

Science Fair Project Information—Information Discovery/Research Plan

Due September 19, 2014—Test Grade

Papers will only be accepted submitted through TurnItIn.

Part 1: Information Discovery

You will write summary of background research for your topic. What do we already know about your topic? What information is necessary to know before your project can be understood? If you are unsure about what you should research, please discuss with your teacher right away. No matter what topic you are doing, there is background research to uncover.

Be sure to double-space, 12 pt. standard type, 1 in margins. Also include a bibliography of at least five sources (in proper MLA or APA format). Although reports may be much longer, your report should be 2-3 pages long, not including the research plan.

Remember, this will become the introduction to your final report, so be sure to save the electronic copy in two places. Your bibliography will be turned in several more times also.

Part 2: Research Plan

Your research plan shows your thought into designing your project. Use headings for each of the sections.

- A. What is the RATIONALE for your project? Include a brief synopsis of the background that supports your research problem and explain why this research is important scientifically and if applicable, explain any societal impact of your research.
- B. State your HYPOTHESIS(ES), RESEARCH QUESTION(S), ENGINEERING GOAL(S), EXPECTED OUTCOMES. How is this based on the rationale described above? (Most students will either have an hypothesis & research question OR engineering goal & expected outcomes. If you are not sure about your project, discuss this with your teacher.)
- C. Describe in detail you RESEARCH METHODS.
 - Procedures: Detail all procedures and experimental design including methods for data collection. Describe only your project. Do not include work done by mentor or others.
 - Risk and Safety: Identify any potential risks and safety precautions needed.
 - Data Analysis: Describe the procedures you will use to analyze data/results that answer the research questions or hypotheses.
- D. BIBLIOGRAPHY: List at least five (5) major references (e.g. science journal articles, books, internet sites from your literature review. If you plan to use vertebrate animals, one of these references must be an animal care reference.

Your report will be graded using the rubric on the back.

Log Book (This will be due October 20, 2014)

Once you begin your experiment, it is important to keep record your data in a bound notebook (composition style). Keep the following guidelines in mind. Your logbook will count as part of your grade for the display in December.

For this check, you should have documented evidence that you have started your experiment. Be sure to take pictures of your project as you complete it, for documentation and for your backboard.

Your log book should contain accurate and detailed notes of everything you do for your research project. Good notes will show that you are consistent and thorough. It will also help you when you write your ABSTRACT, RESEARCH PAPER, and DISPLAY.

1. A log book is a notebook that must be bound with stitching or glue so that the pages are not removable.
2. **Your log book should be written in ink only.** Do not use pencil or printouts from a computer (except graphs and charts).
3. Put your name and school on the front of your log book.
4. Include notes on readings and bibliographic information.
5. Include your thoughts, ideas, and trials.
6. Include your raw data (all of the measurements you collect during your experimental trials). **All measurements should include appropriate METRIC units.**
7. Staple in copies of graphs or charts.
8. Attach photos and label them.
9. **Date every entry and enter each science activity you do.**
10. Do not try to make your log book neat. It should be readable, but you may cross out information you don't want as you work. Never remove pages from your log book.

Information	Content	Information is incomplete, contains inaccuracies and is not clear 10	Information is complete, but is not state clearly 20	Information is complete, accurate, and stated clearly 30
	Conventions	Basic punctuation tends to be omitted, haphazard, or incorrect; frequent spelling errors; capitalization is inconsistent or incorrect; errors in grammar or usage interferes with readability and meaning; substantial need for editing 2	Punctuation, spelling, and capitalization are generally correct; occasional lapses in correct grammar or usage; moderate need for editing 5	Correct capitalization; correct grammar and usage contribute to clarity and style; very little need for editing 10
	Format	Paper includes very few of the formatting requirements. 2	Paper includes some of the formatting requirements. 5	Paper is double spaced, one inch margins, 12 point type, standard font 10
	Comments:			
Research Plan	Rationale	Missing two of the parts 2	Missing one of the key components. 3	Rationale stated clearly. Includes a brief synopsis of the background that supports the research problem and explains why this research is important. 5
	Hypothesis & Research Question OR Engineering Goal & Expected Outcomes	Unclear and not linked to the rationale. 5	Stated clearly, but does not link to the rationale. 7	Stated clearly. Describes how this is based on the rationale. 10
	Procedure	Procedure is not clear and data collection is not described. 5	Procedure is not clear or data collection is not described. 10	Details all procedures and experimental design including methods for data collection. 15
	Risk and Safety	No mention of potential risks and safety precautions needed. 0	Missing either potential risks or safety precautions needed. 3	Identifies any potential risks and safety precautions needed 5
	Data Analysis	Inappropriate procedures described. 1	Procedures described, but not clear. 3	Describes the procedures that will be used to analyze data/results that answer the research questions or hypotheses. 5
	Bibliography	Fewer than three sources listed in proper format. 5	Three or four reputable sources listed in proper format. 7	At least five reputable sources listed in proper format. 10
	Comments:			Total Points: