

**STUDENT'S PACKET  
FOR  
THE  
SCIENCE FAIR  
PROJECT**

## **SCIENCE PROJECT STEPS**

1. Choose a topic. Be sure it interests you. Don't pick one because you think it will be easy. Talk it over with your parents and when you have decided, inform your teacher, and do not ask to change your topic later. Get your Registration form for your teacher signed by your parent and turn it in.
2. State your purpose as a question. What is it that you want to find out by doing this project?
3. Research your problem. Look at any books/websites that might help you, make observations by simply looking at things, talk to people, and find out as much as possible about your topic. Write down any ideas you have and where you got them. Also, keep note of all information needed for citing your resources.
4. Form a hypothesis. What do you think is going to happen? Based on what you know or found out from step #3, what do you think the results of your experiments will be? After doing the experiments, it may turn out that your guess was wrong. It is okay if this happens.
5. Plan your project. How will you test your hypothesis? What experiments will you do? How will you measure the results? Where will you keep your information? Be sure to keep notes and write down everything you do and what happens.
6. Collect all your materials. Find a place to keep things where others won't bother them. Let other family members know what you are doing so they don't throw your materials away by mistake.
7. Conduct your experiments. Remember, the more times you do an experiment the more reliable and accurate the results will be. Do each experiment at least three times and get an average of the results for your graph. Use something to measure your experiments: a ruler or yardstick if you are measuring distance, a clock to measure time, etc. Check the measurements to be sure you are correct.
8. Record your data. As you do your experiments, you will want to write down what you saw or found out. Organize this information in an orderly manner. Put the date, time, and any other useful information. Write your measurements clearly.
9. Draw conclusions. What did you learn from your experiments? Have you proved or disproved your hypothesis? You made a guess about what you thought would happen. Now tell what really did happen. You don't lose points if your guess turned out to be wrong.
10. Prepare your titles, charts, graphs, drawings, and diagrams. Make them large enough to see, neat, and colorful.
11. Construct your science fair display. Get your cardboard display board from your teacher so you can show all your work and have your hands free to point to sections when you give your presentation.
12. Prepare and practice your presentation. Be able to tell about what you used what you did in your experiments, and what you found out. Know it well enough that you don't have to read it from the display.
13. Plan a time line so you don't leave everything until the last minute. If you need help, tell your parents and your teacher, the earlier the better.
14. Relax and Enjoy yourself. You will do a GREAT job!

## **SCIENCE FAIR RULES**

**Aw!, you mean there are rules? Of course there are, silly, this is made by adults!**

1. Number one rule. . . think safety first before you start. Make sure you have recruited your adults to help you.
2. Never eat or drink during an experiment and always keep your work area clean.
3. Wear protective goggles when doing any experiment that could lead to eye injury.
4. Do not touch, taste, or inhale chemicals or chemical solutions.
5. Respect all life forms. Animals are not allowed to be used in experiments. Do not perform an experiment that will harm a person.
6. All experiments should be supervised by an adult.
7. Always wash your hands after doing the experiment, especially if you have been handling chemicals.
8. Dispose waste properly.
9. Any project that involves animals, drugs, firearms, or explosives are NOT permitted.
10. Any project that breaks district policy, and/or local, state, or federal laws are NOT permitted.
11. Use safety on the Internet! NEVER write to anyone without an adult knowing about it. Be sure to let an adult know about what websites you will be visiting, or have them help you search.
12. If there are dangerous aspects of your experiment, like using a sharp tool or experimenting with electricity, please have an adult help you or have them do the dangerous parts. That's what adults are for so use them correctly. (Besides, it makes them feel important!)

