

Science Fair Project

Green Cove Springs Junior High



Name:

Date:

Science Teacher:

Social Studies Teacher:

Language Arts Teacher:

Math Teacher:

Dear Parents,

During the next few months your child is required to complete a science project which uses the scientific method to solve a real world problem. Science projects are primarily independent study assignments involving experimentation on a topic of individual interest. The educational benefits to the student who completes a project are numerous including developing skills in writing, oral presentation, creative thinking, and problem solving.

In addition to this book; each student will be given instructions during class for the various steps of his/her project. Most assignments for this project will be completed with the student's Science teachers, but others will be completed in Math, Language Arts, and Social Studies. This allows for collaboration between the subject areas and will give the students a comprehensive learning approach to research, writing, investigation, and analysis. Most of the work will be completed at home, and students will receive a timeline noting due dates for each part of the project. Be sure to visit the science fair help site at www.gcsjsciencefair.weebly.com for specific tips, links, handouts, etc.

Your child may need you to monitor his/her progress and provide encouragement. Your support is key to a successful project, but please do not allow your involvement to extend any further in order to assure equity and promote student learning! Also, be aware that a prize-winning project can be completed for under \$10.00.

If you have any questions, do not hesitate to contact us.

Sincerely,

GCSJH Teachers

Please sign the space below in acknowledgment of the above information:

Parent signature: _____ Date: _____

Student signature: _____ Date: _____

Student academic integrity pledge:

I, _____ understand that it is my responsibility to complete a Science Fair project and research paper in the time frame provided by my teachers. I understand that this project is to be completed independently and should express my own original thoughts and ideas. If an idea is used for this project or research paper that is not my own, I will cite the source of that information to avoid plagiarism and give credit where it belongs.

Student signature: _____ Date: _____

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Timeline with Due Dates

Individual teachers will give students exact due dates for each section of the phase they are responsible for. The student must fill in and abide by those dates.

Phase 1: Project Selection-To be completed with science teacher by 9/13/13.

- Project selection with application Due: _____
- Independent, dependent, and control variable identification Due: _____
- Research planning..... Due: _____

Phase 2: Research-To be completed with social studies teacher by 10/4/13

- Research notes 1 Due: _____
- Research notes 2 Due: _____
- Research notes 3 Due: _____
- Research notes 4 Due: _____
- Research notes 5 Due: _____

Phase 3: Research Paper-To be completed with language arts teacher by 11/22/13

- Research paper outline..... Due: _____
- Research paper rough draft Due: _____
- Research paper final draft (3 copies- 1 to each teacher)..... Due: _____

Phase 4: Experimental Design- To be completed with science teacher by 12/7/13 (can be worked on during phase 3)

- Hypothesis Due: _____
- Materials and procedures Due: _____
- Observations and data collection (does not need to be filled in) Due: _____

Phase 5: Graphing Results-To be completed with math teacher by 12/14/13

- Graphing your results (does not need to be filled in)..... Due: _____

Phase 6: Experiment-To be completed at home by 1/13/14

- Perform experiment and collect/enter data into tables and graphs..... Due: _____
- Journal (complete while performing project)..... Due: _____
- Conclusion Due: _____
- Abstract..... Due: _____
- Display board (Advanced only) Due: _____
- Notebook (Advanced only)..... Due: _____

Phase 7: Presentations-To be completed in class by 1/20/14

Science Project Selection with Application

List 3 different projects that you would be interested in using for your science fair project. Remember to choose projects that you find interesting and that your parents also agree with.

- **Briefly describe each project** so that your teacher can understand what it entails.
- You must also include **3** ways this project can impact and affect society, consumers, students, science, etc. If this project does not have **applications** rethink it or find another one.
- **Rate each of the 3 projects** on a scale of 1-3 one being the project you like the most and 3 being the project you like the least.

