

# **Science Fair Project A Handbook for Students and Parents**

**Everglades K-8 Center  
Miami-Dade County Public Schools**

**8375 SW 16 Street  
Miami, Florida 33155**

**Developed and prepared by  
The Science Fair Committee Members  
2009-2010**

Dear Parents,

The Everglades K-8 Center Science Fair will take place Wednesday, November 18, 2009. This event offers children opportunities to apply the scientific method learned in school and to explore science beyond the classroom.

Attached you will find a packet with guidelines and suggestions to help your child prepare for the Science Fair, including the dates in which each portion of the project and the final product are due. Please review these guidelines and suggestions with your child so that you are able to offer the support necessary for your child to succeed. No late assignments will be accepted.

This event will develop as follows:

- Students will receive one grade for each assignment of the project. The entire Science Fair project will total 10 grades. These grades will constitute the final grade students will receive in Science for the grading period.
- All students will receive recognition for participation in this event.
- A 3-point rubric will be used to assess the project.
- Using the rubric, three projects will be selected from each classroom. These projects will participate in the final judging for a first, second, and third place per grade level.
- All projects will be displayed Wednesday, November 18, 2009 as follows  
Participants - student's classroom, 2:00 p.m. - 3:00 p.m.  
Finalists - k-5<sup>th</sup> students at: Media Center, 2:00 p.m. 3:00 p.m.  
Finalists - 6<sup>th</sup> / 7<sup>th</sup> / 8<sup>th</sup> students. Room # 2:00- 3:00 pm

We thank you in advance for your participation and support to make our Science Fair a memorable educational experience for your child.

Sincerely,

Doylene N. Tarver, Ed.D.  
Principal

**Please complete and return the Parent Notification and Acknowledgement section below, to your child's teacher, on or before September 4, 2009. Thank you.**

\*\*\*\*\*

## **Parent Notification and Acknowledgment Science Fair Project**

I have reviewed the Science Fair handbook with my child and I am aware that the Science Fair Project is a **required assignment**. I understand that grades will be issued for the project and that these grades will count toward the science grade for the first grading period.

Name of Student \_\_\_\_\_ Date \_\_\_\_\_

Parent's Signature \_\_\_\_\_ Date \_\_\_\_\_

**Everglades K-8 Center**  
**Miami-Dade County Public Schools**  
**Science Fair**  
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# Everglades K-8 Center Science Fair

Schedule of Assignments for Upper Academy  
Grades 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> (Individual Student Project)  
K, 1<sup>ST</sup> and 2<sup>nd</sup> (One Classroom Project)

Week of September 1, through 9, 2009 -----Science Fair Packet will be available on line.  
Wednesday, September 2, 2009.....Science Fair Parent Orientation from 6 p.m. - 7 p.m.  
Cafeteria (Upper Academy)

September 3 & 4, 2009-----Parent Notification and Acknowledgment section due.

Thursday, September 10, 2009, (A Day)

Friday, September 11, 2009, (B Day).....Assignments # 1 Problem Statement and Title

\* Now start researching your Problem Statement to gather Background Information and prepare an educated guess (your Hypothesis). Due to teacher for approval prior to this date.

Wednesday, September 16, 2009 (A Day)

Friday, September 18, 2009 (B Day).....Assignment # 2 is due. This includes the Hypothesis and the list of materials.

Thursday September 24, 2009 (B Day)

Friday September 25, 2009 (A Day) .....Assignment # 3 is due. This includes the Procedures & Variables.

Thursday October 1, 2009 (B Day)

Friday October 2, 2009 (A Day).....Assignment # 4 is due. This includes the Background Information and Bibliography.

Thursday, October 8, 2009 (A Day)

Friday, October 9, 2009 (B Day).....Assignment # 5 is due. This includes the data (Minimum of 3 different forms of data) Results, Conclusions, and Applications.

Thursday October 15, 2009, (B Day)

Friday, October 16, 2009 (A Day).....Assignment # 6 is due. MUST BE TYPED

This includes the abstract of the project. The purpose of the project along with the hypothesis is included in the first paragraph of the abstract. A summary of the procedures are included in the second paragraph. The results and conclusions are included in the third paragraph. All paragraphs must be written in past tense.

Monday, October 22, 2009 (B Day)

Tuesday, October 23, 2009 (A Day).....Assignment # 7 is due. MUST BE TYPED.

The report should include a Title page, the Abstract, the Background Information, and the Bibliography. Must be written in past tense and include a diagram showing how the display board will be organized.

Tuesday, November 3, 2009 (A Day)

Wednesday, November 4, 2009 (B Day).....Assignment # 8 & 9 is due. The display board should be neat and contain no spelling errors. See the handbook for the diagram. Creativity is important and will be graded. The Abstract and Bibliography must be in the lower left -hand corner of the display board.

Monday, November 9, 2009 (A Day) through

Tuesday, November 17, 2009 (B Day).....Assignment # 10 is due. This includes an individual oral presentation about the Science Fair project.

