**Mapleton Middle School**

**Science Fair**

**Mr. Steve Coffey and Mr. Gary Bush**

**State Science Standards**

**Scientific Inquiry**

|  |  |
| --- | --- |
| ***Doing Scientific******Inquiry***  |  **1. Explain that variables and controls can affect the results of an investigation and that ideally one variable should be tested at a time; however, it is not always possible to control all variables.** **2. Identify simple independent and dependent variables.** **3. Formulate and identify questions to guide scientific investigations that connect to science concepts and can be answered through scientific investigations.** **4. Choose the appropriate tools and instruments and use relevant safety procedures to complete scientific investigations.** **5. Analyze alternative scientific explanations and predictions and recognize that there may be more than one good way to interpret a given set of data.** **6. Identify faulty reasoning and statements that go beyond the evidence or misinterpret the evidence.** **7. Use graphs tables and charts to study physical phenomena and infer mathematical relationships between variables (e.g., speed and density).**  |

**The Best Science Fair Resources**

 **Good Topics**

1. [**http://amasci.com/sc/scifair.html**](http://amasci.com/sc/scifair.html)

 **Hot list of Science Fair Sites**

**2.** [**http://www.kathimitchell.com/scifair.htm**](http://www.kathimitchell.com/scifair.htm)

 **There are Science fair tips on how to make a good project great.**

**4.** [**http://faculty.washington.edu/chudler/fair.html**](http://faculty.washington.edu/chudler/fair.html)

 **Experiments**

**5.** [**http://www.tryscience.org/experiments/experiments\_home.html**](http://www.tryscience.org/experiments/experiments_home.html)

 **Government Site of Science**

**6.** [**http://www.kids.gov/6\_8/6\_8\_science\_projects.shtml**](http://www.kids.gov/6_8/6_8_science_projects.shtml)

 **Science Fair Ideas**

**8.** [**http://www.eskimo.com/~billb/**](http://www.eskimo.com/~billb/)

**Ideas**

**9.** [**http://www.exploratorium.edu/science\_explorer/**](http://www.exploratorium.edu/science_explorer/)

 **Commercial Site, but there are many good ideas found here**

**10.** [**http://www.scienceproject.com/**](http://www.scienceproject.com/)

 **Interesting Experiments**

**11.** [**http://www.spartechsoftware.com/reeko/MoreExperimentsSortCategory.htm**](http://www.spartechsoftware.com/reeko/MoreExperimentsSortCategory.htm)

 **Internet Public Library Science Fair**

**12.** [**http://www.ipl.org/div/projectguide/**](http://www.ipl.org/div/projectguide/)

 **The best site for finding ideas, how to complete a project, paper, and display board.**

**13.** [**http://www.selah.k12.wa.us/LINKS/studentwork.html**](http://www.selah.k12.wa.us/LINKS/studentwork.html)

 **One of the best sites for getting basic Science Fair Questions answered.**

**14.** [**http://www.sciencebuddies.org**](http://www.sciencebuddies.org)

 **Excellent Ideas**

**15.** [**http://www.all-science-fair-projects.com/category0.html**](http://www.all-science-fair-projects.com/category0.html)

 **Updated Links for Science Fair Resources**

**16.** [**http://www.internet4classrooms.com/sciencefair.htm**](http://www.internet4classrooms.com/sciencefair.htm)

 **Excellent Ideas for Upper Level Students**

**17.** [**http://scienceclub.org/kidproj1.html**](http://scienceclub.org/kidproj1.html)

 **Excellent Ideas**

**18.** [**http://www.sciencetoymaker.org/**](http://www.sciencetoymaker.org/)

 **Excellent Ideas**

**19.** [**http://www.juliantrubin.com/sciencefairprojectsaz.html**](http://www.juliantrubin.com/sciencefairprojectsaz.html)

 **Excellent Ideas**

**20.** [**http://www.all-science-fair-projects.com/**](http://www.all-science-fair-projects.com/)

 **A short, but excellent resource lists**

**21.** [**http://www.mhl.org/resources/guides/science\_projects.htm**](http://www.mhl.org/resources/guides/science_projects.htm)

