# Prepare your manuscript this way

## Title

The title is the main advertisement for your article. A great title entices the audience to read on; a poorly-titled article may never reach its target readers.

Your article's title should reflect its content clearly, enabling readers to decide whether it's relevant for them. Make the title catchy and keep it specifc. Leave out phrases such as 'a study of', 'investigations into' 'observations on'; and avoid using abbreviations and jargon.

Remember, too, that abstracting and indexing services depend on accurate titles; they extract keywords from them for cross-referencing.

> Why '***The effect of heating the albumen and vitellus of the Gallus gallus domesticus contained in calcium carbonate in H2O to 373.15 K***' when '***Boiling a chicken egg in water***' says it?

Essentially, effective titles:

- Identify the article's main issue.
- Begin with the article's subject matter.
- Are accurate, unambiguous, specifc and (when possible) complete.
- Are as short as possible.
- Are enticing and interesting; they make people want to read further.

## Authors

Only authors who've made an intellectual contribution to the research should be credited; those who'll take responsibility for the data and conclusions, and who've approved the fnal manuscript. The order of credited names can vary between disciplines; the corresponding author may not always be the frst author.

## Keyword list

Most journals request a list of keywords; important words that, along with those in the title, capture the research effectively. Keywords are used by abstracting and indexing services; choosing the right ones can increase the chances of your article being found by other researchers.

Many Elsevier journals also ask for a subject classifcation during the online submission process; this helps editors to select reviewers.

## Abstract

The abstract is your chance to describe your research in 200 words – so use it wisely. Together, the title and abstract should be able to fully represent your article, including for use by indexing services. Many authors write the abstract last, so it reflects the content accurately. The abstract should summarize the problem or objective of your research, and its method, results, and conclusions. Usually an abstract doesn't include references, fgures or tables. It should mention each signifcant section of the article, with enough detail for readers to decide whether or not to read the whole paper. While it's great to make the abstract interesting, above all it should be accurate. Don't promise more than your article delivers.

## The body of the text

Make the introduction brief. It should provide context and background, but not be a history lesson. It should state the problem being investigated, its contextual background, and the reasons for conducting the research. State the questions you're answering and explain any fndings of others that you're challenging or furthering. Briefly and logically lead the reader to your hypotheses, research questions, and experimental design or method.

## Method

*(also called Materials and Methods or Experimental Methods)*
This section should be detailed enough that readers can replicate your research, and assess whether the methods justify the conclusions. It's advisable to use the past tense – it's about what you *did* – and avoid using the frst person, although this will vary from journal to journal. Ultimately, you should explain how you studied the problem, identify the procedures you followed, and structure this information as logically as possible.

If your methods are new, you'll need to explain them in detail. If they've been published before, cite the original work, including your amendments if you've made modifcations. Identify the equipment and the materials you used, specifying their source. State the frequency of observations and what types of data were recorded. Give precise measurements, stating their strengths and weaknesses when necessary. Name any statistical tests, so your quantitative results can be judged.

If your research involved human participants, animals, stem cells or other biohazard materials, you'll need to include certain information in the ethics statement, such as committee approvals and permission to publish. You should also explain your criteria for selecting participants.

**Results**

This section should present your fndings objectively, explaining them largely in text. It's where you show how your results contribute to the body of scientifc knowledge, so be clear and logical. And it's important not to interpret your results – that comes in the Discussion & Conclusions section.

You can base the sequence of this text on the tables, fgures and graphs that best present your fndings. Emphasize any signifcant fndings clearly. Tables and fgures must be numbered separately; fgures should have a brief but complete description – a legend – that reveals how the data was produced.

**Discussion & Conclusions**

This is where you describe the meaning of your results, especially in the context of what was already known about the subject. You can present general and specifc conclusions, but take care not to summarize your article – that's what the abstract is for.

You should link this section back to the introduction, referring to your questions or hypotheses, and cover how the results relate to your expectations and cited sources. Do the results support or contradict existing theories? Are there any limitations? You can also suggest further experiments, uses and extensions.

Above all, the discussion should explain how your research has moved the body of scientifc knowledge forward. Your conclusions must be supportable and not extend beyond your results, so avoid undue speculation and bold judgments about impact. This is also a good place to suggest practical applications for your results, and to outline what the next steps in your research will be.

To summarize, make sure that:

- Your results directly support your conclusions.
- You use specifc expressions and quantitative descriptions – '12 degrees higher' instead of 'a higher temperature'.
- You only discuss what you defned early in the paper – don't introduce

the reader to a whole new vocabulary. If you missed an important term, go back to the introduction and insert it.
• All interpretations and speculations are based on fact, not imagination.

**Acknowledgments**

Keep acknowledgements brief, naming those who helped with your research; contributors, or suppliers who provided free materials. You should also disclose any fnancial or other substantive conflict of interest that could be seen to influence your results or interpretations.

**References**

New research builds on previously published work, which should always be acknowledged. Any information that isn't 'common knowledge', or generated by your experiments, must be recognized with a citation; and quoted text should be within quotation marks, and include a reference. The format of citations and references varies, so you should refer to the Guide for Authors for the journal you're submitting to.

**LANGUAGE QUALITY**

A scientifc article should report your fndings and conclusions as clearly and concisely as possible. To achieve this:

• Try to avoid unnecessary words or phrases – keep it simple.
• Use active writing when possible. For example, 'Carbon dioxide was consumed by the plant' is passive. Active writing shortens this phrase to, 'The plant consumed carbon dioxide' – which is much snappier.
• Tense is important. For known facts and hypotheses, use the present tense: 'The average life expectancy of a honey bee is six weeks.' But use the past tense when referring to experiments you've conducted: 'All the honey bees were maintained in an environment with a consistent temperature of 23°C.' And also use the past tense to describe results: 'The average life span of bees in our contained environment was eight weeks.'

**ILLUSTRATIONS**

Submitting any illustrations, fgures or other artwork – like multimedia– in an electronic forma tmeans that we can produce your work to the best possible standard, ensuring accuracy, clarity and a high level of detail.

**ETHICS**

Understanding the boundaries in scientifc research and publishing is a key step in making sure your work gets off to the best start. Scientifc misconduct and breach of publishing ethics can take different forms, and be committed knowingly or unknowingly. Examples of misconduct and breaches include:

- **Authorship disputes** – deliberately misrepresenting a scientist's relationship with published work.
- **Conflict of interest** – not disclosing to a journal that you have a direct or indirect conflict which prevents you from being unbiased.
- **Plagiarism** – passing off another's work or idea as your own.
- **Simultaneous submission** – submitting a paper to more than one publication at the same time.
- **Research fraud** – including fabrication (making up research data) and falsifcation (manipulating research data, tables or images).
- **Salami slicing** – the 'slicing-up' of research that would form one meaningful paper into several different papers.

## SEO YOUR ARTICLE

Search Engine Optimization (SEO) helps to ensure that your article appears higher in the results returned by search engines such as Google. This can mean you attract more readers, gain higher visibility in the academic community, and potentially increase citations.

Tips for SEO include:

- Use keywords, especially in the title and abstract.
- Add captions with keywords to all photographs, images, graphs and tables.
- Add titles or subheadings (with keywords) to the different sections of your article.
- Make sure you place links to your article from relevant websites e.g. your institue's website, Wikipedia, LinkedIn, blogs and social media.