Wednesday, November 18, 2009 (A Day).....Science Fair Projects will be available for viewing from 2:00 - 3:00 p.m. in the media center for grades K-5<sup>th</sup> and in room 131 for the middle school grades 6-8<sup>th</sup>.

<b>Science Fair Calendar of Events</b>		<b>September 2009</b>		
<i>MONDAY</i>	<i>TUESDAY</i>	<i>WEDNESDAY</i>	<i>THURSDAY</i>	<i>FRIDAY</i>
	<i>1</i> <i>Science Fair Handbook Available on line</i>	<i>2</i> <i>Science Fair Parent Orientation Meeting 6:00 -7:00 PM</i>	<i>3</i> <i>Parent notification and Acknowledgment Section Due A Day</i>	<i>4</i> <i>Parent notification and Acknowledgment Section Due B Day</i>
<i>7</i> <i>Labor Day</i>	<i>8</i>	<i>9</i>	<i>10</i> <i>Assignment # 1 Problem Statement and Title due to science teacher for approval. (A Day) One grade</i>	<i>11</i> <i>Assignment# 1 Problem Statement and Title due to science teacher for approval. (B Day) One grade</i>
<i>14</i>	<i>15</i>	<i>16</i> <i>Assignment # 2 Due (A Day) Hypothesis Material 'list One grade</i>	<i>17</i>	<i>18</i> <i>Assignment # 2 Due (B Day) Hypothesis Material 'list One grade</i>
<i>21</i>	<i>22</i>	<i>23</i>	<i>24</i> <i>Assignment # 3 Due (B Day) Procedures and three Variables One grade</i>	<i>25</i> <i>Assignment # 3 Due (A Day) Procedures And three Variables One grade</i>
<i>28</i> <i>Teacher Planning Day</i>	<i>29</i>	<i>30</i>		

# Science Fair Calendar of Events

October 2009

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
			<b>1</b> <b>Assignment # 4</b> <b>Due (B Day)</b> <b>Background Info</b> <b>Bibliography</b> <b>One grade</b>	<b>2</b> <b>Assignment # 4</b> <b>Due (A Day)</b> <b>Background Info</b> <b>Bibliography</b> <b>One grade</b>
<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b> <b>Assignment # 5</b> <b>Due (A Day)</b> <b>(3 forms of data)</b> <b>Results, conclusions,</b> <b>and Applications</b> <b>One grade</b>	<b>9</b> <b>Assignment # 5</b> <b>Due (B Day)</b> <b>(3 forms of data)</b> <b>Results conclusions</b> <b>and Applications.</b> <b>One grade</b>
<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b> <b>Assignment # 6</b> <b>Due (B Day)</b> <b>Abstract including</b> <b>three paragraphs</b> <b>One grade</b>	<b>16</b> <b>Assignment # 6</b> <b>Due (A Day)</b> <b>Abstract including</b> <b>three paragraphs</b> <b>One grade</b>
<b>19</b> <b>Teacher</b> <b>Planning Day</b>	<b>20</b>	<b>21</b>	<b>22</b> <b>Assignment # 7</b> <b>Due (B Day )</b> <b>Complete written</b> <b>Report.</b> <b>One grade</b>	<b>23</b> <b>Assignment # 7</b> <b>Due (A Day )</b> <b>Complete written</b> <b>Report.</b> <b>One grade</b>
<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b> <b>Teacher</b> <b>Planning Day</b>

# Science Fair Calendar of Events

November 2009

<i>MONDAY</i>	<i>TUESDAY</i>	<i>WEDNESDAY</i>	<i>THURSDAY</i>	<i>FRIDAY</i>
2	3 <i>Assignment # 8 &amp; 9 Due (A Day) Neatness &amp; Creativity of the Science Board. Two Grades</i>	4 <i>Assignment # 8 &amp; 9 Due (B Day) Neatness &amp; Creativity of the Science Boar Two Grades</i>	5	6
9 <i>Assignments # 10 Due (A Day ) Oral Presentations One grade</i>	10 <i>Assignment # 10 Due (B Day ) Oral Presentations One grade</i>	11 <i>Veteran's Day</i>	12 <i>Assignment # 10 Due (A Day ) Oral Presentations One grade</i>	13 <i>Assignment # 10 Due (B Day ) Oral Presentations One grade</i>
16 <i>Assignment # 10 Due (A Day ) Oral Presentations One grade</i>	17 <i>Assignment # 10 Due (B Day ) Oral Presentations One grade</i>	18 <i>Science Fair Judging (9:00a.m-12:00p.m.) ( B Day )</i>	19 <b>Early Release Day</b>	20
23	24	25	26 <b>Thanksgiving Day</b>	27 <b>Recess</b>
28	29	30		