1. Project Title: _____ Rank: _____

Description: _____

a. _____

b. _____

c. _____

2. Project Title: _____ Rank: _____

Description: _____

a. _____

b. _____

c. _____

3. Project Title: _____ Rank: _____

Description: _____

a. _____

b. _____

c. _____

Research Paper Planning

Use the space below to determine what areas you should be researching to write each section of your paper. Think about what books, magazines, or websites you want to use to find information.

What is the history behind your project (famous inventors, dates of discovery, controversial issues, past disasters, etc.)?

- _____
- _____
- _____
- _____
- _____

What is the science behind your project (laws, theories, equations, other experiments, etc.)?

- _____
- _____
- _____
- _____
- _____

What is the importance of your project (solving any issues, saving lives/ecosystems, bringing awareness to an important issue)?

- _____
- _____
- _____
- _____
- _____

Research Paper Notes

Research notes # 1

Please fill out as much of the following information as possible; some resources will not have information for all fields. This information will be used for your works cited page.

These notes are from, Circle One: A Book A Magazine A Website A Newspaper

Title of book/magazine/website: _____

Article Title (for Website or Magazine): _____

Author(s) Full Name: _____

Copyright Date OR if Website, date you used Website _____

Publisher of book OR Sponsor of web site: _____

Place of Publication OR full Website address: _____

What important facts can I learn from this document? (These notes will be used to write your research paper.)

1.1- _____

1.2- _____

1.3- _____

1.4- Use for extra notes if needed:

----- Below information is to be used for Social Studies DBQ practice -----

Overall what is the main idea of this document? _____

How does this document help answer the hypothesis/thesis of the paper?

Research Paper Notes

Research notes # 2

Please fill out as much of the following information as possible; some resources will not have information for all fields. This information will be used for your works cited page.

These notes are from, Circle One: A Book A Magazine A Website A Newspaper

Title of book/magazine/website: _____

Article Title (for Website or Magazine): _____

Author(s) Full Name: _____

Copyright Date OR if Website, date you used Website _____

Publisher of book OR Sponsor of web site: _____

Place of Publication OR full Website address: _____

What important facts can I learn from this document? (These notes will be used to write your research paper.)

2.1- _____

2.2- _____

2.3- _____

2.4- Use for extra notes if needed:

----- Below information is to be used for Social Studies DBQ practice -----

Overall what is the main idea of this document? _____

How does this document help answer the hypothesis/thesis of the paper?

Approved by S.S. Teacher

Approved by Science Teacher

Research Paper Notes

Research notes # 3

Please fill out as much of the following information as possible; some resources will not have information for all fields. This information will be used for your works cited page.

These notes are from, Circle One: **A Book** **A Magazine** **A Website** **A Newspaper**

Title of book/magazine/website: _____

Article Title (for Website or Magazine): _____

Author(s) Full Name: _____

Copyright Date OR if Website, date you used Website _____

Publisher of book OR Sponsor of web site: _____

Place of Publication OR full Website address: _____

What important facts can I learn from this document? (These notes will be used to write your research paper.)

3.1- _____

3.2- _____

3.3- _____

3.4- Use for extra notes if needed:

----- Below information is to be used for Social Studies DBQ practice -----

Overall what is the main idea of this document? _____

How does this document help answer the hypothesis/thesis of the paper?

Approved by S.S. Teacher

Approved by Science Teacher

Research Paper Notes

Research notes # 4

Please fill out as much of the following information as possible; some resources will not have information for all fields. This information will be used for your works cited page.

These notes are from, Circle One: A Book A Magazine A Website A Newspaper

Title of book/magazine/website: _____

Article Title (for Website or Magazine): _____

Author(s) Full Name: _____

Copyright Date OR if Website, date you used Website _____

Publisher of book OR Sponsor of web site: _____

Place of Publication OR full Website address: _____

What important facts can I learn from this document? (These notes will be used to write your research paper.)

4.1- _____

4.2- _____

4.3- _____

4.4- Use for extra notes if needed:

----- Below information is to be used for Social Studies DBQ practice -----

Overall what is the main idea of this document? _____

How does this document help answer the hypothesis/thesis of the paper?