## Science Fair Written Report

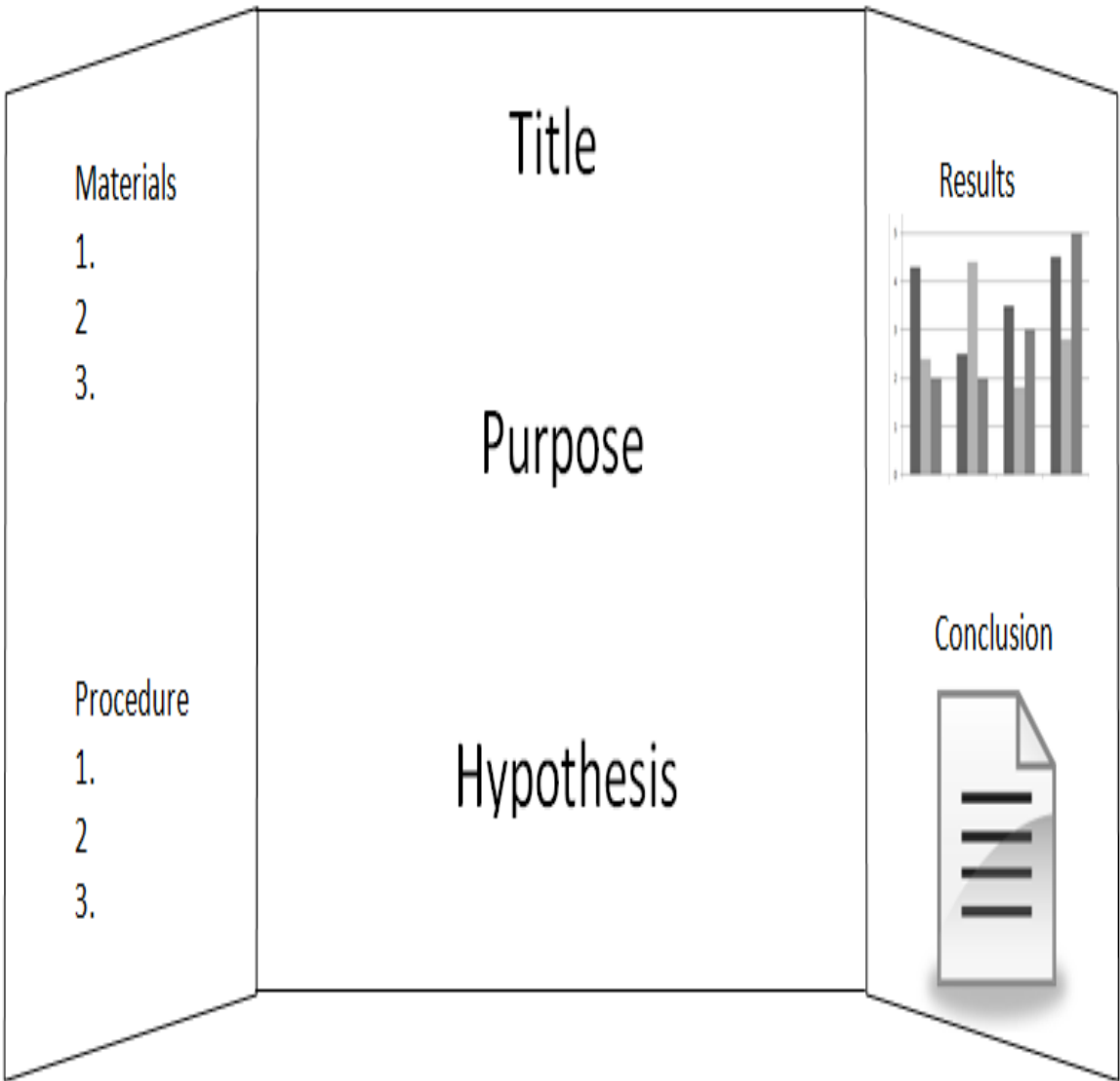
The written report is a summary of everything that you did to investigate your topic. The written report provides others with vital information on what your project is about as well as its effect on your understanding of the topic. Usually the written report is 5-30 pages in length. All information must be included in the written report. This report provides you with the opportunity to think about all the aspects of our project and share your ideas with others.