**Have a Great  
Science Experiment!**

**Everglades K-8 Center**  
Miami-Dade County Public Schools

**Science Fair**  
*Project Guidelines*

**Science Fair Project**

*All Science Fair projects must include the following:*

- *Title*
- *Problem statement*
- *Background information*
- *Hypothesis*
- *Materials*
- *Procedures*
- *Variable (manipulated, responding, held constant) control if applicable*
- *Data - 3 types minimum (include charts, graphs, pictures, qualitative/quantitative observations, surveys, diagrams, etc.)*
- *Results*
- *Conclusions*
- *Application - real world extensions; further investigations*
- *Bibliography (minimum of 3-5 resources; all resources can not be from the Internet)*
- *Abstract - including the summary or purpose, brief and summarized procedures, results, and conclusions*
- *Data log - a dated log of what was done on a daily basis towards finding the results of the project*
- *Creativity - projects should be original, innovative, and creative!*

**The following pages contain descriptions** of each of the above mentioned components with examples that will help you develop your project.

## □ Title

**A project needs a title. It lets people know what you have worked on. The title should be in the form of a statement. If you use the problem statement as your title, it should be in the form of a question. Consider the following:**

**Poor title:** Soap Powder (does not say enough information)

**Better general title:** Cleaning Power of Soap Powder

**Problem statement as title:** Which Soap Powder is the Best Cleaner of Catsup Stains?

These are some tips to help you select a title.

- Read in science books, magazines, newspapers for title ideas
- Talk to your teacher, family, and friends
- Select a topic that interests you
- Follow your curiosity; select a topic that you do not know anything about
- Select a topic that you know a little about but you want to investigate further to see what will happen if...
- See a list of possible project ideas included

## □ Problem Statement

**The problem statement is always written in the form of a question, even if it is used as the title. The question tells people what you are trying to find out.**

**Poor problem statement:** How does Soap Work?

**Better problem statement:**

**Which Soap Powder Works Best in Removing Catsup Stains?**

## □ Hypothesis

**A hypothesis states what you think is going to happen when you investigate a question. Remember to include the words **If and Then** to describe the manipulated, and the responding variables. Be sure to make a numerical prediction of the expected result (ex: 2 out of 3, 67%). Use third person when you write your hypothesis. (No pronouns) **Here is an example:****

**Question:** Which brand of paper towels is the most absorbent?

**Hypothesis:** **If Viva, Bounty, and Suave paper towels are tested for their absorbency, then Viva paper towels will be 20 % more absorbent because Viva paper towels are thicker.**

## □ **Materials**

*List all materials used in your investigation. Include what, how much, and what kinds of materials you used. Keep in mind quantities are important. Be sure to measure all your materials using metric units. Do not forget to write your numbers in words.*

*Example of a “good listing”:*

- . 3, 15x15 cm sq. each of Brawney, Gala, Scott, generic paper towels*
- . 250 ml graduated beaker*
- . 750 ml water 20<sup>o</sup> C*
- . 1, 20x20 cm sq. cake pan*
- . Celsius thermometer*
- . clock with a second hand*

## □ **Procedures**

*Your step-by-step directions are like a recipe. Anyone who reads them will be able to duplicate your investigation and get the same results. Remember the first word of each step must be written as a **verb**.*

*Example:*

*Step-by-Step Directions:*

- 1. Cut 3, 15x15 cm sq. from each brand of paper towel*
- 2. Label each cut piece with brand name*
- 3. Pour 50 ml of 20<sup>o</sup> C water into 20x20 cm sq pan*
- 4. Place 1 square of generic brand paper towel into water and pan*
- 5. Leave for 30 seconds*
- 6. Remove paper towel*
- 7. Measure water remaining in pan and record*
- 8. Dry the cake pan*
- 9. Repeat steps 4-8 for each brand of paper towel*
- 10. Repeat entire process twice more for each brand of paper towel*

## □ **Variables**

*There are three types of variables. Hay tres tipos de Variables*

- 1. Manipulated Variable ( Variable que se cambia a proposito)  
What you change on purpose in an investigation.*

2. **Responding Variable . The responding variable is what changes by itself.**  
*Variable que responde Es la que cambia por si misma*
3. **Variables held constant (Variable Constante)**  
*Everything else in your investigation must be held constant (kept the same)*  
*Todo relacionado con la investigacion se mantiene sin ningun cambio.*

*Example of variables: Ejemplos de variables.*

**Question:** *Do all brands of paper towels absorb the same amount of water?*

**Manipulated variable:** *brand of paper towel (what you changed on purpose)*

**Responding variable:** *amount of water that is adsorbed by each towel*

**Kept constant size of towel, temp. of water, amount of water etc.**

## □ **Background Information**

*Once you have chosen your science problem it is important to research the written materials available on your subject. By finding out as much background information as you can about the subject, you will gain better understanding of your problem. This will be valuable to you as you plan your project.*