Approved by S.S. Teacher

Approved by Science Teacher

Research Paper Notes

Research notes # 5

Please fill out as much of the following information as possible; some resources will not have information for all fields. This information will be used for your works cited page.

These notes are from, Circle One: **A Book** **A Magazine** **A Website** **A Newspaper**

Title of book/magazine/website: _____

Article Title (for Website or Magazine): _____

Author(s) Full Name: _____

Copyright Date OR if Website, date you used Website _____

Publisher of book OR Sponsor of web site: _____

Place of Publication OR full Website address: _____

What important facts can I learn from this document? (These notes will be used to write your research paper.)

5.1- _____

5.2- _____

5.3- _____

5.4- Use for extra notes if needed:

----- Below information is to be used for Social Studies DBQ practice -----

Overall what is the main idea of this document? _____

How does this document help answer the hypothesis/thesis of the paper?

Approved by S.S. Teacher

Approved by Science Teacher

Research Paper Outline

Use this space and the guidelines on the next page to help organize your writing. For each body paragraph, you must have at least 3 research-based facts to support your thesis/hypothesis. Do not forget to write the research citation number in the parentheses.

Introduction paragraph: (Must include Thesis/Hypothesis statement) _____



Body 1: History

- _____

_____ ()
- _____

_____ ()
- _____

_____ ()
- _____

_____ ()
- _____

_____ ()

Body 2: The science behind your project

- _____

_____ ()
- _____

_____ ()
- _____

_____ ()
- _____

_____ ()
- _____

_____ ()

Body 3: application of the project

- _____

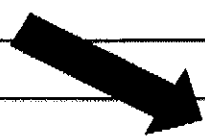
_____ ()
- _____

_____ ()
- _____

_____ ()
- _____

_____ ()
- _____

_____ ()



Conclusion paragraph: _____

Research Paper Guidelines

Introduction:

- This should be a paragraph that introduces the reader to your topic.
- An interesting fact can be used to start this introduction, such as, “Did you know...”
 - Make sure your fact is still relevant to your paper, do not say something like “did you know that there are many different species of dogs?” and your entire paper is about water balloons.
- Be sure not to state too much information in the introduction. Leave your facts for your body paragraphs.
- The introduction can be vague as long as you develop your ideas in the body paragraphs.
- It must include your hypothesis/thesis statement.

Body: You must have AT LEAST 3 body paragraphs.

- Introduce the main point or idea of your body paragraph.
- Support that main idea with evidence or facts that you have found in your research.
- Everything that you did not already know from personal experience before writing this paper should be cited with the source number from your research.
- Use transition sentences to tie each of your facts/evidence together. **DO NOT JUST STATE FACT AFTER FACT!!!**

Conclusion:

- Your conclusion should briefly (as in one sentence each) summarize the main point of your paper and each of your body paragraphs.
- End with a statement that will make your reader either continue to think about your topic or make them feel accomplished.
 - Example: With this new information, maybe you will be able to make a healthier choice next time you are selecting a shoe style.

Works Cited:

- It is expected that you use EasyBib to generate your works cited page (<http://www.easybib.com/>).
- There is a step by step guide to using EasyBib on the Green Cove Springs Junior High Science Fair website if you need help!
- List your citations in alphabetical order.
- You must have at least 5 citations.
- One citation must be ISEF Rules: <http://www.scisvc.org/isef/>

All final papers will be typed:

- ✓ It is expected that all students visit the Green Cove Springs Junior High Science Fair website for the final research paper formatting template.
- ✓ The length of the paper should include:
 - 1 title page
 - 2 pages for research paper (minimum).
 - 1 works cited page
- ✓ **NEVER** use the words **I** or **me** in your paper.
- ✓ **Only** use the metric system when writing about anything that includes measurements.

Experimental Design

Name: _____

Problem:

Independent Variable (What are you testing/changing in the experiment?) :

Dependent Variable (What are you measuring in the experiment?) :

Controlled Variables (What are you controlling in the experiment?) :

Hypothesis: If ____ (Independent: what you are testing) ____, then ____ (Dependent: this will occur) ____ because ____ (Research: give a reason behind your thinking) ____.