Reports should be neatly bounded in an attractive binder. It must be typewritten.

- Typed, doubled spaced. One inch margins, and 12 pt Times New Roman Font
- Remember to put headings/titles on graphs/charts/tables
- All photographs must have captions explaining their significance
- Before you hand in your report make sure to reread, revise, and rewrite
- Recheck your calculations, spelling, and grammar.

All written report for a science fair project should include:

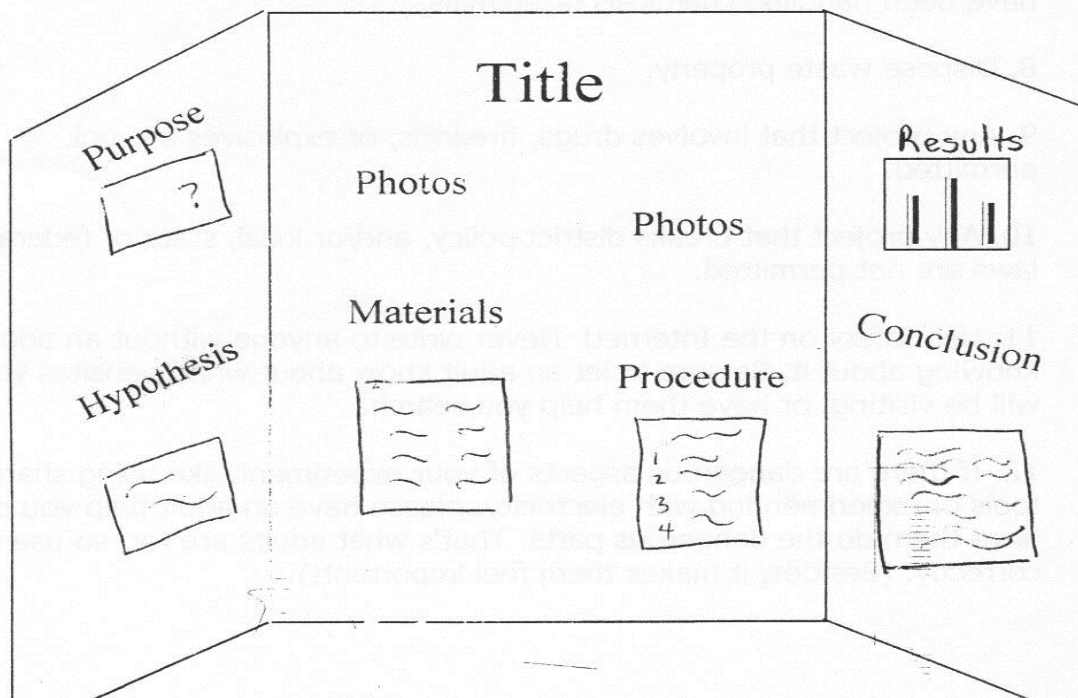
- ✓ **Title Page:** The first page in the report should include the title of the project as well as the name and grade of the student.
- ✓ **Acknowledgment:** Here is where you thank everyone who helped to make your project successful (including Mom and Dad.) Everyone that you interviewed, including teachers, scientists, and other experts in the field should be mentioned here.
- ✓ **Table of Content:** This page provides the reader with a list of the different parts of the project and the page number on which each section can be found.
- ✓ **Statement of Purpose:** State the purpose of the project **in the form of a question.**
- ✓ **Hypothesis:** You must have a hypothesis before you complete the project. A hypothesis is an educated guess about what you think will occur as a result from completing your experiment.
- ✓ **Research:** This is the part of the report that contains all the background information that you collected about your topic. Any books or articles read from the internet/journal, authorities on the topic that you talked to, or outside materials collected should be summarized in this section. **This section should be written in your own words and NOT copied from your resources.**
- ✓ **Materials:** This is a list of all the materials and supplies used in the project. Quantities and amounts of each should also be indicated.
- ✓ **Procedure:** You will list and describe the steps you took to complete the project. Usually this is listed in a numbered sequence. This part shows the stages of the project so that another person can carry out the experiment.
- ✓ **Observations and Results:** In this section, you will tell what you learned from the project. It is also IMPORTANT to include all graphs, charts, or other visual data (pictures) that helps to show your results.
- ✓ **Conclusion:** This is a brief statement explaining why your project turned out the way it did. You should explain why the events you observed occurred. Using the word “because” is a good way to turn an observation into a conclusion. The conclusion should tell whether the hypothesis was proven or not proven. Also give the reason(s) why you chose to learn more about the subject. You could also add what you know now that you didn’t know before you completed your project.
- ✓ **Reference Page:** The bibliography should list all the printed materials the student used to carry out the project. Items should be listed in alphabetical order in a standard format. These website are a great place to go to find the proper way of writing a bibliography. <http://www.bibme.org/> , <http://www.easybib.com> or <http://www.knightcite.com> Also <http://www.Icyte.com> lets you “tag” information from Internet sources as you research.



