

# A guide through writing a technical report/thesis

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## Why write reports instead of essays?

**Essays:** theoretical and discursive

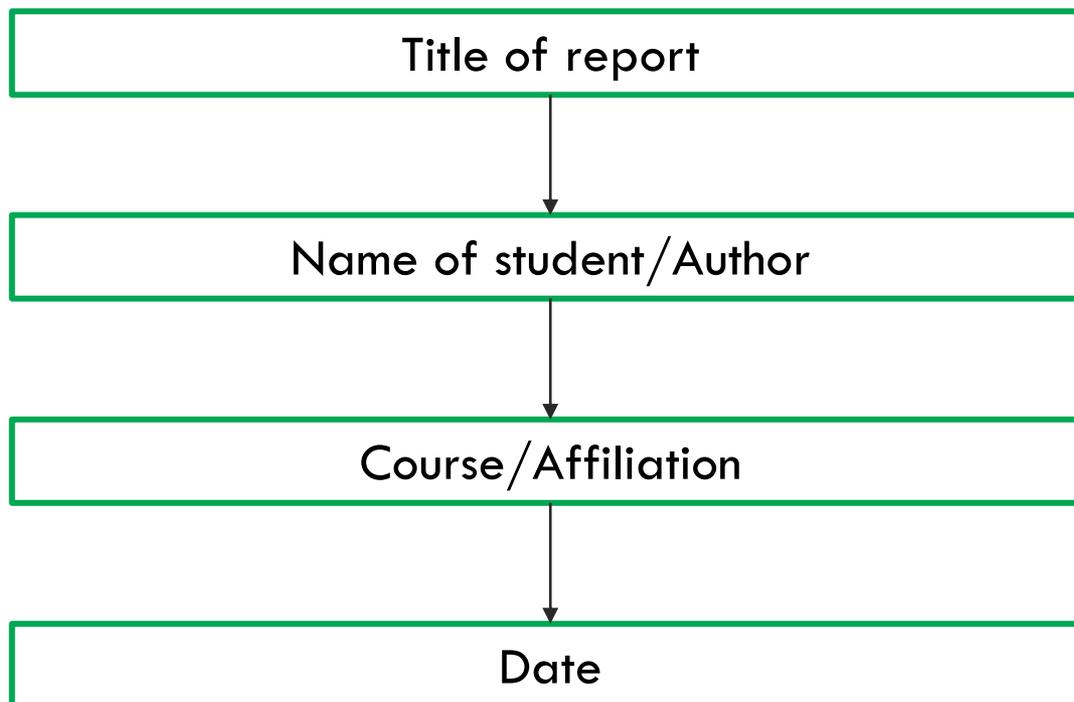
**Reports** are:

- practical,
- evaluative,
- analytical.



Reports are significant because they model academic journal articles. Writing reports at university can be academically challenging but may prepare the students for publishing their own research.

## Structure of a paper/report



## Structure of a paper/report

- Summary, index, table of content;
- Abstract (Executive summary);
- Introduction (Background);
- Materials and Methods (Procedure, Data collection, etc.);
- Results (Findings, Discussion, etc.);
- Conclusion and recommendations;
- References;
- Appendix (or appendices).

Extras: Glossary, list of tables, list of figures, list of abbreviations.

## Summary/index/table of content

List the content of the report



Page numbers

<b>Table of Contents</b>	
Chapter 1: Introduction to Bread.....	1
Types of Bread.....	1
Rye Bread.....	1
Whole Wheat Bread.....	1
White Bread.....	2
History of Bread.....	2
Chapter 2: Making Bread.....	4
Bread Leavening Agents.....	4
Soda.....	4
Yeast.....	5
Typical Bread Ingredients.....	6
Chapter 3: Bread-Based Recipes.....	9
Sandwiches.....	9
Desserts.....	12

## Abstract

Summarizes the report logical order



Outline purpose, research methods, findings and recommendations



Just a few lines long



It appears at the beginning of the paper, but it's **written last**

The readers of a scientific paper read the ***abstract*** for two purposes:

- to decide whether they want to (acquire and) read the full paper,
- to prepare themselves for the details presented in that paper.

