

## Science Fair Checklist

- 🚩 **Science Fair is February 15 & 16, 2017 – (You do not have to enter your project into the Science Fair)**
- 🚩 **Project Due Date: Thursday, February 9, 2017 – Every day late you will lose ten points off your grade.**
- 🚩 **It is worth two test grades for the third marking period. This could cause you to fail if you do not turn one in.**
- 🚩 **Research:** We will be doing research on December 1, 2, & 5 so you can look up topics and information for your project.
- 🚩 All science fair information can be found on my website.
- 🚩 **You should follow the steps of the scientific method while completing your experiment:**
  - State the Question (Topic)
  - Research the Topic
  - Hypothesis
  - Experiment
  - Observe
  - Record and Analyze Your Data
  - Draw a Conclusion

**When you turn in your project you should turn in THREE things:**

1. **Daily Logbook – 20%** - You should keep detailed notes while working on the project. This “notebook” will be turned in every week to Mrs. Yodis to track your progress through out the scientific process. (The dates and information due is listed on page two. It should be a running, day-by-day account of everything that concerns the project – observations, speculations, experiments, materials, procedures, data, hypothesis and conclusion.)
2. **Project Report – 10 %** - Look to page 11 of this packet should include:
  - a. Title page – title of the experiment, date, & period (your name should be on the back)
  - b. Introduction/Research paragraph
  - c. Materials and experiment paragraphs
  - d. Observations/Data/Analysis paragraphs
  - e. Conclusion paragraph
  - f. Acknowledgments (optional)
  - g. References (If necessary)
  - h. Tables & Figures

\*\*\* Be sure that if you use your research, it is not copied word for word. It must be paraphrased and put into your own words. Be sure you know the meaning of any words that you used.
3. **An Attractive Display Board – 70%** - They are available from school – see the order form. Look at the picture on page 12 for items to include on your display board. **You must include an abstract on your display board in the lower right hand corner.**

## Science Fair Due Dates 2016-2017

<u>Due Date</u>	<u>Part of the Project that is Due</u>	<u>Explanation</u>	<u>Points</u>
<b>Monday, December 12</b>	<ul style="list-style-type: none"> <li>✎ Project Topic Paper*</li> <li>✎ Research about your topic – you must have at least 5 facts/pieces of information about your topic *</li> <li>✎ Your topic in question form *</li> <li>✎ Your hypothesis *</li> <li>✎ List of materials you'll use *</li> </ul>	<p>Your project topic must be signed by your parent/guardian</p> <p>Example of research – (Bubble gum) – What is it made of? What is its history? How was it invented?</p> <p>Very Simple – but be specific for your list of materials – think about all areas of your project.</p>	<p>1 – point for signed paper</p> <p>5 – points for research</p> <p>1 – point for topic in question form</p> <p>1 – point for hypothesis</p> <p>1 – point for materials</p>
<b>Monday, December 19</b>	<ul style="list-style-type: none"> <li>✎ Specific (step by step) description of your experiment *</li> <li>✎ Design/draw a chart or a table for collecting your data</li> </ul>	<p>Include variable, control, and step by step what you are going to do.</p> <p>Make a blank chart or table in your logbook to collect your data</p>	<p>2 – points for step by step</p> <p>1 – point for making chart</p>
<b>Tuesday, January 17</b>	<ul style="list-style-type: none"> <li>✎ You must have completed your experiment by this date and have some data and observations from your experiment *</li> </ul>	<p>Remember to test your experiment more than once. Think of different ways to put your data together – tables, pie chart, bar graph, line graph, chart, pictures, etc.</p>	<p>3 – points for data you have collected</p>
<b>Monday, January 23</b>	<ul style="list-style-type: none"> <li>✎ Draft of conclusion* (use the form in your packet to help)</li> </ul>	<p>Using your data and hypothesis to write a summary of your project</p> <p>You do not have to do your final copy but I want to proofread your information.</p>	<p>1 – point for conclusion</p>
<b>Monday, January 30</b>	<ul style="list-style-type: none"> <li>✎ Draft of abstract* (use the form in your packet to help)</li> </ul>	<p>Using your data and hypothesis to write a summary of your project</p> <p>You do not have to do your final copy but I want to proofread your information.</p>	<p>2 – points for abstract</p>
<b>Wednesday, February 1 to Friday, February 3</b>	<ul style="list-style-type: none"> <li>✎ Getting information for your report*</li> <li>✎ Final review &amp; questions *</li> <li>✎ Discussion &amp; ideas about your display board *</li> <li>✎ Typing material for board and report*</li> <li>✎ We will be doing this in class</li> </ul>	<p>I will discuss any last minute problems and show you some ideas for setting up your display board.</p>	<p>2 – points for work in class</p>
<b>Thursday, February 9</b>	<ul style="list-style-type: none"> <li>✎ <b>Completed project due</b></li> </ul>	<p><b>Turn in completed logbook, display board, and report</b></p>	<p><b>Total – 20 points</b></p>

\*All of the information that is due should be written in your science project logbook. Use the worksheets in your science fair packet to help guide you.