- Write your hypothesis in If..., then... because... format.
- No 1st person

Experimental Design

Materials (list all materials used in the experiment):

-
-
-
-
-
-
-
-
-
-
-
-

Procedures (list all procedures on your experiment in order, more steps may be added if needed):

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____

Observations or Data Collection Table

Use this space to create a data table that will allow you to accurately record the observations you make during your experiment.

Graphing your Results

Bar Graph: My data compares and contrasts two or more items.

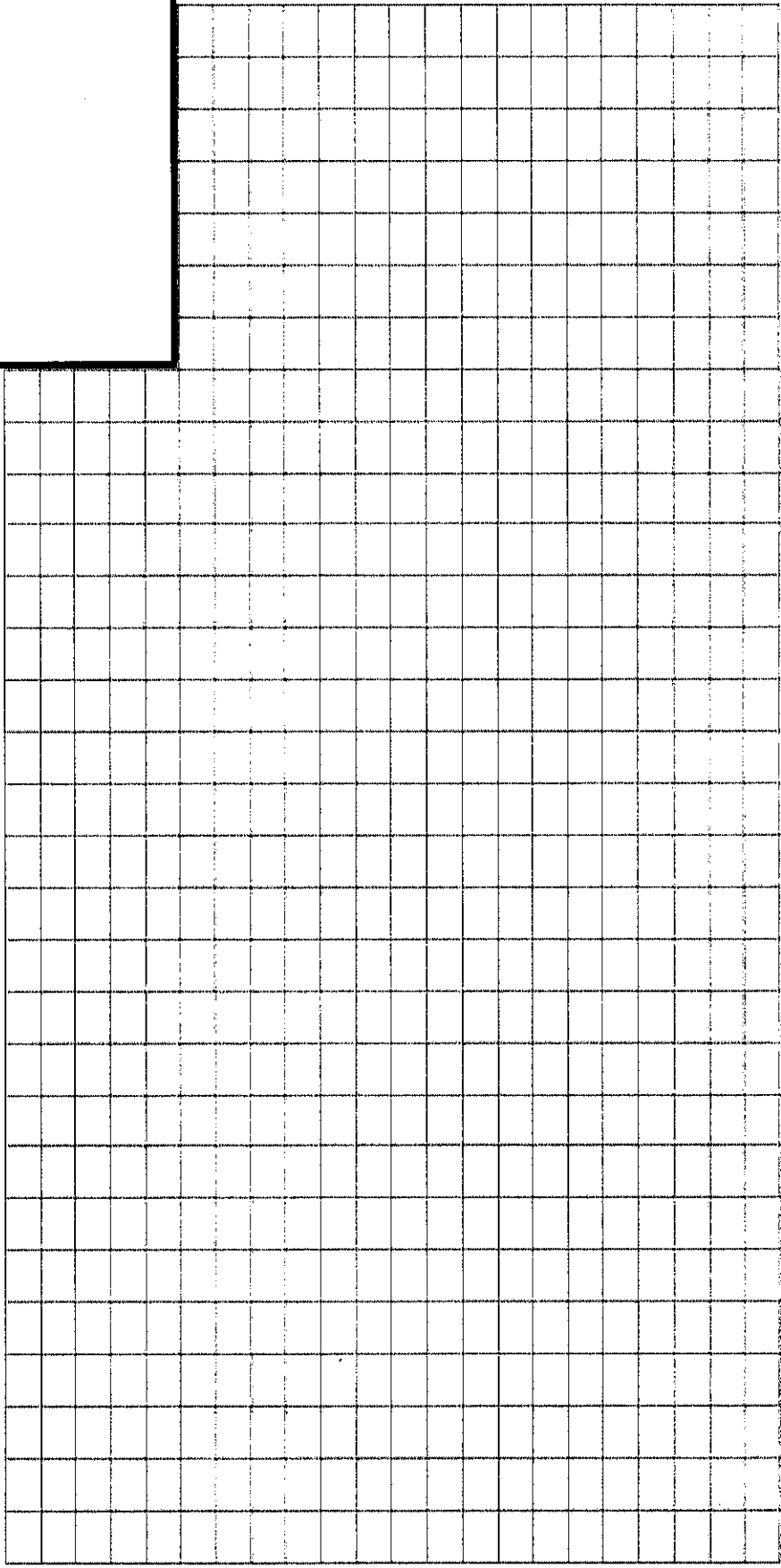
Line Graph: My data shows changes over time/distance/mass/etc.