**The following are guidelines for conducting a research:**

1. **Read books and articles on your subject. Make sure this information is up-to-date (usually not older than five to ten years, depending on the subject.)**
2. **Interview and talk with people who are knowledgeable about your subject.**
3. **After reading books or interviewing people about your topic, write a paragraph that includes all the information that you gathered.**

**The background information is for the report only. It does not go on the project board.**

## □ **Bibliography**

*Make a list of all the books, magazines, interviews, or other sources that were used.*

**General Form and Examples:**

**BOOK** Author's last name, first name, and initial. Title of book, city of publication: publisher, year, pages used  
Cured, Mary B., *Medicinal Plants*, New York: Moorehouse and Moorehouse Publications, 199, pp. 84-86

**MAGAZINE** Title of article, title of magazine, volume and number, city of publication: publisher, month, year, pages or article used.  
"Problem-Solving Processes," *The Science Teacher*, Volume 6, Number 4, Alexandria: National Science Teachers Association, April 1999, pp 16-19

**INTERVIEW** Interviewed person's last name, first name, initial, title, type of interview, month date, year of interview, department of one interviewed, institution where the interviewed works, phone number.  
Brown, Joseph T. Ph.D., telephone interview, September 17, 1999, Department of Botany, Somewhere University, (555) 444-3210

**ENCYCLOPEDIA**  
Title of article, title of encyclopedia, place of publication, the publisher, date of publication, volume number, pages used.  
"Seeds", *World Book*, New York: World Publishers, 1999, Volume S, pages 1120-1121.

**WORLD WIDE WEB**  
Classical Muty: "The Ancient Sources." Dept. of Greek and Roman Studies, U of Victoria. 28 Mar. 1998  
<<http://www.wesleyan.edu/cbays/homepage/tt1m>>

□ **Data/Log**  
**Data refers to information gathered during your investigation.**  
**Writing in a spiral notebook is the most convenient way to keep a log.**

**Your log should include:**

- 1. A list of all the materials you use**
- 2. Notes on all the preparation you made prior to starting your investigation**

3. **Information about the resources you use (books, people, libraries, museums, universities, etc.)**
4. **Detailed day-by day notes on the progress of your project**
  - a. **What you are actually doing**
  - b. **Problems you have with your investigation**
  - c. **Things you would change if you were doing this investigation again**
5. **Any drawings that you feel might help explain your work**
6. **Data that you gather from your investigation (notes, tables charts, graphs)**

## □ **Quantification of Data**

**The data collected during the course of your investigation needs to be quantifiable (measurable). All measurements in your investigation must be made in metrics.**

**Volume:**      milliliter (mL)      1000 mL = 1 Liter (L)

**Length:**      millimeter (mm)      10 mm = 1 cm  
                     Centimeter (cm)      100 cm = 1 m  
                     meter (m)              1000 m = 1 km  
                     kilometer (km)

**Mass:**        milligram (mg)      10 mg = 1 cg  
                     centigram (cg)      100 cg = 1 g  
                     gram (g)              1000 g = 1 kg  
                     kilogram (kg)

## □ **Results**

**Write the results of the experiment based on the information you have observed.**

**Example:**      *A sheet of Viva paper towel absorbed an average of 50 mL of water.  
                          A sheet of Suave paper towel absorbed an average of 36 mL of water.*

## □ **Conclusions**

**Before you write your conclusions, carefully examine all your data (graphs, charts, tables).**

**Ask yourself these questions:**

- **Did I get the results I expected to get? If not, how were the results different?**

- Were there any unexpected problems or occurrences that may have affected the results of my investigation?
- Did I collect sufficient data? (Were there enough trials/samples?)
- Do I need to revise my original hypothesis for this project?

*Your conclusions should include:*

1. *Statement of support or non-support of the original hypothesis.*
2. *Description of any problems or unusual events that occurred during your investigation.*
3. *What you would do different next time.*
4. *Revised hypothesis (if data did not support your original hypothesis).*

## □ **Applications**

*Importance of how the results of the experiment may be useful to others or how the knowledge gained may be used in everyday life.*

*Example: Farmers and nursery personnel can use fertilizer to increase the rate of growth of bean plants.*

## □ **Abstract**

*The abstract is a summary of the entire project written in **past tense**. The first paragraph includes the purpose of the experiment and the hypothesis. The second paragraph includes the procedures. The third paragraph includes the results and the conclusions.*

## □ **Report**

*The report should include:*

- a title page,
- the abstract,
- the background information, and
- the bibliography.

