Science Fair Research Plan Essay Guide

Name

Academy of Science and Technology

Special Topics in Science

Teacher

Due Date

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The science fair research plan is likely the single most important part of a science fair project for a variety of reasons. Firstly, it sets the future plans for your project. While the research may not, and probably will not, follow the research plan exactly, it will form a basis for the research that year. Another reason it is important is fair approval. In order to compete at even the district science fair, research projects must follow certain guidelines. The fair knows that the researcher will follow these guidelines based on the research plan that the researcher wrote before conducting your experimentation. If a research plan is not in accordance with the guidelines it can result in a rewrite and possible later disqualification from the fair at higher level competitions. Lastly, in relation to these guidelines, the research plan assists the researcher in determining the proper safety protocols and precautions for their project so that they may complete their project safely.

Research Plan Format

The research plan, like all other essays in the Special Topics in Science class, will be written in APA formatting. However, other specifications of the research plan include that it will have sections including an introduction, method (not methods), results, and references. Additionally, it will be written in future tense when referring to your work, as the researcher should have technically not done any work this far. The research plan should have a heading, it may be the project's title, however, it must also be less than 50 characters, meaning that the title may need to be abbreviated, and it must be in all caps. The research plan will start with a title page, similar to the first page on this document, and all pages will be numbered in the top right hand corner. Finally, images may be used in the methods, introduction, and results but they must be properly cited according to APA formatting.

Research Plan Introduction

The first section of the research plan is the introduction. This section is meant to mainly convince readers of the importance of the research. However, also in the research plan you must briefly introduce your project at the end. That being said, your research plan should start with background information about your project, all cited with in-text citations. If the researcher is discussing something such as weather patterns in relation to their project, it may be helpful to include a map or chart of rain amounts. These charts must be cited properly. At the end of the research plan, the researcher should discuss familiar projects, and demonstrate how the researcher's project will be different and better than these past projects. These past projects should be cited and from scientific journals rather than traditional websites in order to bring the current research greater validity.

Research Plan Method

The first thing to note is that this section is titled "Method" and not "Methods." This section contains three subsections: safety (no subtitle), materials (subtitle left), procedure (subtitle left).

The first section is safety. In this section researchers must first discuss the safety precautions involved with your project such as electrical shocks and sharp objects. Using this information a researcher will do two things. First, the researcher will talk about how they will counter these safety precautions, mentioning specific instruments and procedures that you will follow during your experimentation. Secondly, once the research plan has been submitted, the researcher will need to complete the associated risk forms that are determined by the safety precautions your project has. One last critical part of the safety section is your supervisor, every researcher must have a supervisor. This supervisor may be a teacher or parent, but if the project

is being conducted in a lab, the supervisor should be a professor or doctor working in that lab. This professor should be witnessing all your work on the project. The most important part of this section is to write everything the researcher thinks they may need, as adding it after the fact could cause issues and may lead to disqualification. If any SDS sheets are required, they must be attached to the back of the research plan.

The second part of the method section is materials. In this section every material involved in the project should be listed with specifics as well. These specifics should include quality, volume, amount, or anything else that could be detrimental to your project. Once again, in this section it is best to include all that could be needed rather than leave some materials off the list.

The last part of the method is procedures. In this section, the researcher must, in high detail, write all intended procedures (once again, write all that you can think of rather than add later) to complete the project and use all the materials covered in the materials section. The procedures should be at least 20-30 steps, however, depending on the difficulty of your project and how much information is recorded in each step it may be upwards of 70. If you have any preliminary technical drawing or pictures that could be useful for a reader to envision the project, it may be helpful to include it in this section.

Results

While this section may not be required, it is useful in order for the researcher to know the ways to display their data. In this section, include which type of charts and graphs you intend on using and why as well as possible statistical tests that you will be using.

Example Research Plan: Grade received was a 4.4

https://docs.google.com/document/d/1kI-9fUKQV1Gkw5DPcgktoDzrpphiaLzK/edit?usp=sharing&ouid=100725799973682099401&rtpof=true&sd=true

Example 2: Grade received was a 3.0

Copy of Research Proposal

Feedback:

“Background information is good and detailed, but you need to cite your sources. Describing the experiment to be done in the introduction helps us to understand the procedures. Also, add rationale to steps in procedures that might seem unclear or out of place. Great job with results. Check out APA formatting.”