**Science Fair Research Report Information**

**Follow this order when arranging your report.**

1. **Title Page and Table of Content: Keep it short and make it catchy. Write it on a separate page. Include the project title, your full name, and the date of the Science Expo. Follow the Science fair template doc. under the research paper drop down window at the following url:** [**http://bigbearsciencefair.yolasite.com**](http://bigbearsciencefair.yolasite.com)
2. **Abstract: This is a very brief summary of your project journal. It should describe how you followed each step of the scientific method. The length should be between 200-250 words. Write this on a separate page.**
3. **Introduction: State your problem and describe what your project is about. Tell how this idea came about and what you hope to get out of it. Write this on a separate page.**
4. **Research: Describe background information that is related to your project. Include, as well, relevant work done by others. This part should range from 3-4 pages Long. BE THOROUGH. Write this on a separate page.**
5. **Project Journal: Explain in detail, your project in the following areas.**
	1. **Statement of the problem and hypothesis: Stated separately from the rest of the report. This should be a statement of the problem and the working hypothesis, based on known data, but subject to your research of what your research findings will be.**
	2. **Materials and methods: Describe in detail, the materials, equipment, methods, experiment, unforeseen difficulties, and remedies. List the independent variable, dependent variable, control, and the constants. Metric units need to be used.**
	3. **Observation and Data: Describe your observations. Include some of your observational data here as an example.**
	4. **Conclusion: Give the main conclusions your observations tend to prove or deny. (Disproval of your initial hypothesis may be as important as proof of it). Include the evidence developed for each of the main conclusion and any exceptions or for opposing theories. Offer possible explanations.**

1. **New questions, possible applications, and future projects.**
2. **Appendix: Give more detailed and supplementary information often including, graphs, tables, photographs, and drawings.**
3. **References: List those books, periodicals, web sites, people, places, mailings, 800 phone numbers, and other resources that you actually used to provide you with information. You must have, at least 5 different references.**

**IN THE NAME-YEAR SYSTEM, authors are identified by name (either in the main text or in parentheses) and the date of the study is given. When multiple references are cited, they are arranged chronologically starting with the earliest date.**

**In the thorough study by Browne, it was determined that this method was not feasible (2001).**

**Future studies confirmed this finding (Wagner 2002; Williams and Hunt 2003).**

**A LIST OF PUBLICATION INFORMATION CALLED “REFERENCES” SHOULD FOLLOW YOUR PAPER. The format for this list is contingent on the in-text citation style you choose.**

**Name-year system: List the items alphabetically; you do not need to number them.**

**THE PLACEMENT OF DATES IN THE REFERENCES LIST IS ALSO CONTINGENT ON THE IN-TEXT STYLE.**

**Name-year system: Place the date immediately after the author’s name.**

**OTHER FEATURES OF THE REFERENCES PAGE ARE UNIFORM.**

**Author names are listed as last name and first initial (no comma after last name).**

**Do not underline book or journal titles.**

**For book entries, list number of pages in book.**

**The following is an example of a REFERENCES LIST USING THE NAME-YEAR SYSTEM.**

**(Note: Sources are listed alphabetically.)**

**Book with two authors**

 **Albert R., Stevenson P. 1980. New findings in mRNA.**

**Toronto: Science Trail Books. 403 p.**

**World Wide Web Site**

**Browning M. 5 June 1999. Alcoholism and its causes.**

**Available from: http://www.alcoholism.org. Accessed**

**2002 April 26.**

**Book with one author**

**Hughes T. 1999. Nocturnal activity. Boston: Bantam. 356 p.**

**Newspaper Article**

 **Miller K. 2002 May 21. Unpacking the beauty myth. The Wall**

**Street Journal; Sect F : 3 (col 1).**

**Periodical**

**Shafer W. 1985 Mar. Polar bears in the wild. National**

**Geographic 59(1):15-29.**

1. **Acknowledgements: Both prudence and the traditions of science requires that you acknowledge all the help that you receive. List them by name and how they helped.**

**10.Type: Type your report. Use a font no larger than 12.**

**11.Cover: Use a nice cover.**

**The Scientific Method**

**Check out the below web sites for a better understanding of the scientific method, the dependent variable, the independent variable, the control, and the constants.**