## □ **Oral Presentation Outline**

1. *Introducing yourself*
2. *Give the title of your project and its purpose*
3. *Briefly explain why you became interested in this particular project.*
4. *Explain your procedures, relate the number of trials, and show your results using charts, graphs, or logs.*
5. *Relate your conclusions.*

***Explain what you've proven.***

***If there were problems or errors in your experiment, relate these and their bearings on your outcome.***

***6. Tell what further experiments you might try in the future and what you would do differently if you were to do this experiment again.***

***7. Explain any applications of your study.***

## ***□ Suggestions for an Oral Presentation***

- **Smile and be polite**
- **Dress neatly**
- **Stand straight and still. Keep from swaying and looking anxious**
- **Pay attention to the judges/audience and keep eye contact**
- **Project your voice so all of the judges/audience can hear you clearly**
- **Stand to the side of the exhibit**
- **Point out charts, graphs, or other interesting features of your project**
- **Show enthusiasm in your work.**

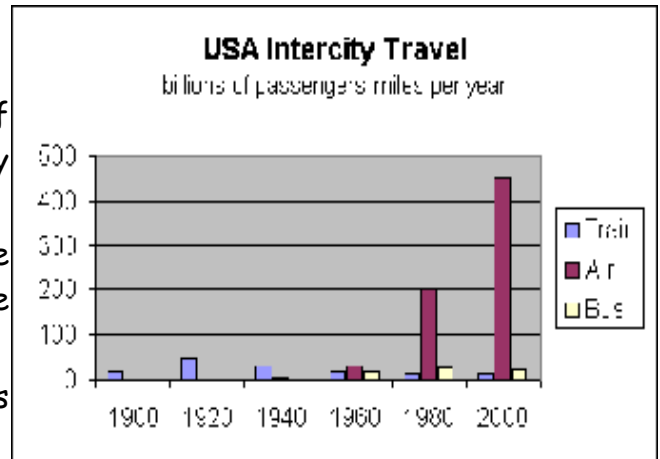
# Examples of Different Types of Graphs

## Bar graphs

If you have to compare different methods of transport used in the US over the last century - train, bus and air.

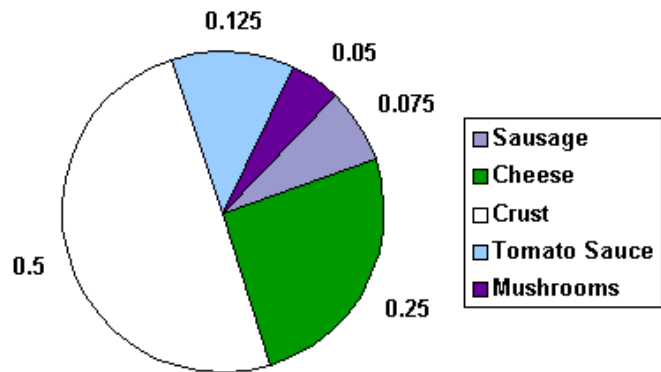
You could start with train (because it is the oldest method) by air (because it is the biggest method of public transport today.)

However, don't start with bus because it is very small and not the main idea



## Pie graphs

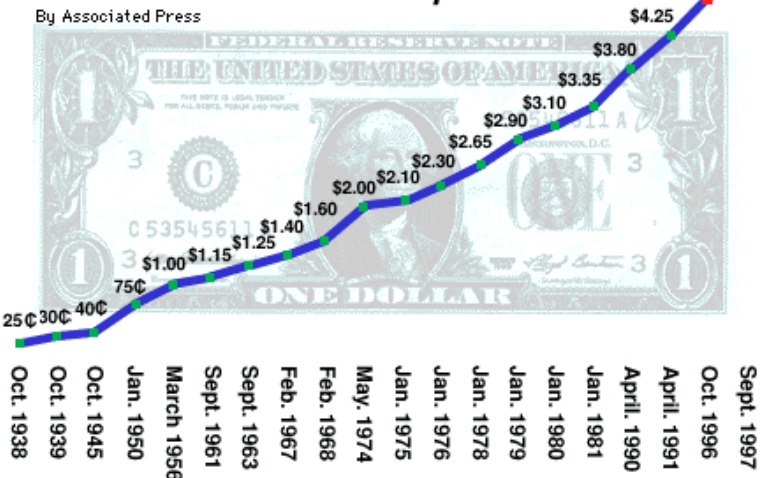
The pie chart below shows the ingredients used to make a sausage and mushroom pizza. The fraction of each ingredient by weight is shown in the pie chart below. We see that half of the pizza's weight comes from the crust. The mushrooms make up the smallest amount of the pizza by weight, since the slice corresponding to the mushrooms is smallest. Note that the sum of the decimal sizes of each slice is equal to 1 (the "whole" pizza").



## Line graphs

Line graphs compare two variables. Each variable is plotted along an axis. A line graph has a vertical axis and a horizontal axis. So, for example, if you wanted to graph the height of a ball after you have thrown it, you could put time along

## The Federal Hourly Minimum Wage Since Its Inception:



the horizontal, or x-axis, and height along the vertical, or y-axis.

Suppose that in a few years, you might be interested in getting some kind of part-time job. You find the following line graph, which plots the minimum wage versus time from October, 1938, to September, 1997. What kinds of things might you be able to tell from it?