## On-Line Resources

1. Facts on File: Science Online - [www.fofweb.com](http://www.fofweb.com) - For this website you need a username and password

username: delranms

password: middle

2. Education.com – Great Science Fair Ideas

<http://www.education.com/topic/great-science-fair-project-ideas/>

3. Science Fair Adventure

<http://www.sciencefairadventure.com/>

4. Neuroscience for Kids: Experiments and Activities

<http://faculty.washington.edu/chudler/experi.html>

5. Energy Quest Science Fair Projects

<http://www.energyquest.ca.gov/projects/>

6. Exploratorium: The Science Explorer

[http://www.exploratorium.edu/science\\_explorer/index.html](http://www.exploratorium.edu/science_explorer/index.html)

7. National Energy Education Development (NEED)

<http://www.need.org/sciencefair>

8. Science Buddies

[http://www.sciencebuddies.org/science-fair-projects/project\\_ideas.shtml](http://www.sciencebuddies.org/science-fair-projects/project_ideas.shtml)

9. Science Fair Extravaganza

<http://sciencefair.math.iit.edu/projects/>

10. Science Bob

<http://www.sciencebob.com/sciencefair/ideas.php>

11. Discovery Education: Science Fair Central

<http://school.discoveryeducation.com/sciencefaircentral/>

12. Internet Public Library – Click on Ideas & Projects

<http://www.ipl.org/div/projectguide/choosingatopic.html>

## Science Project Idea Search

Look through the lists of science project ideas on your science teacher's website and the DMS Library website. Take your time and think about the type of project that would be interesting to you.

Some categories to consider:

- Behavior and Social Science
- Botany
- Chemistry
- Computer Science
- Consumer Science
- Earth and Space Science
- Engineering
- Environmental Science
- Mathematics
- Health and Medicine
- Microbiology
- Physics
- Zoology

Choose three project ideas and write the web address for each so that you can access them in the future.

1. Idea -

Web address -

2. Idea –

Web address –

3. Idea -

Web address –

## Research Plan for Science Project

(All of this information should go in your logbook)

**Problem** (What question do you want to ask?)

**Research** – Write at least five facts or pieces of information about your topic as a start for your research paper. You can write these directly in your logbook.

**Fact 1**

**Resource for Fact 1**

**Fact 2**

**Resource for Fact 2**

**Fact 3**

**Resource for Fact 3**

**Fact 4**

**Resource for Fact 4**

**Fact 5**

**Resource for fact 5**

**Hypothesis** (What do you think will happen? Why do you think this will happen?)

**Materials List** (What type of equipment and materials will you need to complete your experiment?) Be specific.

**Procedure**

Identify the **variable** (What will you change?)

Identify the **control** (What you will set up to compare, what will stay the same?)

**Procedure** (Write the steps of your experiment. What will you do?)

**Collecting Data and Observations** - Tell how you will measure any changes (pictures, notes, measurements, times)

**What kind of table or chart will you use to record your data?**

## Writing a Conclusion

Follow the script and write the conclusion in paragraph form.

### **Conclusion Outline**

**As stated in my hypothesis, I believe/think...**

(write your hypothesis)

**After completing my experiment I found that my hypothesis was (correct/incorrect or right/wrong)**

**because ...**

(list the reasons why)

**If I were to do this experiment again, I would ...**

(write what you would do the same or different or if you would do it again and why?)

## Abstract Outline

First Paragraph introduces your purpose.

**The purpose of my science fair project is to ...** (Tell the usefulness of the experiment. Answer the question WHY you choose the project.)

The second paragraph is about the procedure you followed. Notice the transition words, you do not have to use all of them. Use them as you explain the steps of your experiment. Include data which means what actually happened. Explain the kind of measurements you obtained.

**To conduct my experiment, I first...**

**Next**

**Then**

**After**

**Once**

**Then**

**This**

(Turn paper over – there is a back)

The last paragraph states the results of your experiment.

Yes, I proved my hypothesis because...

No, I didn't prove my hypothesis because...