**1.**[**http://schoolhouse1.fenn.org/dduane/Science8th/text\_nature\_of\_science.htm**](http://schoolhouse1.fenn.org/dduane/Science8th/text_nature_of_science.htm)

**2.** [**http://www.sciencebuddies.org/**](http://www.sciencebuddies.org/)

**Mapleton Middle School**

**Science Fair Project Letter**

**Science Expo 2018 Intent**

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class: \_\_\_\_ Date: \_\_\_\_\_\_\_\_**

**Dear Parents:**

 **We are planning a Science Expo, and we would like you to attend. With your encouragement and support, we expect all our “scientists” to participate by preparing and displaying individual projects.**

 **We feel that a Science Expo offers many benefits such as:**

* **Stimulates imagination and independent thinking**
* **Increases knowledge in many scientific areas**
* **Teaches the use of the Scientific Method**
* **Trains in the organization and completion of major tasks**
* **Provides the opportunities to enjoy science**

**During the next several weeks, we will prepare for the exhibition by discussing the project, setting up the display, and presenting the results. The exercises should provide direction for making this Science Expo a valuable learning experience.**

 **There are two ways to be involved in the Science Expo. Check the way your child intends to participate. Notify me of any changes so we can plan for the Expo accordingly. *Choosing not to do either will result in an F for science for the 3rd nine weeks.***

**\_\_\_\_ A. Participate at the Science Expo**

 **Place: MMS**

 **Time: 6:20pm**

 **Date: Feb. 22, 2018**

 **(This project will count as ten grades toward the science average.)**

**\_\_\_\_ B. NO participation in the evening Science Expo, but a project will be done in class. (This project will count as five grades toward the science average.)**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Student’s Signature Parent’s Signature**

**Mapleton Middle School**

**Science Fair Proposal 2018**

**Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_**

**Project Description:**

**Is this a continuation from last year? Yes\_\_\_\_ No\_\_\_\_**

**Project Type (check one)**

**\_\_\_\_A. Science Expo Project (Experimental-Follow the Scientific Method)**

 **(Presentation in Class and in the Evening)**

1. **Research Report**
2. **Display Board**
3. **Project (Experimental)**
4. **Project Journal (The Scientific Method)**
5. **Abstract**
6. **Oral Presentation**
7. **Typed**

**Project Area (Circle One): Biology, Chemistry, Botany, Physics, Earth/Space Engineering, Environmental**

**\_\_\_\_B. Science Project (Experimental-Follow the Scientific Method)**

 **(Presentation in Class Only)**

1. **Research Report**
2. **Display Board**
3. **Project (Experimental)**
4. **Project Journal (The Scientific Method)**
5. **Abstract**
6. **Oral Presentation**
7. **Typed**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Student’s Signature Parent’s Signature**

**Return by:**

**Middle School Science Fair Evaluation**

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Class:\_\_\_\_\_\_\_\_\_\_\_\_Date:\_\_\_\_\_\_**

**Each Criterion will be assessed and given a score of 0-5 for a total of 100 points.**

**Final Grade: \_\_\_\_\_\_\_**

**Report**

**1.\_\_\_\_\_ Title Page and Table of Contents**

**2.\_\_\_\_\_Abstract**

**3.\_\_\_\_\_Introduction**

**4.\_\_\_\_\_Research CSE Referenced**

**5.\_\_\_\_\_Project Journal**

 **A. Question**

 **B. Hypothesis**

 **C. Procedures & Materials**

 **D. Data**

 **E. Conclusions**

**6.\_\_\_\_\_ New Questions**

**7.\_\_\_\_\_Appendix**

**8.\_\_\_\_\_Bibliography (Five Resources Minimum)**

**9.\_\_\_\_\_Acknowledgements**

**10.\_\_\_\_Typed**

**Board**

**11.\_\_\_\_\_Title**

**12.\_\_\_\_\_Project Journal**

**13.\_\_\_\_\_Typed**

**14.\_\_\_\_\_Neatness**

**Project**

**15.\_\_\_\_\_Independent Variable**

**16.\_\_\_\_\_Dependent Variable**

**17.\_\_\_\_\_Control**

**18.\_\_\_\_\_Constants
19.\_\_\_\_\_Test Numbers (Five Minimum)**

**20.\_\_\_\_\_ Neatness**