## Introduction

Outlines context, background and purpose  
(also hypothesis and expected outcomes when presenting an experiment or an activity)



Defines terms and sets limits of research

The ***Introduction*** states the motivation for the work presented in your paper and prepare readers for the structure of the paper.

Briefly discuss *context, need, task, and object of the document.*

## Materials and methods

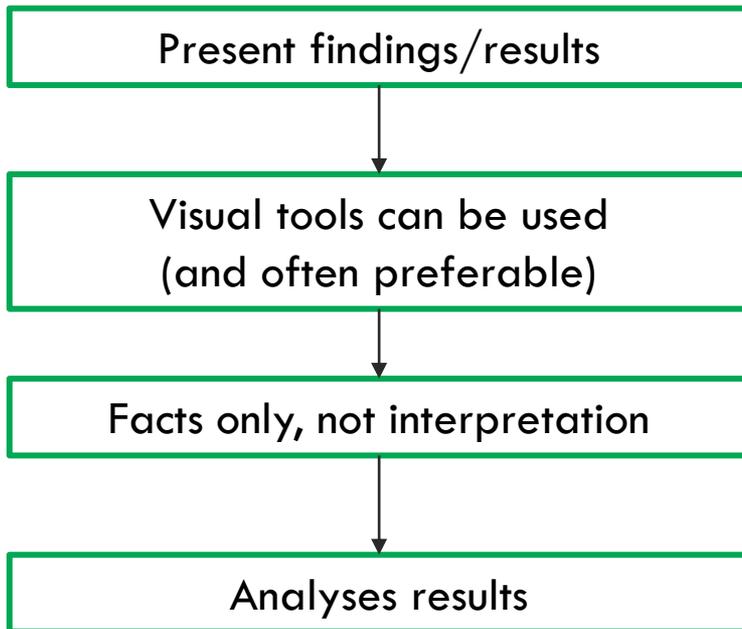
- Explain the choices you made in your procedure:
  - ✓ What justifies using a given compound, concentration, or dimension?
  - ✓ What is special, unexpected, or different in your approach?
- Do not make readers guess.
- Use tables, diagram and graphs rather than a paragraph of text to explain complex concepts.

Explain research methodology



Describe the details of the experimental procedures or the research

## Results and discussion



This is the section where the findings of the experiment are clearly presented, and the initial hypothesis is supported or not.

## Conclusion

This section states the most important outcome of the work.

Brief summary of findings

Relate your conclusions to the objectives

Do not introduce new information

- Results are related to the objectives: Show whether, or to what extent, you have succeeded in addressing the need stated in the *Introduction*.
- Do not restate everything you did.
- Make the conclusion interesting.

## Recommendation

Final part of the paper.

Suggest suitable changes and/or solutions



Action plan for recommendations if required



Future developments

- It suggests the future developments of the work;
- Write what could be interesting to study in the future;
- Suggests changes or solutions to the problems you encountered during the experiment;
- Describe possible future development.



