SF Report Title

Make sure that the title that appears here is copied directly from the approved proposal form.

Student Name
Date being turned in

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Abstract

Your abstract is written *after* you have finished writing your report and completed your experiment. It quickly summarizes your project. Think of it like a book jacket that tells about the story within. Start by telling your report topic, what you hypothesized, briefly describe how you tested your idea, what happened in the experiment, and end by telling if your hypothesis was *supported*. Make sure you use the word *support* and not *prove*; otherwise, I will deduct points. The abstract will appear on a page by itself at the beginning of your report. It should be no longer than 250 words. This paragraph is 153 words to give you a guide to how long the paragraph should be. If you want to double check your own paragraph, highlight the paragraph, click on *REVIEW* in the tabs above, and then click *WORD COUNT* in the menu bar. It will count the words for you.

Introduction

Reason for Interest

Start by telling how you became interested in the project you selected. Scientists usually observe something that inspires them to question, "Why?" What did you observe? What did you wonder? For example: once a student observed that while her family's boat floated, pennies sank. She wondered why. Your reason for interest should be one complete paragraph. You will notice that I have not indented paragraphs as I am typing. That is because I want you to follow the rule regarding paragraphs when word processing. If you are going to double space your text, indent your paragraphs. If you are going to single space your text, double space between paragraphs. However *NEVER* do both.

Historical Background

This section will contain a *minimum* of three paragraphs about the historical background of your topic. You might include a look at how ideas of your topic changed over time (people used to think everything in the solar system revolved around earth but now we know the sun is at the center). You might tell about how advances in your topic occurred over time (taxonomy advanced due to the invention of the microscope). Maybe your background will explain why there was a need to develop or better understand the topic you investigated (research shows that exposure to the sun increases one's risk of skin cancer). When you were looking for resources, I asked you to put an "H" for historical or a "S" for scientific information. This is where your "H" information will be placed.

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Scientific Background

This is where you will place the "S" information to tell the reader about the science that explains the results of your experiment. Remember to write in third person. Do not "talk" to the reader. Avoid words like "you." For example, do not write, "When you spend too much time in the sun, you might get a sunburn." Instead write, "Spending too much time in the sun can cause sunburn." The science you write about should be an extension of the historical background. For instance, if you are studying the relationship between overexposure to the sun and skin cancer, explain the different types of rays from the sun, the layers of the skin, and what happens when the two intersect. Also tell what skin cancer is and what it does to the skin. What are the warning signs? How long does it take for changes in skin to appear? Treatment? Etc. Remember that three paragraphs is a minimum. Also, be sure to use your own

words. If done correctly and on your own, I will hear your voice rise from the page. If you copy from another source or submit for credit someone else's writing, it is plagiarism, and this will result in an automatic re-do the following year. You will also earn zero credit on the Introduction portion of your report.

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Reason Proof Should be Done

Write one paragraph explaining *why* you think the topic of your report is important to society. How will knowing the science you researched make the world a better place? How might it improve people or machines? How might it contribute to a better understanding of the world around us?

How Information Can be Used

Write one paragraph explaining *whom* you think the topic of your report will benefit. Who will be the specific recipient of this knowledge? How might a person's life change knowing what you now know?

Experimental

Problem Statement (experiment) or Need Statement (engineering/design)—pick only one:

Copy the approved problem statement or need statement directly from your approved proposal. Make no changes. Based on your selected topic, did you write a problem statement, need statement, or question?

Hypothesis (for experiments) or Design Statement (for engineering/design)—pick only one:

Copy the approved hypotheses or design statement directly from your approved proposal. Make no changes.

