Writing a 5-Chapter Project Report

Writing a 5-Chapter Project Report

- **Chapter 1: Introduction** Describes the background and significance of the project — what reasons led to the decision to study this topic, what problems exist or why it is important — along with the objectives, hypothesis, scope of the project, and expected benefits.
- **Chapter 2: Related Documents and Projects** Reviews documents and textbooks related to the project, including who has previously studied the topic, and what theories, principles, and concepts are available that would support and benefit the conduct of the project.
- **Chapter 3: Methodology** Covers the work plan from the beginning to the end of the project, detailing how the preparation, implementation, and data collection were carried out.
- **Chapter 4: Results** Reports the results of the work carried out according to the plan outlined in Chapter 3 in detail — describing what was found through study and experimentation. The results should be reported based on actual data without offering explanations or suggestions as to why the results occurred.
- **Chapter 5: Conclusion, Discussion, and Recommendations** Summarizes all results obtained, discusses why the outcomes occurred as they did, and provides recommendations on what should be done if the experimental results are to be applied or if the experiment is to be conducted again.

Structure of a Science Project Report

The structure of a science project report is divided into 3 parts as follows:

1. Preliminary Section (Front Matter)

Consists of . . .

- 1.1 Outside Cover (Front Cover)
- 1.2 Blank Page (Flyleaf)
- 1.3 Title Page (Inside Cover)
- 1.4 Abstract
- 1.5 Acknowledgements
- 1.6 Table of Contents
- 1.7 List of Symbols and Abbreviations (if any)

1.1 Outside Cover (Front Cover)

The outside cover is a part that should be given special attention in terms of neatness and appearance. In general, 120-gram paper is commonly used, with text printed in a formal color, or colored paper may be used. The content on the outside cover should consist of the following information arranged in order:

- School / University Emblem (Logo)
- Title of the Science Project
- Full Name of All Project Members, specifying title, first name, and last name, with the word "By" placed before the names of all project members.
- A statement indicating the occasion for conducting the project, for example: *"This report is submitted as part of Course No. W 30291 Science Project 2 or K 30299, under the Special Science Classroom Curriculum of the Institute for the Promotion of Teaching Science and Technology (IPST), ... School, Semester ....., Mathayom Suksa (Grade) ....., Academic Year ....."*

All text on the outside cover should be arranged and distributed across the cover in a visually pleasing manner, using an appropriately sized font that attracts attention, with well-balanced spacing throughout.

1.2 Flyleaf (Blank Page)

A white A4 paper of 80-gram weight with no text printed on it, consisting of 1 sheet, placed immediately after the outside cover. If the report has a soft cover and the spine thickness does not exceed 0.5 centimeters, the flyleaf may be omitted.

1.3 Title Page (Inside Cover)

All text on the title page should be arranged and distributed in a visually pleasing manner, using an appropriately sized font that attracts attention, with well-balanced spacing throughout. The additional information included beyond the outside cover is the name of the advisor (supervising teacher).

1.4 abstract

The abstract is a concise and clear summary of the project report that covers all essential content of the project, particularly the objectives, scope of the project, methodology including any statistical methods used, results, and keywords (if any).

1.5 Acknowledgements

This section is where the project members express their gratitude to individuals, institutions, and organizations that have provided assistance and cooperation in knowledge research, project implementation, suggestions, and information. Writing the acknowledgements reflects academic ethics that project members should uphold and practice.

The language used should be formal and academic, avoiding spoken language and slang. When mentioning individuals, their full name, surname, and title should be specified. If the person holds a rank, position, or official duty, this should also be indicated. If gratitude is to be expressed to family members, they should be listed last.

The acknowledgements should be printed following the abstract, with a length of no more than 1 page. The name of the author should be stated at the end of the text. If the academic year or year is already indicated on the outside cover, it is not necessary to include the date, month, or year again.

