Research Paper Description and Components

**Science Project Portfolio: The Research Paper**

The research paper makes up 25% of the first science project grade. This sheet reviews the requirements for the research paper and provides a timeline for completing the research and drafting each section.

**Research Paper Components**

The research paper is *not* an essay or a personal narrative. The purpose of the research paper is to summarize the science behind your project and demonstrate that your hypothesis is based on research and not just your opinion. The research paper must include:

* **Paragraph 1: Introduction**

Clearly state the question you are investigating, and explain why you chose this topic. What made you interested to find out more about it? End this paragraph with your **thesis statement**, one sentence which tells the main idea of your research paper.

* **Paragraph 2: Key definitions and concepts**

All scientific research papers explain the important terms and ideas so that readers will be able to understand the experiment being discussed. If you have many terms or ideas, you may break this up into several paragraphs for ease of reading. This section discusses the science related to your experiment in a general way.

* **Paragraph 3-4: Research**

This section should explain the science behind *your* experiment. The discussion here should explain your hypothesis and justify your methods (testing and data collection techniques) and analysis. Your research section can also include information about how your experiment relates to other work in science and why it is interesting or important, which can inform your application and future research sections.

* **Paragraph 4: Conclusion**

Summarize your paper by recapping the research that has enabled you to investigate your scientific question. It is a good idea to end the paper by restating your question.

**Research Process**

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| **Assigned** | **Task (Draft)** | **Details** | **Date Due** |
| Tues Sept 6 | Introduction | Document your question. Explain why you are investigating this question. Why should a reader care about this? | Fri Sept 9 |
| Tues Sept 6 | Definitions & concepts 1 | List key terms and ideas. Be sure to record your sources! | Fri Sept 9 |
| Mon Sept 12 | Definitions & concepts 2 | Define key terms and ideas in a glossary format. Be sure to record your sources! | Fri Sept 16 |
| Mon Sept 12 | Explanation | Discuss the science behind your experiment, and explain what is going to happen during your test | Fri Sept 23 |
| Mon Sept 19 | Conclusion | Recap your research and restate your question | Fri Sept 30 |
| Mon Sept 19 | Bibliography | Create a Works Cited page in MLA format | Fri Sept 30 |
| Mon Sept 26 | Experimental Design | Define hypothesis & variables (independent, dependent, constants, controls) using transformation worksheet | Mon Oct 3 |