



Research Project Report Guide + Rubric

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Student's name: _____ Class: _____ Grade: _____

I. Project aim.

The aim of the research project is for you to be able to: 1) pick a topic of interest, 2) ask one or two specific questions (scientific problems) about the topic, 3) come up with hypothesis to try and answer the scientific problem and lastly, 4) try and prove these hypothesis right or wrong either through experiments, observations, designs, or secondary research. In short, you will explore the scientific method.

II. Grading categories.

1. D.O.: There has either been no work done or it is extremely deficient.
2. ✓ -: Poor work. Must be revised extensively.
3. ✓ : A good effort can be seen in trying to complete the task and the use of the scientific method. However, it still must be revised thoroughly.
4. ✓ +: Good presentation, clear problem, hypothesis, and use of the necessary steps of the scientific method to try and prove the validity of the hypothesis. Improvements are still required.
5. ✓ + +: Excellent presentation, Has all the steps as the previous grade, all the chapters to a scientific paper are included, excellent analysis of results.
6. ☆ : Has all the previous characteristics plus the possible contribution of a new scientific fact.

III. Project formulation.

A. Topic:

B. Scientific problem:

C. Hypothesis:

D. Statement of purpose: (What do you expect to discover with this topic and how will others benefit?)

IV. Components of the written paper.

Check-off

- a. **Title page.** (good, very good, make corrections). Bears the title in the top center of the page in capital letters followed by the type of project in regular letters, names of group members, my name and title, and on the lower part the name of the school, city, and year.

- b. **Abstract.** (good, very good, make corrections). This is a very shortened version of your paper. It should be one to three paragraphs long. It must contain, in order, your scientific problem, hypothesis, background information, and the conclusion that answers your scientific problem. You can include a statement of purpose and brief techniques used in your background information. The last sentences must state your final conclusions that answer your scientific problem.

- c. **Table of contents.** (good, very good, make corrections). Lists the sections of your paper and the page numbers where they begin. Each page should have a corresponding page number on the outer top or bottom corners. Do not include the Title page, abstract, or table of contents.

- d. **Introduction.** (good, very good, make corrections). Should include the four elements: 1. develop a problem, 2. give a brief background, 3. describe how the project will address the problem including why it is important, and 4. develop a hypothesis. (1-2 paragraphs)

- e. **Project design chart.** (good, very good, make corrections). Include your scientific problem, **hypothesis** (an educated guess with an explanation backed up with sources), **objectives** (pithy statements on what you need to accomplish in order to answer your scientific problem. Not to be confused with tasks), treatments (variables), controls, constants, and assumptions. (see section VII below; cut and paste into your paper.)

- f. **Locality.*** (good, very good, make corrections). Included the name of the locality, the address, the geographic coordinates, and a map of where you executed your project. (Cut and paste an image from Google Map.)

- g. **Background information.** (good, very good, make corrections). In your bibliographic search you must extract only the most important information that pertains to the objectives of your project and paraphrase it in your written report. This information should come preferably from published books and articles from journals. You can also use information from encyclopedias, magazines, and newspapers. You may use internet pages only as a back up. Some books and journal articles are found on the internet. These count as regular books and articles. These works must be cited correctly using the APA style!

- h. **Materials.** (good, very good, make corrections). In a 3 column chart list all the materials and supplies you used in the first column. In the second column you should express quantities and in a third column you should give a brief description of the item's function

- i. **Procedure.** (good, very good, make corrections). In paragraph form describe the steps you undertook to complete the tasks of your project. It should be as detailed as possible except for the obvious. Special tasks can be bulleted. Keep the order in which you completed your procedures. You must include the mathematical procedures and formulas that you will use to analyze your data.

- j. **Observations and results.** (good, very good, make corrections). In this section you just write what you found in the data you obtained without giving any explanations. If it is an experimental or observational project then you should only include averages and indexes you calculated. Tables and/or graphs are included in your annexes. If your project is a design then

you should include the blue prints of the design and a description of the building process. Omit in a secondary research project

- k. **Analysis of results.*** (good, very good, make corrections). *This is the most important part of your written paper!* Be sure to: rewrite your scientific problem and hypothesis, summarize your most important results that answer your scientific problem and your objectives and, if possible, explain why they happened (every iteration must be backed by a bibliographic reference wherever possible), and state whether your hypothesis was proven or not. If you have an engineering project explain if your design worked and what limitations you came across. Secondary research papers don't include this chapter (see **Step 08**).

- l. **Conclusions.** (good, very good, make corrections). You should answer each of your objectives and state your most important observations. But, most importantly, you should answer your scientific problem. You can use bullet points if you prefer. Also, if you cannot prove anything, that is also a conclusion.

- m. **Bibliography.** (good, very good, make corrections). You should have at least 3 sources other than web pages. To cite follow the A.P.A. writing style.

- n. **Suggestions for improvement and new research ideas:** In this chapter you will include what you think other students should be careful with if they follow a similar project, any suggestions you have for improving this project, and if you had new ideas that may be pursued in the future.

- o. **Anexes:*** All these next elements should go in the back after the previous sections.

- i. **Figures.** (good, very good, make corrections). These may include graphs, pictures, drawings, physical parameter charts, etc.

- ii. **Tables.** (good, very good, make corrections)



iii. **Glossary.** (good, very good, make corrections)



V. Additional comments.

VI. Miscellaneous.

A. Font Specs. Your text should use Times New Roman, Garamond, or Goudy font. It should have a font size of 12-14 and should be double spaced. Include as many chapters on the same page as possible. All references used must be cited throughout the text. Only A.P.A. style will be accepted. For more information you can google APA style.

*: These chapters or inserts do not necessarily pertain to your project. Ask me if you are not sure.



VII. Project Design chart. You should include your Scientific Problem and Components e, f, and g in a table that looks exactly like the one presented here.

SCIENTIFIC PROBLEM		
HYPOTHESIS		
OBJECTIVES		
INDEPENDENT VARIABLES (TREATMENTS)		
DEPENDANT VARIABLES		
CONTROL		
CONSTANTS		
ASSUMPTIONS		