## Concluding the report

References or Bibliography



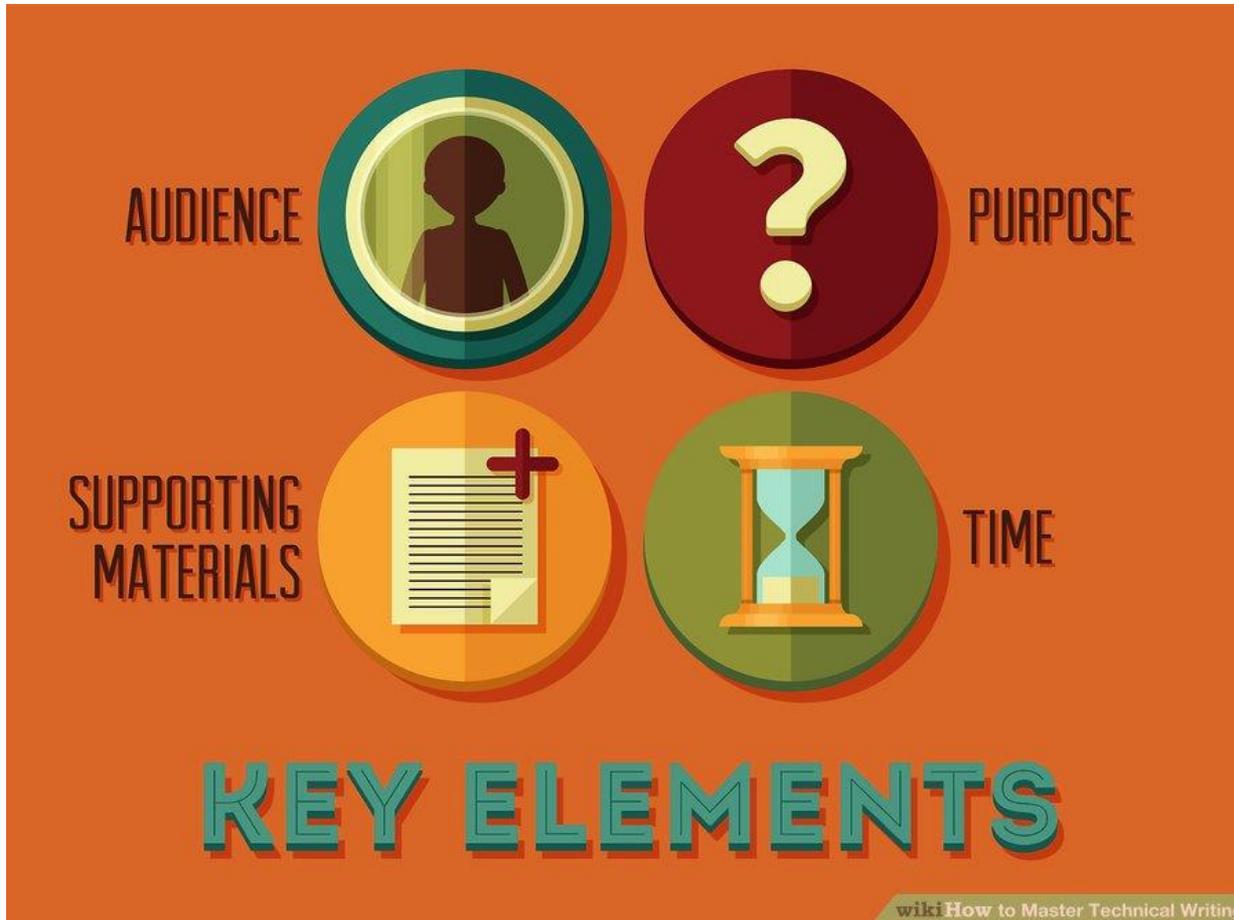
Glossary/List of  
abbreviations



Appendix



## Setting up the Idea



## Setting up the Aim

Aim: An intention or aspiration; what you hope to achieve.

Aims are statements of intent, written in broad terms.

Aims set out what you hope to achieve at the end of the project.

Example:

**Aim:** To investigate the relationship between tectonic-plate movement and the gravitational effect of the alignment of the major planets.

## Setting up the Objectives

Objective: A goal or a step on the way to meeting the aim;  
how you will achieve it.



Objectives use specific statements which define measurable  
outcomes.

