Norman S. Edelcup Sunny Isles Beach K-8
SCIENCE FAIR MANUAL
2019

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Timeline

Due Date	Assignment	Teacher Signature & Comments
Week of August 26	• Science Fair Manuals posted online • Form Parent Signature indicating approval of topic Due • **Proposal Topics Due: August 30**	
Week of September 2	• Background research and Bibliography • Identify Variables and develop Hypothesis • **Problem Statement/Question/Hypothesis due**	
Week of September 9	Continue Background Research (1 page) Work on Bibliography Work on Materials and Procedures	
Week of September 16	**Back ground Research, Bibliography,** (Highlight sentences within the background that support your hypothesis.) **Variables, Materials and Procedures due** Begin experimentation	
Week of September 23	Continue Experimentation and Data collection	
Week of October 1	Continue Experimentation and Data collection Work on putting together research paper report	
Week of October 7	Data Due Begin working on Results and Conclusion Work on Abstract	
Week of October 14	**Results, Conclusion, & Abstract due** Work on putting together research paper/report	
Week of October 21	Finalize Power Point Presentation	
Week of November 4	**Science Fair Project due** • Oral presentations begin • Log	
Week of November 11	Prepare Projects for School Science Fair Select Science Fair Project Participants (Science Fair participants prepare science boards DUE 11/9/19.)	
Week November 19	Set up school fair	
November 20	**School Science Fair & Award Ceremony 2:00PM** On-line Registration for Regional Fair Participants	

Note: Follow your teacher's directions! The timeline below and steps may be different for your class.

Science Fair Project Steps

Choose a Project Topic & Write Purpose/Problem Statement
Research the topic
Write Question
Form Hypothesis
Design Experiment
Conduct Experiment and Collect Data
Analyze Data & Draw Conclusion
Write Abstract
Write Research Paper
Put together Display Board/Power Point Presentation

General Rules and Regulations

All middle school students will conduct a science fair project investigation and will be required to put together either a Power Point Presentation or a Science Fair Project Poster Board. Advanced/Gifted students may be required to do both. **In any case, projects selected to participate at the school fair will have to be displayed on a Science Fair Project Poster Board.** All students must follow their individual teacher's guidelines. The rubric included in this packet will be used at the school fair. Teachers may use a more detailed rubric with other categories in their classroom.

The rules and guidelines established by the SFRSEF and the International Science and Engineering Fair ISEF must be followed. These may be found in the resources below:

M-DCPS Science Fair Rules (ISEF Rules and Guidelines):
Rules and Guidelines 2019
http://science.dadeschools.net/scienceFair/documents/2014-2015/Rules%20and%20Guidelines%202015.pdf

Student Handbook https://member.societyforscience.org/document.doc?id=12

For additional Information visit the ISEF website: http://www.societyforscience.org/isef/document

FORMS REQUIRED by All Participants

1. Forms required by all participants: **Form 1**, **Form 1A** (including Abstract and Research Plan), **Form 1B**, and **Form 3**.
These forms are required before experimentation may begin. They can be found at:
http://science.dadeschools.net/scienceFair/generalRulesAndRegulationsRSEF.html or
http://www.societyforscience.org/isef/document

2. **Additional forms may be required.** Use the **Rules Wizard** Link to help decide which.
(http://apps.societyforscience.org/isef/students/wizard/index.asp)

3. Please review the Rules and Guidelines Handbook for complete information on which forms are necessary for your poster project.

Get a Log Book

Follow your teacher's guidelines for the appropriate format. Basically, anything to do with your project should be recorded in your log book!

Whether you are a research scientist or a first time science fair student, a logbook is a crucial part of any research project. It is a detailed account of every phase of your project, from the initial brainstorming to the final research report. The logbook is proof that certain activities occurred at **specific times**.