Name: \_\_\_\_\_

Teacher: \_\_\_\_\_ Period: \_\_\_\_\_

**SCIENCE FAIR PROJECT**

**Assignment # 1 Project Title.**

**(A Day) Due Date September 10, 2009**

**(B Day) Due Date September 11, 2009**

Please complete the following information and return to your teacher for approval. Por favor complete la informacion siguiente y devuelvela a la profesora para ser aprovada.

**Project Title:**

***Problem Statement*** (needs to be in the form of a question.

Necesita estar escrito en forma de pregunta.


***Approved***

***Not approved***

\_\_\_\_\_  
**Parent Signature / Firma del Padre**

\_\_\_\_\_  
**Date / Fecha**

Name: \_\_\_\_\_

Teacher: \_\_\_\_\_ Period: \_\_\_\_\_

**SCIENCE FAIR PROJECT**

**Assignment # 2 Hypothesis**

(A Day) Due Date September 16, 2008

(B Day) Due Date September 18, 2008

*Please complete the requirements of this assignment and submit to your teacher.*

**Project Title:**

**Problem Statement (needs to be in the form of a question)/**

**Problema (necesita estar en forma de pregunta)**

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**Hypothesis. When you write your hypothesis use words *If and Then..***  
**(Hipotesis) Usa las palabras si y entonces al escribir tu hypothesis.**






**Name:** \_\_\_\_\_

**Teacher:** \_\_\_\_\_ **Period:** \_\_\_\_\_

**SCIENCE FAIR PROJECT**

**Assignment # 3 Variables**  
(B Day) Due Date September 24, 2009  
(ADay) Due Date September 25, 2009

***Please complete the requirements of this assignment and submit  
VARIABLES***

***Manipulated Variables: Variable que se puede alterar a proposito.***

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***Responding Variable: Variable que responde***

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***Variables Held Constant/Control: Variable que nunca varia. Siempre es constante.***

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Name: \_\_\_\_\_

Teacher: \_\_\_\_\_ Period: \_\_\_\_\_

**SCIENCE FAIR PROJECT**

**Assignment # 5**

**Data / Results/ Conclusion Applications**

(A Day) Due Date October 8, 2009

(B Day) Due Date October 9, 2009

**Please complete the requirements of this assignment and submit to your teacher. (Include draft showing how the display board will be organized)**

**Data (graphs, charts, pictures) – attach to this paper. Must have 3 - 5 forms of data. (Data: graficas, fotografias – adjuntar con esta copia)**

<b>Results (Resultados)</b>
<b>Conclusion (Conclusion)</b>
<b>Applications (Aplicacion)</b>

\_\_\_\_\_  
**Parent Signature / Firma del Padre**

\_\_\_\_\_  
**Date / Fecha**



Name: \_\_\_\_\_

Teacher: \_\_\_\_\_ Period: \_\_\_\_\_

**SCIENCE FAIR PROJECT**

**Assignment # 7 Written Report**

(B Day) Due Date October 22, 2009

(A Day) Due Date October 23, 2009

**Please complete the requirements of this assignment and submit to your teacher.**

**Report (Reporte)**

<b>Your report must include the following:</b>
Su reporte debe incluir lo siguiente.
<b>Page 1: Title page. Titulo de la pagina</b>
<b>Page 2: Abstract. Abstracto</b>
<b>Page 3: Background information and bibliography</b>
Conocimiento previo e informacion sobre el tema y la bibliografia.
<b>The entire report must be typed, times new roman font, and size 12 font.</b>
El reporte completo debe ser escrito a maquina y el tamano de la letra debe ser 12.

\_\_\_\_\_  
**Parent Signature / Firma del Padre**

\_\_\_\_\_  
**Date / Fecha**

Name: \_\_\_\_\_

Teacher: \_\_\_\_\_ Period: \_\_\_\_\_

## SCIENCE FAIR PROJECT

## Assignment # 8 & 9

### Display Board Neatness, and Creativity

(A Day) Due Date November 3, 2009

(B Day) Due Date November 4, 2009

**Please complete the requirements of this assignment and submit to your teacher. Por favor complete lo requerido y envíelo a su profesor/a.**

**Display Board** (Should be attractive clear, organized, and free of grammatical errors. See example.) *Debe ser atractivo, claro, organizado, y sin errores gramaticales.*

## DISPLAY BOARD EXAMPLE

<p><b>(2) PROBLEM STATEMENT</b> (the question you are asking)</p> <p><b>(3) HYPOTHESIS</b> (the answer you think you will get from the above question)</p> <p><b>(4) MATERIALS</b> (a list of everything you used)</p> <p><b>(5) PROCEDURES</b> (step by step explanation of what you did, used, and how you used it.)</p> <p><b>(6) ABSTRACT/</b> (a 250 words or less summary of your entire project;)</p>	<p><b>(1) PROJECT TITLE</b> (should NOT take up more than 1/3 of the center section)</p> <p><b>VARIABLES</b></p> <p><input type="checkbox"/> <b>(7) DATA</b> <input type="checkbox"/></p> <p>Pictures, Charts, Data Tables, Diagrams, Proof of doing the project</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>	<p><b>(8) RESULTS</b> (a statement as to what you found according to your data; no interpretations)</p> <p><b>(9) CONCLUSIONS</b> "Why did I get the results I did?" Relate your results to your hypothesis and background information</p> <p><b>(10) APPLICATION</b> (answer the question "What value are my findings to society,? and how can my findings benefit society?)</p> <p><b>(11) ACKNOWLEDGMENTS</b> (a "thank you" list of all those who helped you with your project.)</p>
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**Samples of the Experiment:**

A free-standing part of the experiment, showing what you did should be placed in front of your display board (optional).