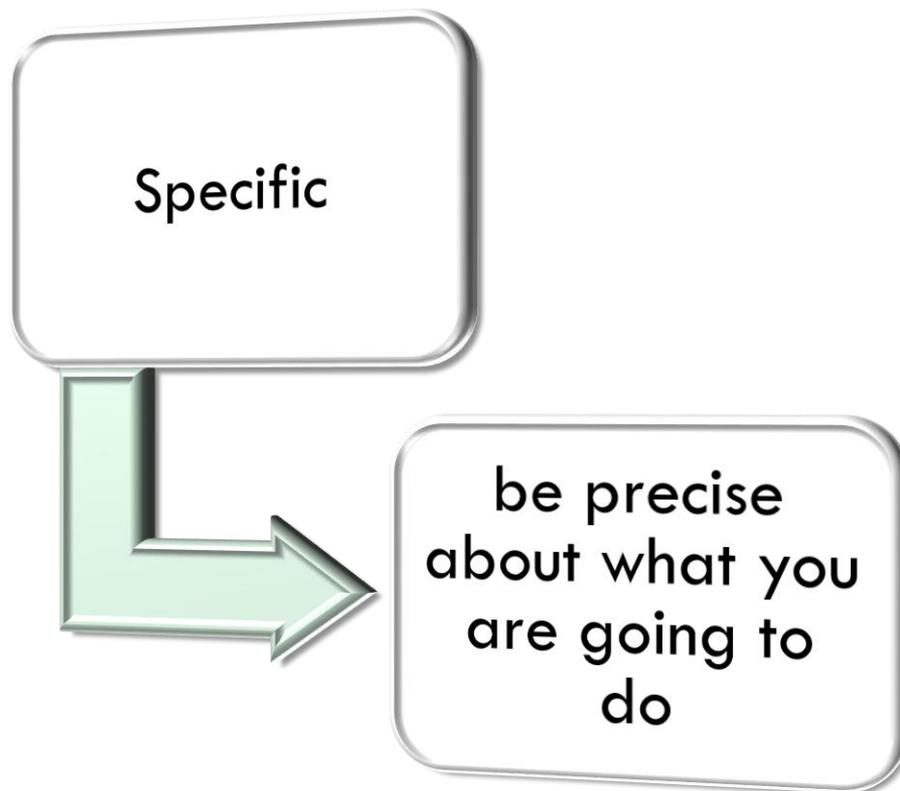
Example:

What steps will you take to investigate the relationship between tectonic-plate movement and the gravitational effect of the alignment of the major planets.

