

Your final research paper, display board and in-class presentation will count as 2 test/assessment grades for the second quarter when it is due.

Science Fair Research Paper Rough Draft

NAME _____

These numbers are not your grade for the rough draft. You just get credit for turning your rough draft in. The rating is just to show you where you could still improve and what you're missing with this rough draft so it can be completed before your final draft. This paper provides hints and refers you back to your science fair packets.

You do not have to have the highest ranking in each section to get a good grade on your project, but it shows you what an excellent project would include.

Please let me know this week if you need help with anything before your final version of your paper!

Title Page

- 0 – The title page is not included
- 1 – The title page is present, but is missing something
- 2 - The title page includes the project title, student name, and student grade

Abstract

- 0 – The abstract is not included.
- 1 – The abstract is present, but needs to better summarize the project and findings in less than 250 words. (What did you do, why did you do it, what did you find out, how do you know and why is it important?)
- 2 – The abstract meets the basic criteria and is on its own sheet of paper, but you should take another look at science fair packet #4 to make sure that you have included a full summary of your entire project in less than 250 words. (What did you do, why did you do it, what did you find out, how do you know and why is it important?)
- 3 – The abstract is well-written and is a good summary of the project.
- 4 – The abstract is exceptional, written in the third person and very clearly summarizes the project.

Table of Contents

- 0 – The table of contents is not included.
- 1 – The table of contents is not detailed enough to show the location of important portions of the paper or the formatting makes it difficult to find the important parts. (See the sample paper on our website for an example.)
- 2 - The table of contents shows descriptions of important parts of the paper and the pages where they are located. The table of contents has formatting that is clear and information that is detailed.

Purpose

- 0 – The purpose or question is not included.
- 1 – The purpose of the experiment is not described in detail or the reason behind the project is not explained.
- 2 – The purpose of the experiment is clear and refers either directly or indirectly to the independent and dependent variables of the study. Third person is not used at all or is used in a very limited fashion.
- 3 – The purpose is very well-written, clearly explains the purpose and variables as well as the reason behind the choice of study. The purpose is written predominantly or totally in the third person.

Background (Content)

- 0 – The background research is not included.
- 1 – The content of the background is not enough to explain the scientific concepts and vocabulary that are the basis for the experiment. The background research may also not reach the minimum length of 2 pages.
- 2 – The content of the background does provide the basics of the scientific concepts and vocabulary needed to understand the experiment. The background is at least two pages long. There may not be an introduction or conclusion to this section or the organization of the paragraphs and sections may make it difficult to follow. There may not be appropriate transitions between ideas.
- 3 – The background research provides important scientific information that someone needs to understand your project. There is an introduction, conclusion and appropriate transitions between ideas or paragraphs that help the reader follow the organization.
- 4 – The content of the background is exceptional. The information from a variety of sources has been combined to form clear lines of thought and a thorough explanation of the scientific concepts behind the project. The student shows a thorough understanding of concepts and vocabulary related to the science.

Background (formatting, source citations)

- 0 The background research is not included or the background research does not include in-text citations.
- 1 The background section shows an attempt by the student to cite information using in-text citations, but there are some errors or omissions. (See example paper and science fair packets for more information.)
- 2 The background section is mostly cited correctly according to APA format or a modified form of APA that is consistent throughout the paper.
- 3 The background section is cited correctly according to APA guidelines and the student has made effort to include as much information about sources as possible.

Variables

- 0 Variables are not included.
- 1 The basic variables are listed, but they may not be totally clear and the constants may not be listed.
- 2 The independent and dependent variables are listed and clear. Constants and controls are also listed.
- 3 The variables are all listed and described. Controls and constants are included, thorough and explained.

Hypothesis

- 0 The hypothesis is not included.
- 1 The hypothesis is included, but is brief and shows little explanation of how or why the hypothesis was made. (Does not include the rationale or the “because”)
- 2 The hypothesis is appropriate for the experiment and in addition to the expected result of the experiment, the student has explained the reason(s) why this is expected based on the background research or experience.
- 3 The hypothesis and rationale are complete and clear. The student uses the third person and appropriately addresses the reason(s) why the hypothesis has been chosen based on the background research.