Pie Graph: My data shows percentages of a whole.

Descriptive title of graph: _____

Y-axis label: _____

Key if needed:



X-axis label: _____

Approved by Math Teacher

Approved by Science Teacher

Conclusion

Your conclusion should summarize how your results support and/or contradict your original hypothesis.

1. Summarize your results in 1-2 sentences.

2. State whether your results support or contradict your hypothesis.

3. Summarize your experimental procedure making comments about its success and effectiveness.

4. Suggest changes in the experimental procedure (or design) and/ or possibilities for further study (Examples: use different materials, switch steps around, allow more time, control more variables, etc.).

Advanced students: You will combine these four points into one conclusion paragraph. This should be no longer than ONE paragraph and will be on your board and in your notebook.

Abstract

This is a paragraph (**7-10 sentences long**) that will grab the judges and public's attention. **This is NOT a full report about EVERYTHING that happened in your project, just a summary of the whole thing. Your abstract should include 1-2 sentences summarizing each of the topics listed below.**

1. Introduction: Motivate the reader to be interested in your project. Explain why you did this project (what was its purpose) and what importance does your project have to them or society (application).

2. Hypothesis: State your hypothesis (IF...,THEN... BECAUSE...).

3. Procedures: How did you do this experiment? Do not go into full detail; just explain what is important for the reader to know in order to understand what you did and how you did it.

4. Results: What did you find out? Be specific with your results, use real data and numbers and do not use vague terms like most, some, a few, and a lot.

5. Conclusions: Was your project successful and did everything go according to plan? What would you have changed or would you do everything the same?

Advanced students: Combine these 5 points into 1 paragraph. You will need this abstract printed out on your board and in your notebook.

Research and Graph Rubrics

Grading Rubric for Research Portion of Science Fair Project

Instructions:

1. Use 1,2,3,4 or 5 for item I. below to indicate if five or less, Research notes completed.
2. For all the other items II to IV, use the following scale:

	0= Did not complete, unusable	1= Not complete, or poor quality of research, not really connected to thesis	2= Complete 5 but quality and variety not seen, may have portions not connected with thesis	3= Complete 5 with mostly good variety/quality, some may not be connected with thesis	4= Complete with good quality/variety and connected with thesis
I. Research notes completed	1/5	2/5	3/5	4/5	5/5
II. Variety of sources used and on subject/thesis					
III. Information pulled is related to the subject/thesis					
IV. Quality of source information on thesis/subject					
Sub Total					

Comments: _____ Grade: _____ /17

Science Fair Graph Rubric

This is for your completed graph in your science fair project. Each section has its own max points that can be earned for a total of 100 points.

1. Correct Display – 30 points

The student chose the correct graph based on the purpose and results of the data.

2. Number Intervals Spaced Appropriately – 20 points

The numbers are spaced correctly and there are no weird gaps or skips in the numbering.

3. Labeled Correctly – 15 points

All the parts of the graph are labeled correctly and it has an appropriate title.

4. Key – 15 points

The key is displayed, easy to read and understand, and all parts are explained.

5. Neat and Easy to Read – 10 points

The entire graph is neat, easy to read and understand.

6. Appealing/Attention Grabbing – 10 points

The graph is interesting, attractive, and attention grabbing.