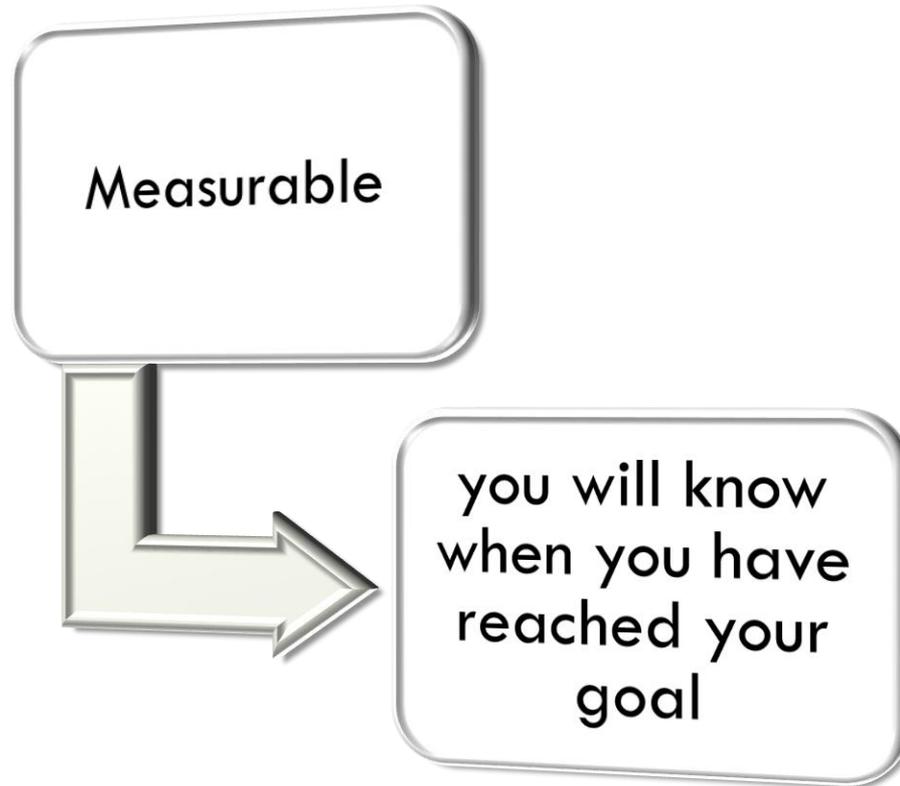
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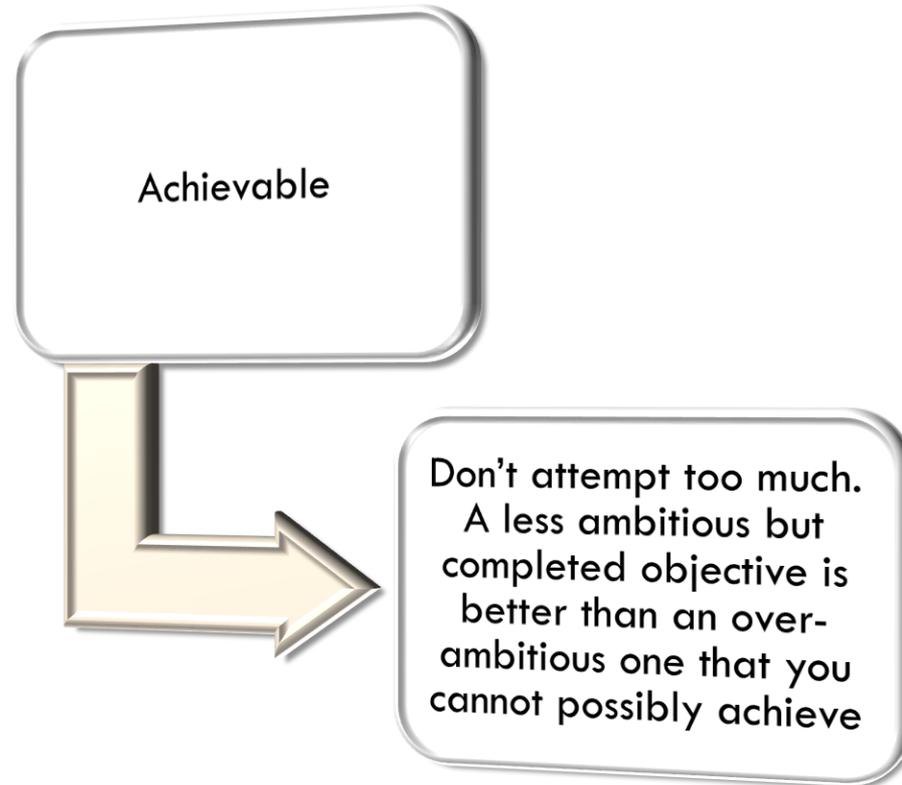
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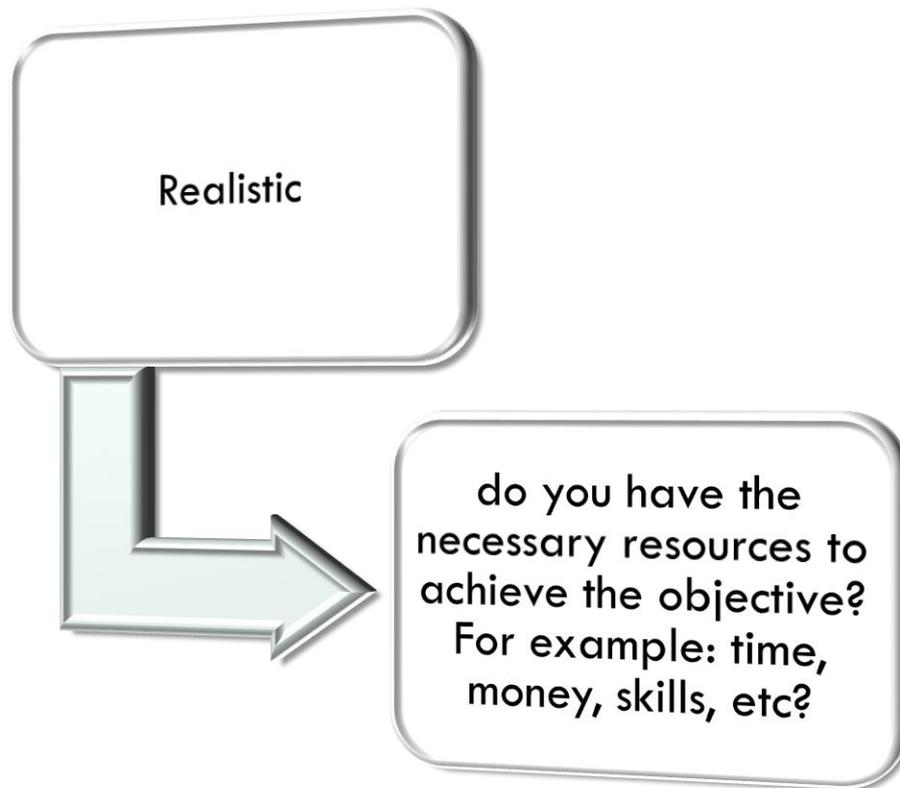