- **Log the date of every step.** Include the date your topic was approved and the date the experimentation started!
- Write about your ideas.
- Write about the problems you had and tell how you solved them, or if not, what you did.
- Identify and list the variables, and control experiment
- Plan Experiment design
- Record all of your observations.
- **Your name is written on the inside (only)**

Choose a Project Topic & Write Purpose/Problem Statement

A key step in the Science Fair process is to choose a science fair project idea. Consider what interests you. Perhaps it is something you read about or saw on television. Think of some kind of experiment that you would like to try. You may find the following guide helpful:

- Write a list of things that interests you, things that you enjoy doing (hobbies), or want to learn about.
- Write down as many observations, things that you know or have noticed about this particular thing that you like. It may be a problem you have encountered with it.
- Embed some science on that topic. Keep it meaningful. Think about things that are beneficial to society.
- Write science questions about that topic. Keep it meaningful. Think about things that are beneficial to society.
- Select a question to investigate. Keep it meaningful. Think about things that are beneficial to society.
- Establish a purpose/problem.

***A Purpose/Problem Statement** is a single sentence that describes the reason for doing your experiment.*

Keep in mind, if your project involves using humans or vertebrate animals as test subjects, or potentially hazardous biological agents such as bacteria or mold, you will need to get approval from the school SRC –IRC committee before beginning your work. See page 3.

Research the topic

Once you have a topic, you must identify a purpose/problem and form a testable question. To do this step you need to do some research on the topic to: make a testable question, gain enough background information to form a hypothesis, and develop an experimental design. You should research information about what scientists think about your topic; what do they already know about the topic? What are the processes involved and how do they work? How can your question be tested? What materials and steps are necessary to test your question/hypothesis? How is your question meaningful/beneficial to society?

Background research can be gathered first hand from primary sources such as interviews with a teacher, scientist at a local university, or other person with specialized knowledge. You can use secondary sources such as books, magazines, journals, newspapers, online documents, or literature from non-profit organizations.

Gathering Background Research:

- Helps gain in depth knowledge about the topic and processes you will be observing during the investigation.
- Sparks ideas about different variables to test when setting up the investigation.
- Provides the basis for predicting what will happen in the investigation when making a hypothesis.
- Provides the understanding needed to interpret and explain the results to others –especially a science fair judge!

You must have a minimum of five references. Books, encyclopedias, websites, magazines or interviews from experts in the field can give you background information to help you understand your topic. The information you comprehend from your readings will not answer your question. It will only give you enough knowledge about your topic to develop a testable question, experimental design, and to be able to analyze results.

Write 2 pages of research information. Explain every concept, scientific principle, etc., that you used or referred to in your project. These explanations must be complete and detailed. The background information is **not** a summary of your experiment. It is **a summary of everything you learned while researching your topic**.

Bibliography

When you found your **five** resources, you should highlight the information you find useful or make note cards (these notes may be included in your log book). The information from those resources is what you will use to write your background information. You are basically summarizing in your **own words** what you learned from your resources in a short report. **Do not forget to make a record of any resource used so that credit can be given in a bibliography**. The proper format for a bibliography entry is included in Appendix A. Remember google.com is not a source. Wikipedia is not accepted. Follow the format explained under the bibliography section of this manual.

Write Question

Question: A single sentence stated as a testable question that describes what you want to solve.

The question sets up the investigation and it should be a testable question. Testable questions are those that can be answered through hands-on investigation. Testable questions are always about ***changing one thing to see what its effect is on another thing***. A good testable question includes: the (a) independent/test variable and (b) the dependent/responding variable.

There is standard form for expressing the question:

- What is the effect of (a) _____ on (b) _____?
- How does (a) _____ affect (b) _____?
- A Study of the Effect of (a) _____ on (b) _____.

Make sure that your Problem Statement is testing only one thing/variable.

Compose Hypothesis

After gathering background research, you will be better prepared to formulate a hypothesis. More than a random guess, a hypothesis is a testable statement based on background knowledge, research, or scientific reason.