Total Points

Research Paper Rubric

CATEGORY	Unacceptable (Below Standards)	Acceptable (Meets Standards)	Good (Occasionally Exceeds)	Excellent (Exceeds Standards)	SCORE
Introduction	Does not adequately convey topic. Does not describe subtopics to be reviewed. Lacks adequate theses statement.	Conveys topic, but not key question(s). Describes subtopics to be reviewed. General theses statement.	Conveys topic and key question(s). Clearly delineates subtopics to be reviewed. General thesis statement.	Strong introduction of topic's key question(s), terms. Clearly delineates subtopics to be reviewed. Specific thesis statement.	15 points _____/ 15
Sequencing	Little evidence material is logically organized into topic, subtopics or related to topic. Many transitions are unclear or nonexistent.	Most material clearly related to subtopic, main topic. Material may not be organized within subtopics. Attempts to provide variety of transitions	All material clearly related to subtopic, main topic and logically organized within subtopics. Clear, varied transitions linking subtopics, and main topic.	All material clearly related to subtopic, main topic. Strong organization and integration of material within subtopics. Strong transitions linking subtopics, and main topic.	15 points _____/ 15
Support	Few sources supporting thesis. Sources insignificant or unsubstantiated.	Sources generally acceptable but not peer-reviewed research (evidence) based.	Sources well selected to support thesis with some research in support of thesis.	Strong peer reviewed research based support for thesis.	20 points _____/ 20
Conclusion	Does not summarize evidence with respect to thesis statement. Does not discuss the impact of researched material on topic. Strong review of key conclusions.	Review of key conclusions. Some integration with thesis statement. Discusses impact of researched material on topic.	Strong integration with thesis statement. Discusses impact of researched material on topic.	Strong review of key conclusions. Strong integration with thesis statement. Insightful discussion of impact of the researched material on topic.	15 points _____/ 15
Grammar & Mechanics	Grammatical errors or spelling & punctuation substantially detract from the paper.	Very few grammatical, spelling or punctuation errors interfere with reading the paper.	Grammatical errors or spelling & punctuation are rare and do not detract from the paper.	The paper is free of grammatical errors and spelling & punctuation.	20 points _____/ 20
References	Reference and citation errors detract significantly from paper.	Two references or citations missing or incorrectly written.	One reference or citations missing or incorrectly written.	All references and citations are correctly written and present.	15 points _____/ 15

(The Psychology Department at San José State University is acknowledged for the basic structure of this form.)

Total Points: _____ / 100

Presentation Grading Rubrics

Display board grading rubric: This is for advanced students only. Board will be graded on both content and neatness of display.

