Science Fair Project Manual

##### NAME\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ROOM #\_\_\_\_\_\_

**SEPTEMBER 2012**

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| --- | --- | --- | --- | --- | --- | --- |
| **Sunday** | **Monday** | **Tuesday** | **Wednesday** | **Thursday** | **Friday** | **Saturday** |
| 2 | **3**  Choose a topic or problem to investigate  Make a list of resources(school/community library, people to interview)  Research anything related to your topic  List references for the bibliography of your written report (This is an ongoing part of your project) | **4** | **5** | **6** | **7** | **8** |
| **9** | **10**  Create a list of materials you need for your experiment  Begin preliminary investigations  Start a notebook for keeping records  Start working on your purpose and hypothesis | **11** | **12** | **13** | **14** | **15** |
| **16** | **17**  Decide what material you will use in the display. Make a list and all visual aides.  Continue to record data from your experimentation.  **8th SCIENCE FAIR PROPOSAL DUE TUESDAY, SEPTEMBER 18!!**  **7th SCIENCE FAIR PROPOSAL DUE WEDNESDAY, SEPTEMBER 19** | **18** | **19** | **20** | **21** | **22** |
| **23** | **24**  Begin collecting/buying materials for your display  Continue to add info to your project notebook as you receive it  Begin to write your Review of Literature AKA Research Paper | **25** | **26** | **27** | **28** | **29** |

**OCTOBER 2012**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sunday** | **Monday** | **Tuesday** | **Wednesday** | **Thursday** | **Friday** | **Saturday** |
| **30** | **1**  Continue to record data and observations.  Start analyzing data and creating graphs/charts/tables  Begin the outline for your research paper | **2** | **3** | **4** | **5** | **6** |
| **7** | **8**  Begin designing your display board AND Start typing your 3 page research paper  **8TH GRADE: FIRST PAGE OF RESEARCH PAPER DUE TUESDAY, OCTOBER 16!!**  **7TH GRADE: FIRST PAGE OF RESEARCH PAPER DUE WEDNESDAY, OCTOBER 17!!** | **9** | **10** | **11** | **12** | **13** |
| **14** | **15**  Finish converting your experiment data into charts/tables/graphs  Continue organizing information from your research and continue typing the paper (Don’t forget to use APA format) | **16** | **17** | **18** | **19** | **20** |
| **21** | **22**   1. Finish decorating your display board. 2. Practice your presentation (This should include all steps of the scientific method and some interesting pieces from your research) 3. Finish editing your Review of Literature   **ROUGH DRAFT OF YOUR 3 PAGE RESEARCH PAPER DUE \*\*This should consist of 3 typed or 4 written pages. \*Note- You will peer edit this in your language arts class**  **8th GRADE IS DUE TUESDAY, OCTOBER 30, 7TH GRADE IS DUE WEDNESDAY, OCTOBER 31TH** | **23** | **24** | **25** | **26** | **27** |

**SCIENCE FAIR BOARD & REVIEW OF LITERATURE DUE**

**8TH GRADE IS DUE TUESDAY, NOVEMBER 6TH , 7th GRADE IS DUE WEDNESDAY, NOVEMBER 7TH.**

Research

No matter what the topic or purpose of your project, the next step should be research. What this means is this: find books, encyclopedias, magazines, on-line sources (although make sure these are *reputable sources*), and any other source that contains information pertaining to your chosen topic. You won’t have time to read everything when you are searching for useful information, so here are some tips for helping you decide which material is the best for your purposes:

1. Look at the title page or find the author. Is the author an authority on this subject?
2. Look at the copyright information. Is the information new enough to give the latest information?
3. Skim the introduction. Does the author say anything that indicates that this information will be useful?
4. Skim the table of contents. Is any useful information listed?
5. Examine the bibliography. Is there any information, books, or articles listed that you might be able to use?
6. Skim the appendix and index. Is there material listed here related to your topic?

As you discover sources and begin to read about your research topic, you will also begin the process of taking notes. Taking notes is a very important part of the research paper process. One cannot expect to remember all that is read. Many writers decide to take notes on index cards, pieces of paper, or type them directly onto the computer. What is important is that notes from various sources are separated onto different cards, separate paper, or separate pages in your word processing program.