A hypothesis states the anticipated **cause and effect** that may be observed during the investigation. The hypothesis shows the relationship among variables in the investigation and often (but not always) uses the words if and then. A hypothesis needs to be detailed and specific. The word "I" or "we" must not be included in your hypothesis and your hypothesis can only be one sentence long. Use passive voice when writing your hypothesis (e.g., "if the solution is mixed", **not** "if I mix the solution.") The scientific point of view is impersonal. Avoid the use of first person pronouns (I, me, and mine). Consider this one: If ice is placed in a Styrofoam container, it will take longer to melt than if placed in a plastic or glass container. The time it takes for ice to melt (dependent variable) depends on the type of container used (independent variable).

- A good hypothesis will have a cause and effect relationship.
- If (a) _____ then (b) _____.
- Be sure to include the **independent and dependent variable** identified in your problem statement

Here are a few examples:

- *If mint plants are given water, tea, apple juice and soda over a five week period, then the mint plant being fed water will grow the fastest.*
- *If mint plants are grown in a garage, a closet, a greenhouse, and outdoors, then the mint plant grown in a greenhouse will grow the tallest.*

Remember, it's not important whether or not your hypothesis turns out to be right or wrong; either way new knowledge is gained.

Design Experiment (Identifying Variables, Developing Control Group, Procedures, & Materials)

Once you have composed a hypothesis for your investigation, you must design a procedure to test it. A well-designed investigation contains procedures that take into account all of the factors that could impact the results of the investigation. These factors are called variables and they are things or conditions that may affect the outcome of the experiment. Whenever possible, the experimental design should include a control test/control group to validate the results.

Identifying Variables – There are three types of variables to consider when designing an experiment plan:

- The **test variable (independent variable),** this is the variable that you are changing in your experiment. This is the cause. This is part (a) of the problem statement (see Problem Statement section).

- The **outcome variable (dependent variable)**, this is the variable that reacts or changes in response to the independent variable. This variable should be measurable. This is what you will be observing and recording throughout the experiment and will go in the data section. This is part (b) of the problem statement (see Problem Statement section.
- The **constants or controlled variables** are the factors in your experiment that you have control of and keep constant (keep the same) in order to observe the effects of the one variable that you **do** change (the independent variable).

Control Group (Control Test) – To validate the results of an investigation, a control test or control group should be included. A control experiment is the group that does not receive the test variable (the factor that you are testing). The control group serves as a standard to which compare your results. The control experiment has what is usually considered "normal" conditions, i.e., room temperature, normal amount of water, normal amount of sunlight. A control experiment or group helps you to be sure that what you are testing for is a result of what YOU DID in the experiment. For example if you are testing two different types of soap on a shirt, the control experiment would be comparing the shirts that were washed with the different soaps to a shirt that was washed with water only. This control test was missing soap which is what you were testing.

Materials & Procedures – When conducting a science experiment, it is important to document all of the materials used and provide a detailed summary of the steps taken throughout the experiment. Make your report for materials and procedures detailed to the point that when someone goes over your science fair work, they could repeat the project exactly the way you did.

The materials and procedures should be listed in bulleted format. Use past tense, passive voice (e.g., "the solution was mixed", not "I mixed the solution.") The scientific point of view is impersonal. Avoid the use of first person pronouns (I, me, and mine).

Conduct Experiment and Collect Data

Experiment: Conduct your experiment following your procedure. Carrying out the investigation involves data collection.

- Record observations in your log book a data table.
- When making an observation, write down the date and time.
- Record measurements in metric units, i.e., centimeters (cm); grams (g); degrees Celsius (^{o}C).

***Trials* –**How many times do you need to repeat an experiment? You need to perform the same experiment enough times to be confident you would get the same results if you were to perform the experiment again. Record your results as carefully as you did for the first time.

Data: Keep a record of all the information you have gathered while performing your experiment in your log book. Present your observations and data by using charts, graphs and/ or photographs (include photograph consent form).

- Record and present data in charts, graphs and written summaries
- Use photographs whenever possible to show changes.
- Display all your results and measurements, even if it doesn't match what you thought was going to happen.