**I found that ...**

**Finally, ... (explain how this could be used for future applications or what you would change or if you would do it again and why?)**

#### **Format Requirements**

- Three paragraphs (purpose, procedure, conclusion)
- Keep it to one Page
- Edit for Spelling and punctuation
- Attach to the lower right hand corner of your science project
- No name, school, acknowledgements, or work done by lab scientist who helped you.

## How to Prepare Your Research Paper

At this point, you are in the home stretch. Preparing your research paper will involve pulling together the information you have already collected into one large document. Your research should include the following and make a separate page for each section.

- **TITLE PAGE** - Includes your project title. This is the cover page for your research paper. You can put a graphic or picture, but DO NOT include your name or teacher's name. (Your name goes on the back)
- **INTRODUCTION/RESEARCH** - The introduction sets the scene for your report. The introduction includes stating the problem, your hypothesis, an explanation why you chose your project and what you hoped to achieve. Look at your research plan page. Your research plan will help you write your introduction.
- **MATERIALS/EXPERIMENT**- Describe in detail the methods used to collect your data or make your observations. It should be detailed enough so that someone could repeat the experiment from the information in your paper (like a recipe). Refer to your logbook for this information, because you wrote everything down in your logbook as you performed the experiment.
- **OBSERVATIONS/DATA/ANALYSIS** - This is the main part of your research paper. When you are composing your discussion, your results should flow smoothly and logically from your data. Look at your logbook for this information. Be thorough. Allow your reader to see your train of thought, letting them know exactly what you did. Compare your results with published data that you may have found in your literature review, commonly held beliefs and/or expected results (your hypothesis). Include a discussion of possible errors. Did the data change much when you repeated your experiment again? Were your results affected by uncontrolled events? What would you do differently if you repeated this project? What other experiments should be conducted if you were going to work on this project again next year?
- **CONCLUSION** - Briefly summarize your results. Be specific, tell if your results agreed or disagreed with your hypothesis. You will get this information from your logbook. Do not put anything in the conclusion that has not already been discussed somewhere else in your project.
- **ACKNOWLEDGEMENTS** - (Optional) you should always give credit and thank to those who helped you. Identify any materials you received or borrowed from someone, but do not mention any names. You do not need to put his on our display board.
- **REFERENCES** – You may call this page your list of Reference or Bibliography or Work Cited and it should include any information that is not your own. This includes books, journal articles, internet, magazines, interviews, etc. For your project, you should have a least five references that you actually used. Follow the proper bibliography format, found on the DMS Library website under “Citation,” prepared by our librarian Mrs. Bisirri.
- **TABLES AND FIGURES** - Include tables, charts and photographs that further help explain your experiment.

**These pages should be stapled together. You will display this research paper in front of your project board.**

## **The Display**

A Sample Display Board – Does not have to be exactly like the diagram above.

### **DO:**

- Use computer-generated graphs
- Display photos representing the procedure and the results
- Use contrasting colors
- Limit the number of colors used
- Display models if possible
- Attach your charts neatly
- Balance your materials on your display board, distribute them evenly

### **DON'T:**

- Leave large empty spaces on the display board
- Leave the table in front of your display board empty
- Make your title difficult to read
- Hand-print letters on your display board
- Attach folders that fall open on the display board
- Make mistakes in spelling words
- Have faces in any pictures on your board
- Do not write directly on the board

**Rubric for Science Project Logbook – The logbook is worth 20% of your science project grade.**

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**Rubric for Science Project Display Board – The board is worth 70% of your science project grade.**