Materials

- Think about recipes here—the materials section is a detailed list of ingredients
- As stated in your directions, materials should be clear.
- Name each item, size and amount.
- State the instruments you used.
- Materials should be in a bulleted list. Notice that I am typing the items without putting them in a bulleted list to begin with. My advice is always to key the facts first and worry about making it "pretty" afterwards. There are benefits to this
- One benefit is that if you apply bullets or numbers after you have finished keying the information, it will make a clean hanging indent for all lines after the first line of your bullet or number.
- Item 6
- Item 7
- Item 8
- Item 9
- Item 10

Procedure

1. The procedure should be a numbered list. Just like the materials list, key everything first and worry about appearance later. Make sure to hit the enter key at the end of each individual item. If you do so, the computer will know when to start a new number.
2. Think recipe again—the procedure section is where directions are placed for the reader to follow. Remember that a recipe does not tell what the author did—it explains what the reader should do to bake a cake, or in this case, repeat your experiment. Give instructions for another to follow.
3. Make sure that your procedure is very thorough and clear. The only way to know if you have included enough details is to have another person read your directions and complete the tasks. If questions arise or if the person does not perform the task properly, you left something out.
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5. Procedure 4.
6. Procedure 5.
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Observations

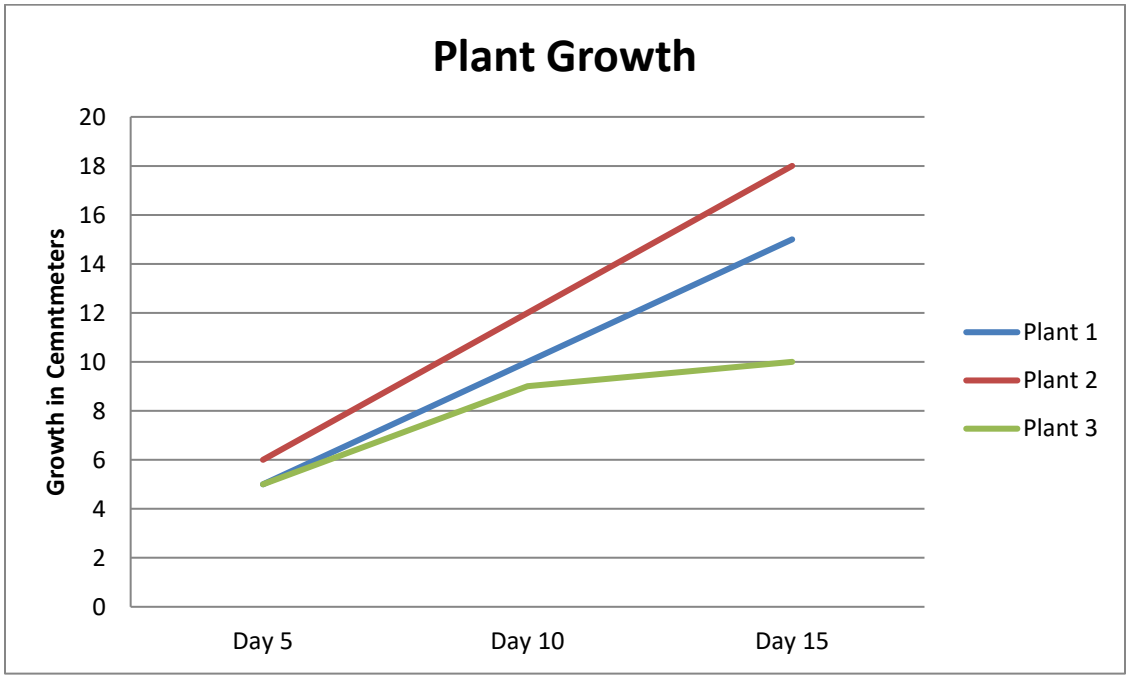
Use your words to tell what happened during the experiment. Once the experiment was set up, what did you see, smell, hear, or touch that was relevant to your experiment? Pretend you are talking to me over the phone and keeping me up to date on what is happening. Paint the picture for me to "see" your

experiment through your words. These are your qualitative observations—things you have observed using your senses. But remember to only relate your qualitative observations to your experiment. Don't report about a car horn you heard outside your window or the sun warming your skin if it doesn't relate to your experiment.