There are two types of data that may be collected—quantitative data and qualitative data.

Quantitative Data

- Uses numbers to describe the amount of something.
- Involves tools such as rulers, timers, graduated cylinders, etc.
- Uses standard metric units (For instance, meters and centimeters for length, grams for mass, and degrees Celsius for volume.

For quantitative data, be exact with your numbers or counts and include averages (means), range, mode and median.

Qualitative Data

- Uses words to describe the data
- Describes physical properties such as how something looks, feels, smells, tastes, or sounds.
- Include a rating scale for independent variables that are not easily quantifiable (counted or measured).

If you use qualitative, describe what you observe in detail. Whenever possible, quantify qualitative data by using a rating scale. Example of rating scale:

Stain Removal	
3	Gone
2	Faded
1	Slightly Faded
0	No change

Analyze Data/ Results & Draw Conclusion

After collecting data the next step is to analyze it. The goal of data analysis is to determine if there is a relationship between the independent and dependent variables. In student terms, this is called "looking for patterns in the data." Did the change made have an effect that can be measured? Data analysis goes under the results section.

Analyze Data/ Results: Look at all the data collected and state the findings of the experiment based upon the data you recorded and observed.

- What can be learned from looking at the data?
- Identify patterns or trends in the data.
- In your summary be sure to include the averages, range, mode or median as appropriate.
- Make sure to include comparison statements i.e., increased by ___, decreased by ____.
- Include any errors or uncertainties that may affect the validity of your result.
- How does the data relate to the student's original hypothesis?
- Did what you changed (independent variable) cause changes in the results (dependent variable)?

The next step is to write a conclusion.

Conclusion: Your conclusion should begin with a statement on whether or not your results support or reject your hypothesis. State the major findings from your experiment and include the reason why this happened in your experiment. State any problems that occurred in your experiment that may have affected your results. All other findings should be summarized in this section. Make sure your conclusion answers the following questions:

- What was investigated? (Refer to the Problem Statement)
- Was the hypothesis supported by the data?
- What were the major findings? (Results)
- How did your findings compare with other researchers? (Same/Different, refer to research)
- What possible explanations can you offer for your findings? (Why did this happen? Use background research for possible explanations.)
- How could you improve this experiment? (Focus on controlling variables and/or limitations of measurements recorded.)
- What recommendations do you have for further study? (How would you extend this experiment if you were to do this experiment again next year?)
- **Application**: State how your project and its results will be beneficial and who might benefit from this research. What field of study or persons could benefit from the information gained from your experiment?

Write Abstract

The abstract is a 250 word summary of your entire project and is written after experimentation. It is the last thing you will write and the first thing everyone will read. The abstract is done on a separate page and should be the first page of your research paper. Participants for the regional fair must also complete their abstract on-line for registration. Keep an electronic copy saved in a memory card.

The abstract should start with the purpose of the investigation. From there make sure to include a brief explanation of your experimental procedure, your results, and your conclusion. **Do not include any of your background information**.

This brief 250 word summary needs to wrap up your entire project. When writing your abstract make sure it is written in past tense, passive voice. Never use the word "I" or "we". Write "The mint plants were watered for two weeks," not "I watered the mint plants for two weeks." Since this is the last thing you will write, make sure everything is completed before writing it. Do not start writing your abstract if you have not finished your conclusion yet.

A 250 word summary can fill-up very quickly. Be careful how you word your sentences because you want to get as much detail in this section as possible, using limited space. You want your abstract to interest the reader and persuade them that your research is valuable. Your abstract is like the cover to a book. When it looks and sounds interesting, the reader will be enticed to read more.