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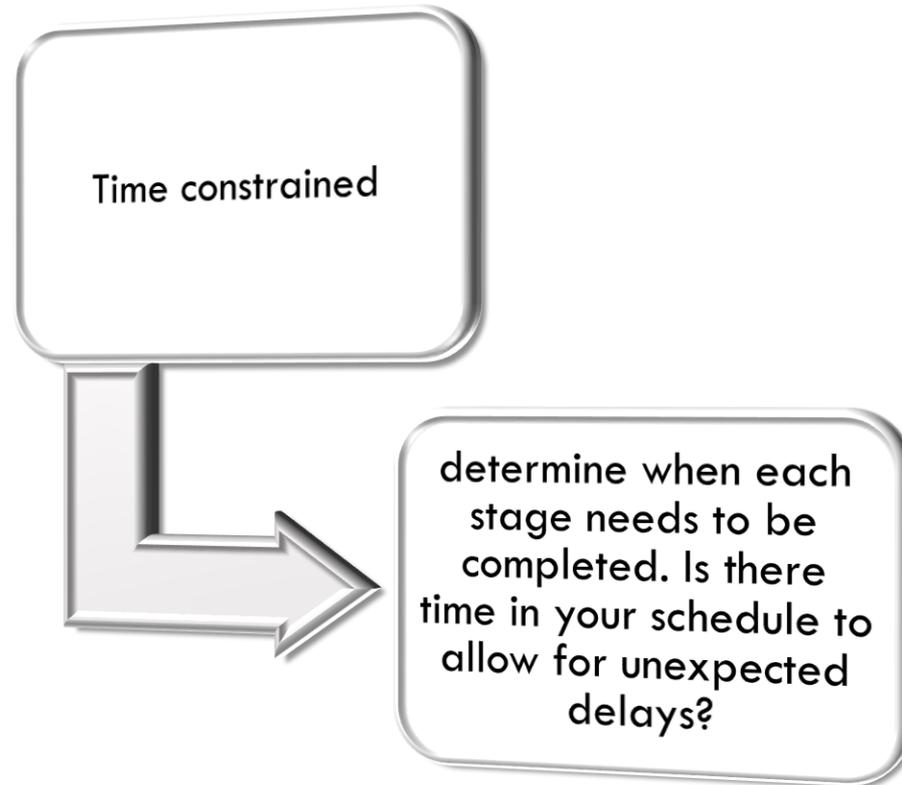
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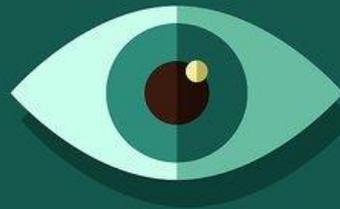




