- Define the purpose, title and readership of the report.
- Design a suitable structure with appropriate headings and sub-headings.
- Gather all the relevant material and note down the main points under the appropriate headings and subheadings.

Think about appropriate diagrams to illustrate the text; prepare draft versions of these before starting to write.

Write a rough first draft as quickly as possible; it is good idea to do this directly on PCs – writing things out long-hand is time-consuming.

❑ Write the final version, carefully checking all facts, references, figures, etc.; make sure that the text flows smoothly; check that you have used paragraphs appropriately; check for spelling mistakes; check that you have used correct grammar and punctuation.

Write an ABSTRACT or EXECUTIVE SUMMARY; this should be done last and should summarize the main issues and conclusions of the report.

Get a friend or colleague to read through the report to see how clear and comprehensible it is.

Characteristics of Good Scientific Writing

Clarity: avoid unnecessary detail.

□ Simplicity: avoid complicated sentences.

□ Impartiality: avoid making assumptions

and unproven statements.

Characteristics of Good Scientific Writing

- Structured logically: express ideas in a logical order.
- Accurately: avoid vague and ambiguous language.
- Objectively: statements and ideas are supported by appropriate evidence.

Before You Write

Whenever you read or research material for your writing, make sure that you include in your notes, or on any photocopied material, the full publication details of each relevant text that you read. These details should include: □ Surname(s) and initial(s) of the author(s).

- □ The date of publication.
- □ The title of the text.
- If it is a paper, the title of the journal and volume number.
- □ If it is a chapter of an edited book, the book's title and editor(s) the publisher and place of publication.
- □ The first and last page numbers if it is a journal article or a chapter in an edited book.

Contents of Scientific Paper

- Abstract.
- □ Introduction.
- Geological Setting.
- Methodology.
- Results.
- Discussion.
- Conclusion.
- Acknowledgments
- **References**.

Abstract

A very short, clear, and concise summation of the entire paper.

The abstract should include:

- A statement of the problem.
- The methods used to deal with it.
- Results obtained.
- Conclusions reached.
- Recommendations made.

Abstract

- A brief version of the academic thesis that does not include any equations or references. Starts with the importance of the research (between 250 and 350 words).
- □ The main results are listed and the research methodology used is mentioned.
- Include the following questions: What is the question to be asked? What are the results? What is the answer to the question posed?

Introduction

- □ It reveals the purpose of the paper and main conclusions, starting broadly and narrowing down to a specific thesis or research question.
- Provide a brief summary of the results.
- □ Include aim and importance of the study.
- □ What are the questions that aim to answer them?

Introduction

□ Should answer the following questions:

□ What was the nature of the investigation?

□ Why has the subject been investigated?

- □ What is the background of the problem or task that has been tackled?
- □ Where is the location? Refer to a map and outline the geological and geographical setting.

Geological Setting

Description of the geological structures and geological history of the study area.

Use geological maps.

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Methodology

- A set of instructions explaining what was done and how it was done.
- □ It includes data collection, field equipment, mathematical calculations that have been applied or any written computer program, it may be appropriate to include it in the appendix at the end of the paper.
- Clearly outlines how the study/experiment was carried out.

Results

- Objectively presents key results without interpretation in an orderly, logical, sequence. includes text, graphs, statistics, etc.
- □ Results should support the goals of the study.
- □ Focus on what has been achieved and accomplished (results give facts, not opinions).
- Never write explanations here.

Discussion

- The discussion contains the substance of the report and must be a strong section
- Interprets results and to explain new understanding of the problem after taking found results under consideration.
- Discuss the results logically.
- □ Will show how to relate the results to the explanations.

Conclusion

- Reinforces major claims or interpretations. The authors will try to indicate the significance of the major claim/interpretation beyond the scope of the paper.
- A short final statement providing a summary of the entire study.
- Plan and look carefully at your results. Make sure your conclusion is completely clear.

Acknowledgments

- A short paragraph written that acknowledge anyone who has contributed substantially by advice, discussion, or reviewing your manuscript.
- Thanks include:
 - Collecting data or assisting in analysis it.
 - General supervision or substantial facilities.
 - Funding research or providing some of the research materials.

References

Should contain: author(s) name, title of the research, name of journal, publisher, year of publication, page numbers.

□ List in alphabetical order.

Introduction (WHY): What was the question?

Methods (HOW): How did you try to answer it?

Results (WHAT): What did you find?

Discussion (SO WHAT): What does it mean?

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Steps to Write a Scientific Report

- Choose a Topic.
- Do Library Research.
- □ Narrow Your Topics.
- **Read Actively and Make Notes.**
- Plan.
- Write and Revise.
- Document Your Sources.
- **Proofread**.

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Choose a Topic

Select a topic covered in the course or assigned by the instructor.

Discuss with your instructor any questions about an appropriate topic.

Do Library Research

Look for a variety of sources, such as books, periodicals, and Internet sites.

Books give a broad perspective, while recent articles provide up-to-date information.

You can search for articles from many newspapers, magazines, and scholarly journals.

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Narrow Your Topics

As you do research, you may form a question that you want to answer or find that a lot of information is available about a particular aspect of your topic.

Read Actively and Make Notes

As you read your sources, highlight and make notes in the margin.

Write summaries of the main points in your own words, noting the source of each summary.

Plan

Decide how to organize your paper, and make an outline that will help you stay on topic and present your ideas in a logical order.

Write and Revise

Do not expect to write a finished paper all at once. First, get your ideas down on paper in a rough draft. Read it over and revise, trying to improve the content and organization.

Ask someone else to read it and give you feedback.

Document Your Sources

In addition to citing your sources in the text of your paper, the last page will be a list of sources.
Use the documentation style that your instructor assigns.

Proofread

Read over the whole paper slowly and carefully,
checking for errors in grammar, punctuation,
capitalization, and spelling.

Use the spelling checker on the computer, but do not depend on it.

What makes a great researcher

Great knowledge.

Good ideas.

Good writing.

Good plan.

Great communication.

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Useful Tips

Choose regular hours per week for writing and stick to it, pick the most appropriate time for you.

- Exchange opinions with colleagues and specialists in you field.
- Read the most recent scientific articles related to

the subject of your research.

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Useful Tips

Avoid long paragraphs and sentences. Try to write paragraphs easy to understand.

Read the final version of your research several times, and benefit from the comments and responses of your fellow researchers and other specialists. "Students should have a work plan to follow, including the time frame and expected outputs from the project."

No	Task	Start	Finish	Duration	% Complete
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How to Read a Scientific Article

- 1. Read the abstract.
- 2. Read the conclusion.
- 3. Read the first paragraph or the introduction.
- 4. Read the first sentence of every paragraph.
- 5. Read the rest of the article.



An abstract is a summary of the article, and will give you an idea of what the article is about and how it will be written. If there are lots of complicated subject-specific words in the abstract, the article will be just as hard to read.

Read the conclusion

This is where the author will repeat all of their ideas and their findings. Some authors even use this section to compare their study to others. By reading this, you'll notice a few things you missed, and will get another overview of the content.



Read the first paragraph or the introduction

This is usually where the author will lay out their plan for the article and describe the steps they will take to talk about their topic. By reading this, you will know what parts of the article will be most relevant to your topic!

Read the first sentence of every paragraph

These are called topic sentences, and will usually introduce the idea for the paragraph that follows. By reading this first, you can make sure that the paragraph has information relevant to your topic before you read the entire thing.



The rest of the article

Now that you have gathered the idea of the article through the abstract, conclusion, introduction, and topic sentences, you can read the rest of the article!



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