Use the guidelines below to write your abstract:

Title
Student Name
School Name
Purpose of the Experiment
An introductory statement of the reason for investigating the topic of the project.
A statement of the problem or hypothesis being studied.
Procedures Used
A summarization of the key points and an overview of how the investigation was conducted.
An abstract does not give details about the materials used unless it greatly influenced the procedure or had to be developed to do the investigation.
An abstract should only include procedures done by the student. Work done by a mentor (such as surgical procedures) or work done prior to student involvement must not be included.
Observation/Data/Results
This section should provide key results that lead directly to the conclusions you have drawn.
It should not give too many details about the results nor include tables or graphs.
Conclusions

- Conclusions from the investigation should be described briefly.
- The summary paragraph should reflect on the process and possibly state some applications and extensions of the investigation.

Sample Abstract

To Fluoridate OR Not to Fluoridate: That is the Question
Daniel Rub
Norman S. Edelcup Sunny Isles Beach Community School, Sunny Isles Beach, FL, USA

The purpose of this experiment was to determine whether tap water should continue to be fluoridated in order to ensure people are consuming the needed amounts of fluoride to have healthy teeth and bones. Five different cities' tap water was tested with a Photometer to determine their fluoride concentration. The Photometer was thoroughly rinsed and benchmarked to ensure that prior tests did not affect the current sample reading. Then the Reagent F- and water sample were added to the Photometer. The Photometer was shaken for 20 seconds until the display showed the fluoride reading which was then translated according to the Fluoride Chart to determine the fluoride concentration in each water sample.

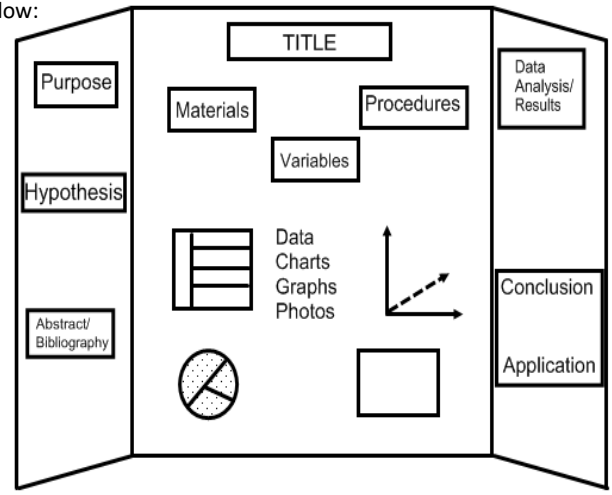
The water tested was from the cities of Golden Beach, Fort Lauderdale, Miami, Hollywood and West Palm Beach. The control group was distilled water. The optimal range of fluoride in water is 0.7ppm to 1.1ppm. The cities of Golden Beach (0.9ppm), Miami (0.9ppm), Hollywood (1.0ppm) and West Palm Beach (0.7ppm) all had average fluoride concentrations within the optimal range. Fort Lauderdale's tap water (0.3ppm) was below the optimal range. On average, all the cities' tap water had a fluoride concentration 86.84% higher than distilled water. However, Fort Lauderdale's samples only had 66.67% higher fluoride concentration than distilled water.

The hypothesis of this experiment was proven correct. The tap water of most cities tested contains the optimal levels of fluoride. People from Fort Lauderdale should find other sources of fluoride. The results of this experiment are important because without sufficient amounts of fluoride, teeth and bones can become damaged. This problem was solved in most of the United States by the 1990s by fluoridating tap water. However, many cities around the country are now passing laws to prohibit fluoride from being added to tap water. If this happens, people will have to find another source of fluoride in order to have healthy teeth and bones.

Put together Display Board/Power Point Presentation

Follow your teacher's guidelines as your primary resource for finalizing your project. Some teachers may require a board and others may not.
Before you put your science fair display board together, you need to sketch out what you have planned in your log. By doing this you can give yourself an idea of what your board will look like and have a rough draft to follow. Remember that the purpose of the display board is to visually summarize your project.