# BE AWARE OF THE SKILLS REQUIRED



MUST BE  
CLEAR & CONCISE



MUST HAVE A  
GOOD EYE FOR DETAIL



MUST HAVE AN  
EXTENSIVE KNOWLEDGE

wikiHow to Master Technical Writing

## The dissemination of the results: Tell the world what you did and how you did it.

- Replicability
- Clarity
- Self-correction
- Scientists don't like each other  
(peer-review!)

## Many reference and style systems:

- **Harvard:** The most used style of referencing; used widely in academic journals.
- **APA** (American Psychological Association): Citation technique usually used in the Social Sciences.
- **Chicago:** Style guide often used by academic publishers.
- **IEEE** (Institute of Electrical and Electronics Engineers): used in the fields of Engineering and Technology.
- **MLA** (Modern Language Association): academic writing for languages and literature.
- **MRHA** (Modern Humanities Research Association): used for academic theses and essays in the Humanities.
- **OSCOLA** (Oxford Standard for Citation of Legal Authorities): guidelines for legal materials.
- **Vancouver:** Style using a numerical system. often used in medical writing.

## Key points common to most subjects:

- Give an indication of the source of the material. Ex: write: '... as Sharpe (1993) has shown' and give the full details of the work quoted in your bibliography.
- When quoting text as it is, make this completely evident. Conventions vary, but you might say: 'The elk is of necessity less graceful than the gazelle' (Thompson, 1942, p. 46) and give the full details in your bibliography.
- If you wish to set out the work of another at length, identify the quoted text in a suitable way (e.g. by using quotation marks or inverted commas, and adding a reference as above).
- Long quotations may infringe copyright and they may also be considered poor scholarship.
- If you reproduce an illustration or include someone else's data in a graph or table, include the reference to the original work in the legend, e.g. '(figure redrawn from Webb, 1976)' or '(1 = data from Webb, 1976).



<https://student.londonmet.ac.uk/media/london-metropolitan-university/london-met-documents/professional-service-departments/library-services/referencing/HarvardReferencingGuideFull2016-05.pdf>

# Harvard Referencing Guide

<https://www.imperial.ac.uk/media/imperial-college/administration-and-support-services/library/public/IMPJ7432-Harvard-Reference-Guide-190828-WEB-1.pdf>



**MASTER CBRNe**

Chemical, Biological, Radiological, Nuclear and explosive  
Department of Industrial Engineering and School of Medicine and Surgery

Imperial College  
London

# Citing and Referencing: Harvard Style





## MLA Practice Template

1	Author.	
2	Title of source.	
	Optional element.	
CONTAINER 1		
3	Title of container,	
4	Other contributors,	
5	Version,	
6	Number,	
7	Publisher,	
8	Publication date,	
9	Location.	

## A few good websites for referencing and writing tips:

<https://www.plagiarism.admin.cam.ac.uk/resources-and-support/referencing/referencing-conventions>

[https://owl.purdue.edu/owl/purdue\\_owl.html](https://owl.purdue.edu/owl/purdue_owl.html)

<https://www.nature.com/scitable/ebooks/english-communication-for-scientists-14053993/contents/>

<https://style.mla.org/mla-format/>

