



Writing Center Academic Affairs

Style: Scientific Writing

Scientific writing is research-based writing. In other words, it is the written account of an event or experiment that is observable, repeatable, and alterable. Depending on the discipline, one of several documentation and formatting styles may be used: American Psychology Association (APA), Council of Science Editors (CSE), Institute of Electrical and Electronics Engineers (IEEE), and American Institute of Physics (AIP) are common styles. **You should ask your professor if you are unsure which style you should use.**

An academic science paper consists of an abstract, a four-part body paper (introduction, methods, results, and discussion/conclusion), and a reference page. Key words, acknowledgements, table of contents, and an appendix are often used when a paper is intended for publication. **You should ask your professor if you are unsure which parts of the paper are required for the assignment.**

Verb Tense:

- Your hypothesis is written in the present tense because it is currently being tested.
- Your methods and results are written in the past tense because they have not been accepted as proven fact.
- Results from previously published papers, articles, books are written in the present tense because they are regarded as accepted fact.
- Mention of future experiments is written in the future tense.

Point of View:

- Most text is written in the third person.
- Avoid the impersonal “one,” for example, “One measured the rate of growth.” To avoid awkward constructions such as the example, rearrange the sentence to be in the passive voice: “The rate of growth was measured.”
- First person can be used, but sparingly, and only for work you, or your group, designed and completed yourself.

Abstract:

An abstract is an overview or summary of the major sections of the paper, written **after** the entire paper is completed. It is one concise paragraph that mentions only the major points of the paper, and is usually around 250 words.

- The abstract should be a mini-essay, highlighting the main points of the paper.
- Include only information that appears in your paper.
- Communicate a crucial piece of information in every sentence.
- Use active voice as much as possible.
- Briefly mention results, but not discussion

Introduction:

Contains only relevant background information presented in the present tense.

- Describe the gap in knowledge and why your experiment is relevant to the scientific community.
- Do not report the results or discussion in this section.
- State your thesis/hypothesis, prediction, justification, and/or objectives towards the end of the introduction.

Materials and Methods:

Contains information necessary to reproduce the experiment and is presented in the past tense.

- Walk the audience through the procedure as if you are having a conversation; do not format this section like a recipe with bullet points.
- Mention materials as they were used during the procedure unless your formatting style requires a list of materials.
- Use full, official names of equipment, chemicals, and compounds when first mentioned.
- Use abbreviated names only after the first, full mention of the official name and according to the formatting style you are using.
- Avoid mention of the results, conclusions, or speculations for future research.

Results:

Contains only relevant data reported clearly and concisely.

- Do not just fill this section with figures and captions; write paragraph(s) about the map, table, figure, graph, etc., according to documentation style.

- Number all figures and tables sequentially (i.e., Figure 1, Figure 2, Table 1, Table 2).
- Avoid page breaks in the middle of a map, table, figure, graph, etc.
- Do not include discussion or explanation of the results.

Discussion/Conclusion:

Contains only information based on the explanation and interpretation of the data. It is not the same as the introduction.

- Discuss the implications of the results; do not simply repeat the results.
- Only reference maps, tables, figures, graphs, etc. from the Results section if necessary; do not reuse them.
- Include any errors that may have skewed the results.
- Indicate if the experiment needs further research to provide more significant information.
- Indicate if the results point to future research that expands on your hypothesis/thesis.

References Page:

Should contain original sources written by experts in the field and published in scientific journals and/or books. It should be documented in the appropriate documentation style designated by your professor or profession.

- If you mention a source in the body text, you must refer to it in the References page.
- If you have a source in the References page, you must refer to it in the body text.

References

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