Science fair display boards can be purchase at various locations. The color of the board and how you decide to design it is completely up to you. Make your board appealing. Make it stand out. An attractive board gives your project life, and you will also be receiving a grade for board neatness and attractiveness. However, be sure to fit in the exhibit space and follow the guidelines below:



Maximum Size of Project
Depth (front to back): 30 inches or 76 centimeters
Width (side to side): 48 inches or 122 centimeters
Height (floor to top): 108 inches or 274 centimeters

EXHIBIT GUIDELINES
1. Keep the exhibit neat, uncluttered and to the point.
2. All posters, charts, etc. must be attached to the exhibit.
3. Pictures should not include any human subjects.
4. No part of an exhibit may be attached to walls or tables.
5. It must be self-supporting (FREE STANDING).
6. The exhibit displays your project.
7. Use one-color printing to avoid confusion.
8. Proof read and spell correctly.
9. Main points should be large and simple.
10. The abstract/bibliography must be placed on the board's lower left-hand corner (as you face the board).

Appendix A

INFORMATION FOR A BIBLIOGRAPHIC ENTRY

It is important to follow the same form throughout a bibliography. Bibliographic entries are placed in alphabetical order. For on-line help, go to www.citationmachine.com and select MLA format.

Part of a book
Author, Title (underlined or in italics), Place of Publication, Publisher, Date, Pages
Example: Shippen, Katherine B. *A Bridle for Pegasus.* New York: Viking, 1951. pp 28-42.

Encyclopedia:
Author (if given), Title of Article (in quotation marks), Name of Encyclopedia (underlined or in italics), Edition (year), Volume, Pages, Date
Example: "Balloon – the First Aircraft of Man." *Compton's Pictured Encyclopedia.* 1964, vol. 2. pp.101-102.

Magazines
Author, Title of Article (in quotation marks), Name of Magazine (underlined or in italics), Volume: Number
Pages, Date
Example: Lewis, C. "Navy Unveils Low-Cost Sounding Rocket," *Aviation World.* 69:6. pp. 49-51, November, 1958.

People
Last Name, First Name, Occupation, Address: Date Contacted
Example: Smith, Bob. Gardener. 2801 N 5th, St. Louis, MO 63001: November 28, 1987

Websites
Name of Website Page (in quotation marks), Date, Organization, Date Accessed, URL Address
Example: "Writing an Abstract." 2008. Society for Science and the Public. 20 Jun 2008.
http://www.societyforscience.org/isef/students/abstract.asp