**CHECKLIST  
PROJECT POSTER BOARD**

1. **Statement of Purpose** – State the purpose of the project **in the form of a question.**
2. **Hypothesis** – State the hypothesis (educated guess that answers the project question)
3. **Materials** – List the materials used in the experiment
4. **Procedure** – Describe how the experiment was carried out. Provide a step-by-step explanation of how you conducted the experiment. Include drawings or photographs to help clarify your procedures.
5. **Data/Results** – Present data tables and graphs that show the outcome of your experiment
6. **Conclusion** – compare your results to your hypothesis. Did your findings support your hypothesis or not?

**Miscellaneous:** Be sure to include name(s)  
Include photographs or drawings  
This is a visual way to communicate to others so take your time and do a good job.



# Science Fair Websites

1. **California State Science Fair:** Read about this science fair which has been going on since 1952! You can learn how to enter, get help with your own project, or see a directory of past projects. <http://www.usc.edu/CSSF/>
2. **Cyber Fair:** See sample fair projects, look through other student's examples, and see the steps involved in judging projects. <http://www.isd77.k12.mn.us/resources/cf/welcome.html>
3. **Experimental Science Projects:** Outlines steps in preparing a project (complete with an ideas list), and suggests the best ways to prepare one at different grade levels. <http://www.isd77.k12.mn.us/resources/cf/SciProjIntro.html>
4. **Science Buddies:** Use the topic selection wizard to help you figure out what science projects interest you most. Once you have a topic, get help doing research, setting up the experiments, and completing them. <http://www.sciencebuddies.org/>
5. **Science Fair Central:** Includes cool project ideas, a science fair handbook, reviews of students' experiments, and more from Discovery Channel School. <http://school.discovery.com/sciencefaircentral/>
6. **Science Fair Project Resource Guide:** Samples, ideas, magazines, resources, and more. Includes a list of sites that explain the Scientific Method. <http://www.ipl.org/div/kidspace/projectguide/>
7. **Scientific Method:** Describes the five steps of the Scientific Method that are helpful when creating a science fair project. Includes examples of wording and sample projects to explain certain steps. <http://school.discoveryeducation.com/sciencefaircentral/Getting-Started/Investigation.html>
8. **Super Science Fair Projects:** Guide to projects, topics, experiments, and tips for successfully completing a science project, including the six steps of the Scientific Method. <http://www.super-science-fair-projects.com/>
9. **What Makes a Good Science Fair Project?:** Short guide written by a group of experienced judges for the California State Science Fair. [http://www.usc.edu/CSSF/Resources/Good\\_Project.html](http://www.usc.edu/CSSF/Resources/Good_Project.html)

## **Your Science Fair Oral Presentation**

A lot of kids are scared of speaking in public or to a teacher/judge. Just imagine they are a fellow scientist who just wants you to share what you learned.