**NOTE:** Holds, preserved specimens, disease-causing organisms, live animals, dangerous and prohibited chemicals, explosives, corrosives, or dangerous objects, such as matches or demonstration volcanoes; using ammonium chromate, may NOT be displayed.

**Ejemplo(s) del experimento:**

Si su experimento contiene algún ejemplo auténtico que muestre lo que fue realizado, el mismo deberá ser expuesto al frente del cartel de exhibición.

**NOTA:** Artículos tales como organismos que puedan causar enfermedad, animales vivos, químicos peligrosos o dañinos, explosivos, objetos peligrosos tales como fósforos, y/o cualquier otro artículo que pudiera causar daño o alergia, ammonium chromate, **NO PUEDEN SER EXHIBIDOS.**

**COMPLETE THE REGISTRATION FORM BELOW AND PLACE IT ON THE BACK, UPPER RIGHT-HAND CORNER OF YOUR DISPLAY BOARD**

# ***Science Fair Registration Form***

***Student:***

***Grade:***

***Homeroom Teacher:***

***Room:***

***Science Teacher:***

***Project Title:***

***Everglades K-8 Center***

Name: \_\_\_\_\_

Teacher: \_\_\_\_\_ Period: \_\_\_\_\_

**SCIENCE FAIR PROJECT**

**Assignment # 10**

Individual Oral Presentation

(A Day) Due Date November 9, 2009

(B Day) Due Date November 17, 2009

**Oral Presentation (See outline and suggestions)**

**Everglades K-8 Center**

Student		Grade	Room #			
Teacher		Project #				
SCIENCE FAIR PROJECT EVALUATION RUBRIC					Date:	
Assignment	Written Presentation Criteria	Outstanding	Average	Needs Improvement	Unscorable	
		3	2	1	0	
1	<i>Problem statement (clear / specific / undefined / vague ) Must be written as a question.</i>					
2	<i>Hypothesis (clear / specific / undefined / vague )</i>					
3	<i>Materials (clear / specific / undefined / vague) Must Include Metric System Units.</i>					
4	<i>Procedure (complete / thorough / orderly. Sentences must start with a verb.</i>					
5	<i>Variables (clear / specific / undefined / vague) Evidence of three trials minimum.</i>					
6	<i>Background information (comprehensive / well written / superficial)</i>					
7	<i>Bibliography (comprehensive / well written / superficial) Minimum 3. Use different resources.</i>					
8	<i>Results, conclusion, application (complete /thorough [data: logs, graphs, tables, Photos ] )</i>					
	<i>Conclusion ( logical / supported by data/ relevant to hypothesis)</i>					
	<i>Application (clear objective relevant to needs of potential user) Evidence of real life application.</i>					
3	<i>Abstract (clear/specific summary) Purpose of project along with hypothesis is included in the first paragraph. A summary of the procedures is included in the second paragraph, The results and conclusions are included in the third paragraph.</i>					
4	<i>Report (comprehensive/well developed) Title page, the abstract, the background information, and the bibliography.</i>					
5	<i>Display board (attractive/clear/organized/free of errors)</i>					
Creativity	<input type="checkbox"/> <i>Demonstration of skills (used of the scientific method)</i>					
	<input type="checkbox"/> <i>Originality in approach (unique or unique approach to an old problem [considering the student's level])</i>					
	<input type="checkbox"/> <i>Originality in design of project or use of equipment</i>					
<b>Overall grade for written presentation</b>						



# 101 Science

## Biological

- *How does a spider make its web?*
- *What weight can a spider's web hold?*
- *How does a bird make its nest?*
- *Why do only some plants grow from cuttings?*

## Chemistry

- *Are some substances more soluble than others?*
- *How is chemical change affected by heat?*
- *How is chemical change affected by light?*
- *Do different air temperatures affect the size of a balloon?*
- *Does aluminum foil make a difference in cooking time?*
- *What limits the speed of a boat in water?*
- *What limits the speed of a truck?*
- *What limits the speed of an aircraft?*
- *What is the best cone shape for a model rocket?*
- *How is a chemical change affected by catalysts?*
- *Does temperature affect the pH of acids?*
- *Why do old oil paintings crack?*
- *What are the shapes and oscillations of large soap bubbles?*