Documenting Your Sources

Parenthetical documentation should be used to recognize sources within your paper. To do this, you must state the author’s last name and the year in which you found your information within parentheses following the sentence that contains the cited information. For example: (Jeffers, 2005). Please follow these guidelines**:**

1. If you copy information directly from a source you must place the information within quotation marks. Follow the quote with the author’s last name and year in parentheses and a period. ***“If a man does not keep pace with his companions… perhaps he steps to the beat of a different drummer” (Thoreau, 1842).***
2. If you paraphrase information which contains important ideas and facts you did not know, you should follow the sentence/paragraph with the author’s last name and year in parentheses followed by a period. Do not use quotation marks. ***Since 1954, more than 50 ships and aircrafts have vanished in or near the Bermuda Triangle (Burgess, 1996).***
3. When there is no stated author, place the name of the source and year within parentheses. ***When she was young, she was a political activist for the Republican Party (Academic American Encyclopedia, 2003).***

Writing the Reference List

If you plan to use information from a particular book, encyclopedia, magazine or any other source, you MUST record and keep certain information to be used in your paper’s reference list. You may use on-line sources, TV programs, lectures, interviews, letters, or surveys to provide references for your research paper as well as traditional resources like books and magazines. Use the APA guide for writing your reference list. (Use [www.citefast.com](http://www.citefast.com) in order to develop your APA Bibliography List)

\*\*All reports should include at least 4 resources.

\*\*Please note: Internet sources are not always reliable. Using (.gov), (.edu), and (.org) are **usually** safe. If you are unsure, please ask!!\*\*

Typing the Final Paper

You are now in the final stages of writing your research paper. What do you do next? Before you begin typing your paper, keep in mind that your final paper should be neat as well as complete. Proofreading in this near-final stage is crucial because you are able to check your final draft one last time for organization, clarity, spelling, punctuation, and word choice.

**Here are some helpful guidelines to follow when preparing the final paper:**

1. Your paper should follow these spacing requirements: 12pt. Font, double-space your lines and leave normal (1 inch) margins at the top, bottom, left and right edges of your paper.
2. Always indent at the beginning of each paragraph. Place 2 spaces after each period, question mark, or exclamation point, and 1 space after all other punctuation.
3. The **Reference List** page needs to have sources cited according to APA format and be in alphabetical order. The reference list should also be formatted in the “hanging” paragraph style. (See APA format guide).
4. Number the 2,3,4,5,etc. pgs of your research paper. **Do not number the title page, page 1 of the research paper, or the reference list.**
5. The research report should at least be **3 pages long**.

Prepare your final report in this order: 1)**Title Page** that includes the title of your paper, your name, and the date 2)**Table of Contents** 3)**Research Report** 4)**Scientific Method** 5)**Reference List**

\*\*The research paper should NOT give details about YOUR project. It is a collection of information about your topic not a summary of what you did! That is what the conclusion of your experiment is for!\*\*

The Scientific Method

Once you have found adequate information about your topic, you should begin designing your experiment. Your experiment should follow the steps of the scientific method:

1. Purpose- the question/ Why are you doing this experiment?
2. Hypothesis- educated guess (I think that…….because……)
3. Materials
4. Procedure- step-by-step instructions for duplicating your experiment. Please make sure that it is specific enough for someone else to duplicate.
5. Data Collection- charts and graphs should be used to collect and organize data
6. Results- use the data to explain what happened in the experiment
7. Conclusion- analyze the results and indicate whether the data supported or did not support your hypothesis.

The experiment should be done at least 3 times to ensure good results. Those students who use surveys should keep a log of boys/girls, grade/age, and any other detail which might change the outcome of the experiment. Try to minimize variables.

Your Project Board

**Your board can be covered or left white. Use contrasting colors to print: Title, Purpose or Problem, Procedure, Hypothesis, Materials, Charts, Graphs, Results, Conclusion. Print the information for each step and fasten it below the appropriate heading. Your graphs should be done on computer if possible. Contrasting color construction paper should be used as backing for information. Your display should be neat and organized. It is NOT the most important part of your project, but it will reflect your effort and leave a lasting impression on your classmates and/or judges. If you are chosen to go to the Volta Science Fair, your research paper will be displayed in front of your display**.

Procedure

1.

2.

3.

Use action verbs like: collect, mix, pour, place, measure, etc.

Problem

#### Title

Pictures, Drawings, Additional Information

Hypothesis

Materials

(USE METRIC UNITS)

Graphs

Results/Data

Analysis/ Conclusion

What did you learn?

Science Fair Project Proposal

* APPROVED
* NOT APPROVED! SEE ME!
* ENDORSEMENTS NEEDED

**NAME\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ROOM #\_\_\_\_\_\_\_\_**

**TITLE OF PROJECT**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**A. State the question you are trying to answer.**

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**B. Formulate your hypothesis.**

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**C. List the materials/equipment required of your experiment.**

* 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**D. *Briefly* describe the steps you plan to follow for the experiment.**

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**E. What additional help do you think you will require?**

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**F. List at least three potential references on the reverse side of this sheet.**

Teacher Approval \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Ten Famous Two-letter Words:



IF IT IS TO BE, IT IS UP TO ME