Appendix B
Science Fair Judging Rubric

Part	Criteria/Points	Total
Problem Statement/Question	***To what degree IS the problem statement new and/different for a student at this grade level and how well is it written?*** **0 Points** lacking problem statement **I Point** incomplete problem statement, missing variables **2 Points** complete problem statement, but poorly written, some variables are used. **3 Points** complete well-written problem statement, includes all variables **4 Points** above expectations for that level -detailed and well-written, shows relationship between variables, and title accurately describes study.	
Hypothesis	**To what degree is this a testable prediction?** **0 Points** lacking hypothesis **I Point** incomplete hypothesis **2 Points** hypothesis is present, but not completely testable **3 Points** hypothesis is well-written and testable **4 Points** hypothesis is above expectations for that level - detailed and well-written, unequivocally testable	
Experimental Design/Control of Variables	**To what degree does the experimental design test the hypothesis?** **0 Points** no overall procedural plan to reject or confirm the hypothesis **I Point** partial procedural plan to reject or confirm the hypothesis **2 Points** sufficient procedural plan to reject or confirm hypothesis, independent and dependent variables identified, control group is present **3 Points** all of above and some variables held constant **4 Points** exemplary and detailed procedural plan including repeatability, all conceivable non IV/DV variables held constant	
Abstract	**How well is the abstract written?** **0 Points** no abstract **I Point** abstract present, but lacks explanation of results, conclusions, and/or of methodology **2 Points** Abstract present, includes lacks explanation of results, conclusions, and of methodology, but is longer than 250 words **3 Points** Abstract appropriate length, explains key results, and conclusions and methodology well **4 Points** Abstract appropriate length, explains methodology, key results, and conclusions, and avoids subjective descriptive terminology	
Materials/Procedure Writeup	**Is the materials list and procedures writeup done correctly?** **0 Points** no materials/equipment identified/used, procedures not explained **I Point** materials/equipment not appropriately identified, procedures are vague and unlcear **2 Points** materials/equipment appropriately identified, procedures explain all steps involved **3 Points** materials/equipment carefully identified quantitatively, used appropriately, procedures include all steps needed for replication **4 Points** all of above and procedure represents a novel or student-designed methodology	
Data Collection/ Presentation	**How well do charts, logs, graphs, tables and pictures present the data?** **0 Points** no quantitative data collected **I Point** insufficient data collected and displayed **2 Points** sufficient data collected but incompletely/incorrectly displayed **3 Points** sufficient data collected and displayed **4 Points** data collected and displayed above expectations	
Data and Error Analysis	**To what degree have the results been interpreted? To What degree have the possible errors been analyzed?** **0 Points** no interpretation of data **I Point** partial interpretation of data **2 Points** correct and appropriate interpretation of data **3 Points** comprehensive and significant interpretation of data **4 Points** comprehensive and significant interpretation of data with error analysis	
Conclusion/ Application	**To what degree are the conclusions recognized and interpreted? To what degree are relationships, new ideas, further research, and/or additional explanations identified and presented?** **0 Points** no conclusions, products, and/or applications recognized **I Point** incomplete conclusions, products, and/or applications clearly recognized **2 Points** apparent conclusions, products, and/or applications clearly recognized **3 Points** significant conclusions, products, and/or applications clearly recognized **4 Points** well-written, significant conclusions and future applications clearly recognized	
Display	**Consider the overall quality of the following three attributes combined: visual display, writing skills, and references (both in bibliography and for pictures)** **0 Points** poor quality – more than one attribute is deficient **I Point** below average – only one attribute is deficient OR all attributes are present but of less than fair quality **2 Points** average – all attributes present and of fair quality **3 Points** above average – al attributes present and of good quality **4 Points** superior – all attributes present and of exemplary quality	
Originality/Creativity	**How original (innovative) is the topic to the student?** **0 Points** No original topic, assigned by teacher. **I Point** Found on internet or other source. **2 Points** Modified idea from internet or other source. **3 Points** Original idea. **4 Points** Original with significant and practical application.	
Total Points		

Parent Letter

Dear Families,

The Science Fair is right around the corner. We have compiled a packet of information and support worksheets for your child. Your child will need a log book style journal, a 3-Prong folder with 2 Pockets to turn in their work and a display board for their final project. It is imperative that your child meets the deadlines so that we can return corrected work back to them. Students are more than welcome to work ahead and turn things in earlier. This is a major project and will represent a significant portion of your child's grade for the 2nd Quarter. The primary objective of this project is to have students approach a problem scientifically.
This includes:

1. Asking questions and forming a hypothesis
2. Creating experiments to test that hypothesis
3. Organizing/Analyzing data and drawing conclusions
4. Writing about scientific research

The project must be **experimental** in nature as opposed to research oriented. In other words, students must do a test, survey, or experiment to determine the answer to their question instead of simply looking up information in a book. We encourage students to pick topics that they are genuinely interested in, since they will be working on these projects for the next several months. Topics must also be **"original"**, something students do not already know.

We are going to have a Science Fair workshop for parents on Wednesday, September 18th at 2:00 PM in the **Media Center**. During this meeting we will be there to answer any questions that happen to come up. Please complete the bottom portion of this form to ensure that you have received and reviewed the information.

Thank you,
The Science Department of Norman S. Edelcup/Sunny Isles Beach K-8

☐ **I have read the information in the packet and I'm aware of the project timeline.**

Student Name (Print) _____ ID# _____ Science Teacher _____

Parent Name (Print) _____ Parent Signature _____

Keep this packet in your science fair folder.