Next tell what you measured using numbers. When you completed your proposal, you had to tell what you were going to count. First place your data in a table and then convert it to a graph. Make sure you use the correct graph format—pie charts show parts to the whole (52 percent of my class is female while 48 percent is male), line charts show changes over time (plant growth over a six-week period), while bar graphs show comparisons of similar data (the battery that lasted the longest)

Plant Growth

	Day 5	Day 10	Day 15
Plant 1	5	10	15
Plant 2	6	12	18
Plant 3	5	9	10



Data Analysis

This is where you will use your words to tell what you thought the numbers above meant. Now that you are done counting and measuring, what do those numbers tell you? Use your best reasoning skills to find the meaning in the numbers. Tell whether you thought your manipulated variable made a difference. Did something unexpected happen during the experiment that might have affected the outcome? Did you need to modify an original step along the way? If so, why? Were there errors or uncontrolled variables that may have affected the outcome? How did you overcome them? When you repeated the trials and got different numbers, how might you explain the differences? If you could do your project over again, what would you do differently?

Conclusion

Your final conclusion is a simple statement that explains *your* conclusion from *your* experiment. Review your stated hypothesis and simply tell whether or not your hypothesis was *supported* and why. Ex.: My hypothesis that plants grown with fertilizer grow taller than plants grown with no fertilizer was supported because during my experiment, plants with fertilizer were 17 percent taller than those grown without fertilizer. The role of any good scientist is not to prove his or her hypothesis correct. Rather, the role of a scientist is to ask a question, experiment, and report the outcome. The quality of the experiment is NOT related to whether or not the hypothesis was supported. Instead, project quality is related to the procedure followed and the habits of mind used in interpreting the meaning of the results.

Credits

- List the first and last names of the people who provided assistance with your project and tell exactly what they did. Remember that seeking help and advice from others is perfectly acceptable; however, others should not do the work for you. For example, it is perfectly acceptable for someone to proofread your report. It is not acceptable for someone to type the paper for you—that is something you can do yourself. It is perfectly acceptable for someone to drive you to the library to gather resources for your report. It is not acceptable for someone to select and secure the research for you—this is something you should be learning to do on your own (with the assistance of the media specialist if needed). It is my professional opinion that students should be able to slice fruits and vegetables; type papers; operate a washing machine; snap photographs; weigh content; plant seeds; bait fish; read numbers on measuring devices; sand wood; and communicate with companies and/or professional resources through writing, telephone, or email on their own, just to name a few. Empower yourself by owning your project. The feeling is priceless and the rewards are long term. Are you in search of short-term success or long-term excellence?

References

If you followed the directions in your packet, you should just copy and paste the information from Easybib.com into your document. Remember you need a minimum of five *scientific* resources. Among those five consider including something besides internet resources. Personal interviews make great resources as long as the person being interviewed has professional credentials on the topic you are researching. Make sure that you have gathered all the information necessary for your references. Look at the examples below. Make sure that internet resources include the URL or points will be deducted. Make sure you use the word "References" and not "Bibliography" or points will be deducted. Make sure you put references on its own sheet. Look closely at all the components of a proper citation.

Appelhof, Mary. Worms Eat My Garbage. 2. Kalamazoo, MI: Flower Press, 1997.

Bailey, Jill. Worm. Chicago: Heinemann Library, 2006.

Classen, John. "The Effects of Vermicompost on Field Turnips and Rainfall Runoff." Compost Science & Utilization Vol. 15. Issue 1. Winter 2007 34-39. 27 Nov 2008.

ICRISAT. "Vermicomposting: Recycling Wastes into Valuable Organic Fertilizer." Vol. 2. Issue 1. Aug. 2006. 14 Nov 2008 <ejournal.icrisat.org>.
Nelson, Jennifer Schultz. "Vermicomposting." Plant Palette. 05 Feb 2006. University of Illinois. 27 Nov 2008 <http://web.extension.uiuc.edu/macon/palette/060205.html>.

Pagan, Tavia. "Basics of Vermicomposting." The Worm Guide. June 2004. Office of Education and the Environment at California. 27 Nov 2008
<http://www.ciwmb.ca.gov/Publications/Schools/56001007.pdf>.