1.6 Table of Contents

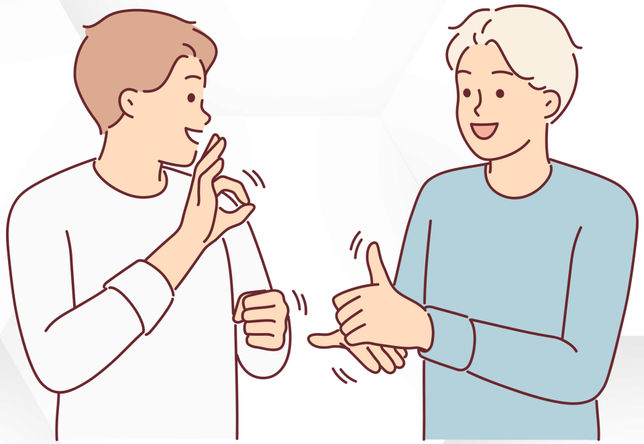
The table of contents is a section that shows the page order of the entire report, which consists of the preliminary section, the main body, and the reference section. For the preliminary section, alphabetical characters are used, beginning with the abstract as page "a" , while the main body and reference section use numerical page numbers.

In the case of a science project report that presents results in the form of tables and figures (photographs, maps, charts, graphs, etc.), the table of contents must include a List of Tables and a List of Figures as subsections, even if there is only 1 table or figure.

1.7 List of Symbols and Abbreviations

This section explains the various symbols and abbreviations used in the project, in order to clarify their meaning so that readers have a common and consistent understanding, for example . .

Symbol	Description
BK	Bangkok Metropolitan Area
CO	Carbon Monoxide Gas



Structure of a Science Project Report

The structure of a science project report is divided into 3 parts as follows:

2. Main Body

This section is structured into 5 chapters, consisting of the following:

- **2.1 Chapter 1: Introduction**
- **2.2 Chapter 2: Related Documents and Research**
- **2.3 Chapter 3: Experimental Methodology**
- **2.4 Chapter 4: Experimental Results**
- **2.5 Chapter 5: Conclusion, Discussion, and Recommendations**

2.1 Chapter 1: Introduction

1.1 Background and Significance of the Project

Describes the background and significance of the problem, the subject of interest, or the aspect that needs improvement. The explanation should begin with a broad overview before connecting to the project topic. It should specifically highlight the importance, provide reasons why this project was chosen to be conducted, and present the relevant principles or theories related to the project. If the topic has been previously studied by others, the results of those studies should be mentioned, and it should be indicated whether this project is a replication to verify results, an extension of previous work, or involves any improvements.

1.2 Objectives

Clearly and concisely states what the project aims to accomplish, for example: To study ..... To design ..... To construct ..... To improve ..... To test ..... To design, construct, assemble, and test the efficiency of an invention .....

2.1 Chapter 1: Introduction

1.3 Hypothesis (if any)

A hypothesis is a reasoned prediction of the answer to a problem or subject of interest, based on relevant principles and theories. Writing a hypothesis should also provide guidance for designing the experiment or survey.

1.4 Variables (if any)

1.5 Definition of Terms (if any)

This section provides the meanings or definitions of specific terms used by the project members in conducting the project. These definitions are specific to the work being carried out, in order to ensure a common and consistent understanding between the project members and the readers.

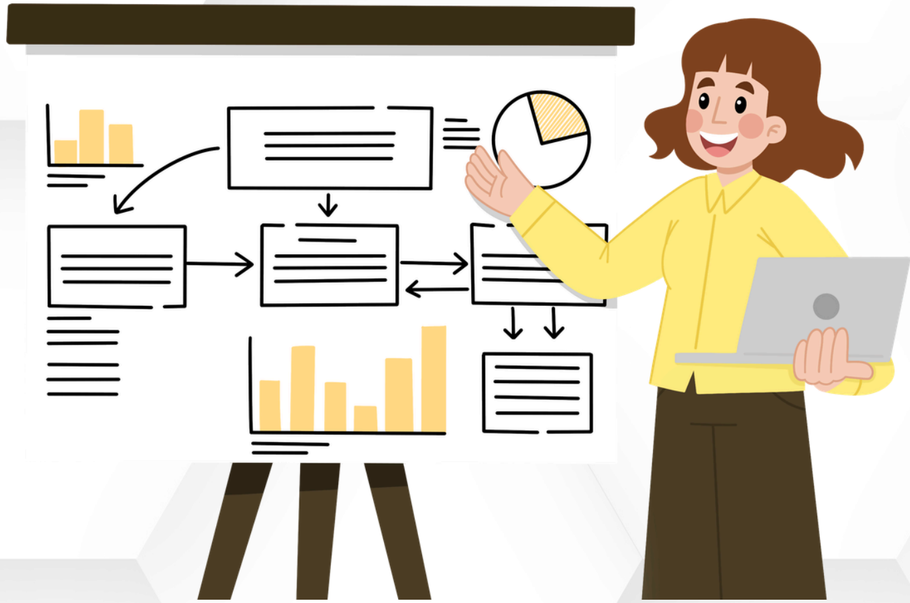
1.6 Operational Definitions (if any)

This section defines the meaning and scope of the variables stated in the hypothesis that are to be tested, so that they are understood consistently and can be observed or measured using reliable units within an internationally recognized system.