<p style="text-align: center;"><u>Problem</u></p> <p>.....</p> <p style="text-align: center;">____ / 5 pts</p> <p style="text-align: center;"><u>Hypothesis</u></p> <p>.....</p> <p style="text-align: center;">____ / 10 pts</p> <p style="text-align: center;"><u>Abstract</u></p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p style="text-align: center;">____ / 20 pts</p>	<p style="text-align: center;"><u>Title of your project</u></p> <p style="text-align: center;">____ / 5 pts</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; text-align: center; border: none;"> <p><u>Procedures</u></p> <p>1.. 2.. 3...</p> <p style="text-align: center;">____ / 5 pts</p> </td> <td style="width: 50%; text-align: center; border: none;"> <p><u>Materials</u></p> <p>1.. 2.. 3...</p> <p style="text-align: center;">____ / 5 pts</p> </td> </tr> <tr> <td style="width: 50%; text-align: center; border: none;"> <p><u>Variables</u></p> <p>(Independent and dependent)</p> <p>.....</p> <p>.....</p> <p style="text-align: center;">____ / 5 pts</p> </td> <td style="width: 50%; text-align: center; border: none;"> <p><u>Controlled variables</u></p> <p>.....</p> <p>.....</p> <p style="text-align: center;">____ / 5 pts</p> </td> </tr> </table> <p style="text-align: center;"><u>Data</u></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; text-align: center; border: none;"> <p>Pictures</p> <p>Color: ____</p> <p style="text-align: center;">____ / 5pts</p> </td> <td style="width: 50%; text-align: center; border: none;"> <p>Graph(s)</p> <p>Color: ____</p> <p>Computer Gen. ____</p> <p style="text-align: center;">____ / 5 pts</p> </td> </tr> </table>	<p><u>Procedures</u></p> <p>1.. 2.. 3...</p> <p style="text-align: center;">____ / 5 pts</p>	<p><u>Materials</u></p> <p>1.. 2.. 3...</p> <p style="text-align: center;">____ / 5 pts</p>	<p><u>Variables</u></p> <p>(Independent and dependent)</p> <p>.....</p> <p>.....</p> <p style="text-align: center;">____ / 5 pts</p>	<p><u>Controlled variables</u></p> <p>.....</p> <p>.....</p> <p style="text-align: center;">____ / 5 pts</p>	<p>Pictures</p> <p>Color: ____</p> <p style="text-align: center;">____ / 5pts</p>	<p>Graph(s)</p> <p>Color: ____</p> <p>Computer Gen. ____</p> <p style="text-align: center;">____ / 5 pts</p>	<p style="text-align: center;"><u>Results</u></p> <p>.....</p> <p>.....</p> <p style="text-align: center;">____ / 10 pts</p> <p style="text-align: center;"><u>Conclusion</u></p> <p>.....</p> <p>.....</p> <p>.....</p> <p style="text-align: center;">____ / 10 pts</p> <p style="text-align: center;"><u>Application</u></p> <p>.....</p> <p style="text-align: center;">____ / 10 pts</p>
<p><u>Procedures</u></p> <p>1.. 2.. 3...</p> <p style="text-align: center;">____ / 5 pts</p>	<p><u>Materials</u></p> <p>1.. 2.. 3...</p> <p style="text-align: center;">____ / 5 pts</p>							
<p><u>Variables</u></p> <p>(Independent and dependent)</p> <p>.....</p> <p>.....</p> <p style="text-align: center;">____ / 5 pts</p>	<p><u>Controlled variables</u></p> <p>.....</p> <p>.....</p> <p style="text-align: center;">____ / 5 pts</p>							
<p>Pictures</p> <p>Color: ____</p> <p style="text-align: center;">____ / 5pts</p>	<p>Graph(s)</p> <p>Color: ____</p> <p>Computer Gen. ____</p> <p style="text-align: center;">____ / 5 pts</p>							
<p>Comments: _____</p> <p>Board Total: ____ / 100</p>								

Presentation grading rubric: All students will present their projects to their classmates. Presentations may strongly influence students selected to go to the School Science Fair.

<p>1. Spoke Correctly :</p> <p>2. Knowledge of information:</p> <p>3. Able to answer questions:</p> <p>4. Mentioned important data:</p> <p>5. Explained information well:</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	<p>2</p> <p>2</p> <p>2</p> <p>2</p> <p>2</p>	<p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p>	<p>4</p> <p>4</p> <p>4</p> <p>4</p> <p>4</p>	<p>5</p> <p>5</p> <p>5</p> <p>5</p> <p>5</p>
<p>Total: ____ /25</p>					
<p>1-very poor 2-poor 3-average 4- done well 5- excellent</p>					
<p>Comments: _____</p> <p>_____</p> <p>_____</p> <p>_____</p>					

Notebook Grading Rubric

Science Fair Notebook: Must only be completed if you are an advanced science student.

Earned	Points	Contents	Comments
	5	Title Page	
	5	Abstract	
	5	Table of Contents	
		Divider 1: "Experimental Design"	
	10	Problem, Variables, Hypothesis	
	10	Materials and Equipment	
	10	Design and Procedures	
		Divider "Results"	
	10	Observations and Data/Pictures	
	10	Results and Graphs	
	10	Conclusion Statement	
		Divider "Background"	
	10	Research Paper (clean copy) with attached Works Cited	
		Divider "Appendix"	
	5	Project Approval Form	
		MSDS Sheets - only if needed	
		Informed consent forms - only if needed	
		Any extra paperwork	
	10	Separate but with Notebook: Science Fair Book with completed Journal	
	100	Total Notebook Grade	

Teacher Comments: _____