## Classical

- *Do different air temperatures affect the size of a balloon?*
- *Does aluminum foil make a difference in cooking time?*
- *What limits the speed of a boat in water?*
- *What limits the speed of a truck?*
- *What limits the speed of an aircraft?*
- *What is the best cone shape for a model?*

## Consumer science

- *What is the effect of antibiotics on bacterial growth?*
- *How hard are different nail polishes?*
- *How much writing can be done by one pen?*
- *Which pens will write upside down?*

# Projects Ideas

- *Which glue stick is best?*
- *Is there a relationship between types of papers and their strength?*
- *Do disinfectants really kill bacteria?*

## Electricity and Magnetism

1. *How can you measure the strength of a magnet?*
2. *Do electromagnetic fields affect plant growth?*
3. *Do strong electromagnetic fields affect microorganisms?*
4. *What blocks a magnetic force field?*
5. *Can magnets erase a floppy disc?*
6. *How conductive is damp wood?*

## Engineering

- *Which homemade airplane design flies best?*
- *Which paper airplane design flies the longest time?*
- *Which type of lawn sprinkler works best?*
- *Which bridge design will support the most weight?*
- *Which building design best withstands an earthquake?*
- *Which folded paper structure will support the most stress?*

## Kitchen Studies

- *Does light affect the ripening rate oapples?*
- *Does temperature affect the ripening rate of apples?*
- *Will apples ripen slower if isolated from each other?*
- *Does all fruit keep better in the refrigerator?*
- *What is the color composition of red inks, dyes and paints?*
- *Does heat destroy Vitamin C?*
- *Which common beverage is most acidic?*
- *How much will a celery strip curl when soaked in water?*
- *What makes apples go brown?*
- *How much of an apple is water?*

## **Light and vision**

- *How long does the flash from a flashbulb last?*
- *How is light affected as it passes through water?*
- *How do rainbows form?*

## **Mathematical applications**

- *How random are random numbers?*
- *Do some Lotto numbers pay more than others?*

## **Meteorology**

- *What colors can be seen in the aurora?*
- *How does day length vary with latitude on a given day?*
- *When does dew form?*
- *Do frost factors increase the amount of dew?*
- *How does the temperature change during the day?*
- *What would happen to the weather if the Earth was a cube?*
- *How important are earthworms to soil and plants?*
- *Which type of soil will erode most easily by running water?*
- *How does slope affect stream velocity?*
- *How much water is there in dry soil?*

## **Other Physics**

- *How do streamer designs affect the free fall of a model rocket?*
- *How do parachute designs affect the free fall of a model rocket?*
- *How does shape and size affect the free fall and impact of an object?*

## **Sound**

- *How can we show that sound is vibration?*
- *How good are we at hearing one voice in a crowd?*
- *Can mothers recognize the cry of their own child?*
- *Can fathers recognize the cry of their own child?*

- *How do parents and other adults react to the cry of a child?*
- *How important is diameter in a long speaking tube?*
- *Do soap bubbles have a natural resonance?*
- *Why type of line carries sound waves best?*
- *What factors affect the pitch of a musical instrument?*
- *How do different solids affect the transmission of sound?*
- *Does the length of a vibrating object affect sound?*
- *What is the range limit for a string telephone?*
- *What makes some restaurants noisier than others?*

## **Plants**

- *How fast do grass roots grow?*
- *What really grows between the tiles in the shower?*
- *Can a tomato plant be grafted to a potato plants?*
- *Which plants add nitrogen to the soil?*
- *What effect does oil have on water plants?*
- *What conditions are favorable for algae growth?*

## **Technology**

- *How big should a parachute be?*
- *What controls the descent rate of parachutes?*
- *How do airplanes fly?*
- *How many blades should a fan have?*
- *How does the design of a windmill's blades affect its power?*
- *Which propeller shape works the best?*

## **Water and other liquids**

- *What is in tap water?*
- *What is tap water?*
- *What types of bacteria are found in tap water?*
- *How clean is the water off my roof?*
- *How does humidity affect evaporation rates?*
- *Does the flow rate of water affect its pressure?*
- *How does wing design affect lift?*
- *Why does the shower curtain move inwards?*

- *What influences the flow of sand, powders and crystals?*
- *What type of soil filters water best*
- *What materials dissolve in water?*



## ***Helpful Websites***

***www.scienceproject.com***  
***www.rossarts.org/naples/ideas.htm***  
***www.terrimore.com***  
***www.cdli.ca/sciencefairs***  
***www.all-science-fairs-projects.com***  
***www.school.discovery.com***  
***www.biology.about.com***  
***www.factmonster.com***  
***http://science.dadeschools.net/scifair/***

### **Attention:**

***No plagiarism will be allowed. Be sure to reword your sources of information in your own words. Remember all these ideas are not your own; Therefore you have to give credit to the author / Sources. Example: Foot notes / Proper References.***