Materials

- 0 Materials list is not included.
- 1 A list of materials is included but it is not detailed or is not complete.
- 2 A somewhat detailed list of materials used for the project is given.
- 3 A detailed list of materials used for the project is given.
- 4 A very detailed list of all materials used for the project is given. The list includes brands, sizes, and amounts in metric units.

Procedure

- 0 Procedure is not included.
- 1 A procedure is included but it is not detailed or is not complete. Exact procedure should be included where someone else could repeat your experiment from your procedure. If safety precautions and procedures are required, they should also be included.
- 2 A somewhat detailed procedure is given used for the project is given, but more details and clarity should be included. If safety precautions and procedures are required, they should be included.
- 3 A detailed procedure is included. Diagrams or pictures may be included as well to further explain the procedure.
- 4 A very detailed procedure is given for the project in the third person. Diagrams or pictures are included when needed to clarify the procedure. Someone could easily repeat this experiment based on this procedure.

Results

- 0 The results (data tables and graphs) are not included.
- 1 Basic data tables and graphs are included, but they are incomplete or not set up appropriately.
- 2 The data that was collected is summarized in tables with titles and be labeled appropriately. Units are be used when applicable. Graphs are included when needed to show trends. There may be small omissions or errors in the set-up of either.
- 3 Tables and graphs are well-done and appropriate, labeled and clear. Graphs show means or averages and show the independent variable on the x-axis and the dependent variable on the y-axis.

Discussion

- 0 The discussion section is not included.
- 1 The discussion is limited and does not fully explore or explain the data collected in tables and graphs in the results section.
- 2 The discussion refers to figures and graphs in your results section and explains the basic trends. The discussion is still limited and needs to be expanded upon. (See your science fair packets and the example paper)
- 3 The discussion is well-written and discusses the data appropriately.
- 4 The discussion is exceptional. Trends, outliers and calculations are discussed. Limitations of measurements are also discussed.

Conclusion

- 0 The conclusion section is not included.
- 1 The conclusion is limited and does not fully address the hypothesis and explore the experiment. (See the sample paper and science fair packets)
- 2 The conclusion addresses the hypothesis of the experiment, but uses “dead words”. The conclusion must be expanded to discuss the importance of the experiment, possible future research and improvements that should be included in the experimental design. (See science fair packets and sample paper)
- 3 The conclusion is well-written and complete.
- 4 The conclusion is exceptional. It is written in the third person and shows deep understanding of not only the scientific concepts in the experiment, but also in the nature of science and the design of controlled experiments.

Acknowledgements/Credits

- 0 Acknowledgements not included
- 1 Have you thanked the people who assisted you: Mentors, parents, teachers, participants in your study & others

Reference List

- 0 Reference list is not included
- 1 Less than five references are used or only basic reference information is included, but it is not complete or is not formatted appropriately.
- 2 At least five references are cited, but the formatting of the citations may not be complete.
- 3 More than five references are cited and the formatting contains only small errors.
- 4 More than five references are cited and they are formatted correctly. The list is in alphabetical order.

Proofreading for grammar, spelling, formatting and meaning.

- 0 Overall, the paper shows many spelling, grammar and formatting errors. The meaning is sometimes difficult to understand due to these errors.
- 1 The paper shows some spelling, grammar and formatting errors. The meaning is not interrupted very much by these errors.
- 2 The paper has few spelling, grammar and formatting errors. The meaning is not at all lost due to these errors.

Research notebook:

- 0 Research notebook not turned in with rough draft
- 1 Research notebook has limited entries and does not show thorough and continuous use throughout the time of research from brainstorming project through writing the abstract.
- 2 Research notebook has some entries, but there are several important features and details not included.
- 3 Research notebook meets most of the criteria, but still does not meet all of the requirements for a level four notebook.
- 4 Research notebook is well-done with accurate & detailed notes of everything done for project. All entries are dated, pages numbered and writing is in ink and in cursive, there is an index in back of the notebook shows the location of important information. Research notes and raw data are included as well as reflections on various parts of the experiment. Problems and changes are spelled out in the notebook.