	<b>10</b>	<b>8</b>	<b>6</b>	<b>4</b>	<b>2</b>	<b>Score</b>
<b><u>Title/ Problem/ Hypothesis</u></b>	Title is large, clear, and easy to read. Problem can be investigated and is interesting; it is clear and concise and is in question form. Hypothesis is an educated guess and is strongly supported.	Title is large, clear, and easy to read. Problem can be investigated and is interesting; it is understandable and in question form. Hypothesis is an educated guess supported by some details.	Title is clear but too small or too large. Problem can be investigated; it is understandable and in question form. Hypothesis is an educated guess supported by no details.	Title is too small or too large and difficult to understand. Problem is a question that can be investigated, but it is very broad. Hypothesis is a guess with nothing to back it up.	No title. Problem is not in a question or it can not be investigated. Hypothesis unclear.	
<b><u>Procedure/ Experiment</u></b>	Procedures/ experiments were outlined in a step-by-step fashion that could be followed by anyone without additional explanations. The variables and control were clearly defined and easily interpreted.	Procedures/ experiments were outlined in a step-by-step fashion that could be followed by anyone without additional explanations. The variables and control were easily identified.	Procedures/ experiments were outlined in a step-by-step fashion, but had 1 or 2 gaps that required explanation. The variables and control were found but not completely clear.	Procedures/ experiment were outline in a step-by-step fashion, but had 3 or more gaps that required explanation. Could not identify the variables and/or control, without explanation.	Procedures/ experiment outline was incomplete and not sequential. No variables and/or control were identified.	
<b><u>Data/ Observations</u></b>	Data was collected several times.	Data was collected more then one time.	Data was collected more then one time.	Data was collected only once.	Data was collected only once and there was no clear indication of the results.	
<b><u>Charts &amp; Graphs</u></b>	Provided an accurate, easy-to-follow diagram/chart with clear and correct labels.	Provided an accurate diagram/chart with correct labels.	Provided an easy-to-follow diagram/chart with confusing labels	Did not provide a diagram/chart or it was incomplete.	Did not provide a diagram/chart or it was incomplete with no labels.	
<b><u>Conclusion</u></b>	Student provided a detailed conclusion clearly based on the data, related findings, and incorporated the hypothesis.	Student provided a somewhat detailed conclusion clearly based on the data and related to the hypothesis statement.	Student provided a conclusion with some reference to the data and the hypothesis statement.	Student provided a conclusion with some reference to the data but no mention to the hypothesis.	No conclusion was apparent.	
<b><u>Abstract</u></b>	It is a concise summary of the project. The purpose, procedure, data, and conclusion are clearly defined. It is located in the lower right hand corner of the board.	A summary of the project with the purpose, procedure, data, and conclusion all included. It is located in the lower right hand corner of the board.	The summary is too detailed, with the purpose, procedure, data, and conclusion included but not clearly defined. It is located in the lower right hand corner of the board.	The summary is to general and it is missing one of the following aspects: purpose, procedure, data, or conclusion. It is located in the lower right hand corner of the board.	It is not a summary and it is missing two or more of the following: purpose, procedure, data, or conclusion. It is located in the lower right hand corner of the board.	
<b><u>Spelling/ Grammar/ Attractiveness</u></b>	All grammar and spelling are correct. Typed, clean and neatly put together. Logically organized information on the display board.	One or two errors in grammar and spelling. Typed, clean and neatly put together. Information organized on the board in some type of sequential order.	Two to five errors in grammar and spelling. Typed, print too small or too large. The board is too cluttered or too plain. The board is somewhat confusing.	More then five errors in grammar and spelling. Typed, print too large or too small. The board is not neat and it is confusing and hard to follow. No organization, information placed anywhere.	Very frequent grammar and/or spelling errors. Written, sloppy, and no effort or function in putting the board together.	

**Rubric for Science Project Report – The report is worth 10% of your science project grade.**

	<b>2</b>	<b>1.5</b>	<b>1</b>	<b>0.5</b>	<b>Score</b>
<b><u>Introduction</u></b>	Presents a concept leading to the report.	Gives too much information—more like a summary.	Gives very little information.	Does not give any information about what to expect in the report.	
<b><u>Research</u></b>	Includes many other interesting facts and background information.	Includes a few other interesting facts and some background information.	Gives some background information.	Does not give any background information.	
<b><u>Experiment, Procedure &amp; Observations/ Data/Analysis</u></b>	The experiment/procedure is easy-to-follow steps which are logical and detailed. The data table/graphs are neatly completed and totally accurate.	Most of the steps of the experiment/procedure are understandable: some lack detail or are confusing. The data table/graph are accurate, with few mistakes.	Some of the steps of the experiment/procedure are understandable; most are confusing and lack detail. The data table/graph are both complete, minor inaccuracies and/or difficult things to read.	The experiment/procedure is not sequential, most steps are missing or confusing. The data table/graph are missing or information is inaccurate.	
<b><u>Conclusion</u></b>	Presents a logical explanation for findings and addresses most of the questions in the problem.	Presents a logical explanation for findings and addresses some of the questions from the problem.	Presents an illogical explanation for findings and addresses few questions from the problem.	Presents no explanation for findings and does not address any of the questions from the problem.	
<b><u>Spelling, Grammar, &amp; Attractiveness</u></b>	All grammar and spelling are correct. Typed, clean and neatly bound with a title page.	One or two errors in grammar and spelling. Typed, clean and neatly bound with a title page.	More than two errors in grammar and spelling. Typed, print too small or too large, pages not bound together.	Very frequent grammar and/or spelling errors. Written, not typed, no title page, and loose pages.	