

Writing a Scientific Report

A scientific report should conform to the following general arrangement.

TITLE

ABSTRACT

INTRODUCTION

MATERIALS AND METHODS

RESULTS

DISCUSSION

REFERENCES

The **TITLE** should clearly and briefly indicate what the report is about. The title is never a complete sentence, and articles (a, an, the) are usually omitted. Use maximal capitalisation.

The **ABSTRACT** should be no longer than 200 words and should include the main objectives, findings (i.e. results) and the conclusions. A reader should be able to grasp the full scope and significance of the work reported without having to read the entire report.

The **INTRODUCTION** discusses the theoretical background to the investigation and places the present work in context. Relevant references should be cited and the reader's attention moved from the general to the specific. The aims of the present study should be clearly stated at the end of the introduction.

The **MATERIALS AND METHODS** section should include all information required for an exact repetition of the work performed. Since you are reporting on work already done, it is customary to use the PAST PASSIVE tense. Compare the following:

PAST ACTIVE: We performed the experiment over three weeks.

PAST PASSIVE: The experiment was performed over three weeks.

The methods should not be written as instructions to the reader, nor presented as an itemised list. Subheadings may be appropriate. For work conducted in class, a reference to the appropriate practical manual may be enough in this section.

The **RESULTS** consist of data and some comment which draws attention to the most significant aspects of the results. The data are usually presented in tables or graphs, but do not present the data in more than one format. Any comment on the results should be quantitative, not just qualitative; that is, any comments should be backed up with data..

- NO The treatment was more effective.
YES The treatment was 50% more effective.

The **DISCUSSION** is usually the most important section of the report. It should include comments on the results, especially any unexpected results. The results should be compared to the standard value and be explained or justified in light of the original aims.

A scientific report moves from general to particular to general. It begins in the Introduction with the theory related to the experiment, moves on to the work carried out in the Methods and Results sections and returns to general ideas in the Discussion by discussing whether the results obtained are, or are not, consistent with the theory. In many cases, it may be appropriate in the discussion to comment on the suitability of the method used in the experiment.

The conclusions are usually included in the discussion, but they can be separated. If they are separate, the discussion should be summarised and a comment made on the success, or otherwise, of the experiment.

The **REFERENCES** should be an accurate listing of all the sources referred to. Entries must conform to the conventions of the referencing system used. Begin the list of references on a new page with the heading 'References' centred.

Fonts and spacing

Fonts should be a minimum of 12 point and double line spacing is recommended, unless otherwise specified. Titles and headings may be in a bold font. A blank line is usually used between paragraphs, but no indentation is used.

Tables and figures

Tables, graphics and photos are placed immediately after where they are first referred to in the text. The reader should also be referred (by number) to the diagrams at the appropriate time in the text and the most important features pointed out to them. Tables, and graphics and photos (called **figures**), should be sequentially numbered. In large reports with many chapters, they are sequentially numbered in each chapter (i.e. for Chapter 2 you will begin from Table 2.1, Figure 2.1). Titles for **tables** are centred **above** the table. Titles for **figures** are centred **below** the graphic. The source of the table or figure should also be included. The source is usually in a smaller font (e.g. 10 point) and aligned on the left hand margin under a table, and under the title of a figure.