



Writing Advice*: Eleven steps for organizing your scientific manuscript.

Organizing content for your manuscript makes the writing process manageable.

General guidelines for overall format and organization

Title:	Short and informative
Abstract:	1 paragraph (<250 words)
Keywords:	approximately 5, or what the journal requires
Introduction:	1.5-2 pages
Methods:	2-3 pages
Results:	6-8 pages
Discussion:	4-6 pages
Conclusion:	1 paragraph
Figures:	6-8 (one per page)
Tables:	1-3 (one per page)
References:	20-50 papers (2-4 pages)

An ideal length for a manuscript is 25 to 40 pages, double spaced, including essential data only. Also, review the target journal's "Guide for Authors", to be sure.

Embedded in this format and organization is the *IMRaD* format, widely used in STEM publications: **I**ntroduction, **M**ethods, **R**esults, and **D**iscussion. The Steps for creating content of your manuscript may not be what you are used to, and don't follow the overall format – for good reason. By starting your manuscript with formatted data, moving on to methods, then to results, and then discussion, you position yourself to write a more meaningful abstract, conclusion, and introduction. The next page is a reference chart for the 11 steps you should follow.

Step	Advice
1. Prepare the Figures and Tables	Make sure figures, tables, and illustrations are formatted according to the style guide used by the target journal or publisher.
2. Write the Methods section	<p>This section responds to the question of <i>how the problem was studied</i>.</p> <p>If your paper proposes a new method, then you need to include detailed information so a knowledgeable reader can reproduce the method.</p> <p>If your paper does not propose a new method, do not repeat the details of established methods; use References and Supporting Materials to indicate the previously published procedures. Broad summaries or key references are enough.</p>
3. Write the Results	Use your discipline's standard systems for numbers, units of measure, chemicals, and nomenclature.
4. Write the Discussion	Finalize the Results and Discussion before writing the Introduction. If the discussion is insufficient, how can you objectively demonstrate the scientific significance of your work in the introduction?
5. Write a clear Conclusion	The conclusion explains how the work advances the field from its present state of knowledge. In some journals, the conclusion is a separate section; in others, it's the last paragraph of the Discussion section. Whatever the case, without a clear conclusion section, reviewers and readers will find it difficult to judge your work and whether it merits publication in the journal.
6. Write an Introduction	<p>The introduction must be organized from the global to the specific, since it acts as a guide for the readers to your objectives for writing this paper.</p> <p>Hypothesis and objectives must be clearly remarked at the end of the introduction.</p> <p>State the purpose of the paper and research strategy adopted to answer the question, but do not mix introduction with results, discussion and conclusion. Always keep them separate to ensure that the manuscript flows logically from one section to the next.</p>

7. Write the Abstract	<p>The abstract provides a short description of the perspective and purpose of your paper; it gives key results but minimizes experimental details.</p> <p>The abstract offers a short description of the interpretation/conclusion in the last sentence.</p>
8. Compose a concise and descriptive title	<p>The title must explain what the paper is broadly about. It is your first (and probably only) opportunity to attract the reader's attention. In this way, remember that the first readers are the Editor and the referees.</p> <p>Remember: readers are the potential authors who will cite your article. Reviewers will check whether the title is specific and whether it reflects the content of the manuscript. Editors don't like titles that make no sense or fail to represent the subject matter adequately. Keep the title informative and concise (clear, descriptive, and not too long).</p>
9. Select keywords for indexing	<p>Keywords are used for indexing your paper and are the "label" of your manuscript. Even though keywords are used less frequently by some journals (because searching the whole text is easier), it is still a good idea to use keywords.</p> <p>When looking for keywords, avoid words with a broad meaning and words already included in the title.</p> <p>Some journals require that the keywords are not those from the journal name, because it is implicit that the topic is that. For example, the journal, <i>Soil Biology & Biochemistry</i>, requires that the word "soil" not be selected as a keyword.</p> <p>Only abbreviations firmly established in the field are eligible (e.g., TOC, CTD), avoiding those which are not broadly used (e.g., EBA, MMI).</p>
10. Write the acknowledgements	<p>Thank the people who have contributed to the manuscript, but not to the extent where that would justify authorship. If you have received funding for the research in the article, be sure to acknowledge the funding source.</p>
11. Write up and format References	<p>Cite all the scientific publications on which your work is based, but do not over-inflate the manuscript with too many references</p>



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