION

This section must correspond to the sources cited in your main text. You can't include a source in the reference list that you don't cite in the text of the paper, and you can't cite a source in your paper if you don't include it in your reference list.

- Use the citation style (APA or CSE) recommended by your professor
- Format your reference page in accordance with the style your professor chose
- Citations are needed for any information you reference that is not common knowledge

## THE ABSTRACT

Abstracts are very short summaries of the paper that are, above all else, concise. Aim for 5-6 sentences:

- Summarize the introduction
- Summarize the methods used
- Summarize the results obtained
- Summarize the conclusion reached through discussion

## SEE ALSO:

- APA: Essay Format [[PowerPoint](#) & [Handout](#)]
- CSE: Essay Format [[PowerPoint](#) & [Handout](#)]
- Introductions [[Handout](#)]
- Conclusions [[Handout](#)]