2.1 Chapter 1: Introduction

1.7 Scope of the Project

In order to obtain reliable study results, the scope of the project must be clearly defined, which includes identifying the population — whether living organisms or non-living objects — by specifying the name, group, type, location or source of production, and the time period of the experiment, such as the month and year. It also includes determining an appropriately sized sample that is representative of the population of interest, as well as defining the variables to be studied.



2.2 Chapter 2: Related Documents and Research

This chapter consists of content or theories drawn from related research documents, with proper citation of sources. The information should be current and up to date. For projects at the secondary school level, it is not necessary to conduct an exhaustive search of all related research studies and reference documents.

2.3 Chapter 3: Experimental Methodology

Writing the methodology requires describing the procedures for conducting the study and research, including the research design, population and sample, research instruments and data collection methods, data processing and analysis, in order to confirm the study results, analysis, and discussion. The description should contain sufficient detail so that anyone interested can replicate the experiment. The subsections are as follows:

3.1 Materials, Equipment, and Special Instruments (if any)

Materials refer to items that are consumable or deteriorate through use, with a service life of less than 1 year.

Equipment refers to items that are durable and have a long service life, which may include special instruments that are not commonly available. If the instrument is a well-known standard instrument, the name of the manufacturer and model should be specified. If the instrument is self-constructed, its principle of operation, design, and functioning must be described.

2.3 Chapter 3: Experimental Methodology

3.2 Chemicals (if any)

Should be written in Thai according to the terminology prescribed by the Royal Institute, and the English name should also be specified with the chemical formula in parentheses at the end of the name.

3.3 Living Organisms (if any)

Both the common name and the scientific name must be provided, along with the taxonomic classification according to the principles of taxonomy.

3.4 Experimental Procedures

The report should be written in sequential order corresponding to the objectives and hypothesis in a consistent and complete manner. If the study involves living organisms, the procedures should be described in detail, such as the methods for using instruments to collect samples and the methods for preserving living organism samples, and so on.

2.3 Chapter 3: Experimental Methodology

In addition, this chapter should address the design of the survey, invention, or experiment with appropriate and correct control of variables, clearly explaining the methods and instruments used for collecting data from the survey, invention, or experiment, as well as the statistical methods used for data analysis.

In the case of a project that is not of the experimental type, the chapter title may be changed to "Methodology" instead.

2.4 Chapter 4: Experimental Results

This chapter reports the results of the study, survey, invention, or experiment that were discovered firsthand, including the results of data analysis. The results should be written in sequential order corresponding to the objectives and methodology. Concise and precise language should be used to clearly communicate to the reader. Data may be organized and presented in the form of tables, graphs, and illustrations appropriate to the nature of the data. Before presenting any table or figure, the results must be fully described in writing, followed by a reference to the table or figure by writing "as shown in Table ....." or "Figure ....."

In the case of a project that is not of the experimental type, the chapter title may be changed to "Results of Operations" instead.

2.5 Chapter 5: Conclusion, Discussion, and Recommendations

5.1 Conclusion

When writing the conclusion of the project, if a hypothesis was stated, it should be indicated whether the results support or contradict the hypothesis. The conclusion should then be summarized in sequential order corresponding to the objectives and the results obtained.

5.2 Discussion

The discussion of results involves explaining the reasons that led to the findings of the proof, survey, invention, or experiment, which may include the discovery of new knowledge. The discussion is considered the section that demonstrates the knowledge and dedication of the project members toward the subject studied. Relevant knowledge should be researched and cited as references to support the reliability of the results. The discussion should be presented in sequential order corresponding to the issues reported in the results in Chapter 4.

2.5 Chapter 5: Conclusion, Discussion, and Recommendations

5.3 Recommendations

This section should present suggestions for improvements, problems, and obstacles encountered, in order to further develop and build upon the knowledge for anyone who wishes to continue studying or researching this topic in the future. All content presented must be derived from the actual conduct of the project, including the benefits gained from carrying out the project.