Relax, smile, and have fun. Remember, you are the expert and you had fun doing the project. But if you are a little nervous, we listed some things that you need to do during the presentation.

### Helpful Hints:

- Look sharp, feel sharp, and you will be sharp. Dress nice that day, be polite, and speak clearly. You will show that you have confidence. Don't forget to look at your audience.
- Introduce yourself. Point to the title of your display. Tell your audience why you chose to study this.
- State your problem that you studied (your question.) Tell them about your hypothesis (what you thought might happen.)
- Talk about what you learned while researching your topic.
- Talk about the sources (books, websites, and interviews) that helped you understand your topic.
- Tell about your project and explain the steps you took to conduct your experiment. Be sure to mention all the materials involved and point out the pictures that you may have taken.
- If it applies, be sure to show them that you tested your experiment at least 3 times.
- Show them all of the cool graphic organizers that you made, like your tables and charts. Remember to point out the labeled parts of your graph or table to show that you know what it represents.
- Be sure to explain what your data means. Make sure you can read your graphs and tables. Let them know if you were surprised by the results, or if you know what would happen because you studied about it.
- Make sure you sound like an expert on your topic. Always use the appropriate vocabulary especially by using words from the Scientific Method, like: Problem, Hypothesis, Procedure, Results, and Conclusions.



INDIVIDUAL

SCIENCE FAIR REGISTRATION FORM

**DUE NO LATER THAN  
FRIDAY, SEPTEMBER 19, 2011**

PLEASE RETURN YOUR FORM TO YOUR TEACHER  
ONLY STUDENTS WHO REGISTER ON TIME WILL BE PERMITTED TO PARTICIPATE IN THE SCIENCE FAIR

**Students must submit a project as part of their graded classroom work.  
It is a Science class requirement.**

GRADE LEVEL \_\_\_\_\_

HOMEROOM TEACHER \_\_\_\_\_

\*STUDENT NAME \_\_\_\_\_

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

DESCRIPTION \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ I need an electrical outlet

\*All parents must sign and approve their child's Science Fair Project.

I acknowledge that I have received and reviewed the materials for the Science Fair and I am aware that my child is required to complete a Science Project.

I have approved and given permission for my child \_\_\_\_\_  
to participate in this year's Science Fair.

Student's Signature \_\_\_\_\_ Date \_\_\_\_\_

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

Teacher's Approval of Project

Please Conference with your Teacher about Project

Teacher's Signature \_\_\_\_\_ Date \_\_\_\_\_

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

# PROJECT SUMMARY WORKSHEET

Due Date: \_\_\_\_\_

Topic: \_\_\_\_\_

**Question (Statement of Purpose)**  
*(Written as a Question)*

**Hypothesis:**  
*If....., then I think*

**Materials I will need:**

**Procedures:**  
*(Detailed Steps)*

Resource #1

You must have 3 Resources



**Resource:**

Type of Resource: \_\_\_\_\_

Website: <http://> \_\_\_\_\_

Author: \_\_\_\_\_

Title: \_\_\_\_\_

Publishing Company: \_\_\_\_\_

Location of the Publishing Company: \_\_\_\_\_

Date of Publication: \_\_\_\_\_

**Information found in your own words:**

(Must be at least one paragraph summary.)

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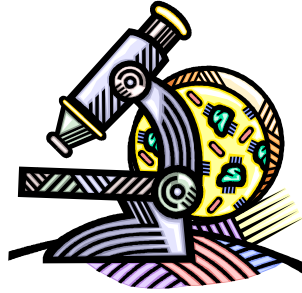
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Resource #2

You must have 3 Resources



**Resource:**

Type of Resource: \_\_\_\_\_

Website: <http://>\_\_\_\_\_

Author: \_\_\_\_\_

Title: \_\_\_\_\_

Publishing Company: \_\_\_\_\_

Location of the Publishing Company: \_\_\_\_\_

Date of Publication: \_\_\_\_\_

**Information found in your own words:**

(Must be at least one paragraph summary.)

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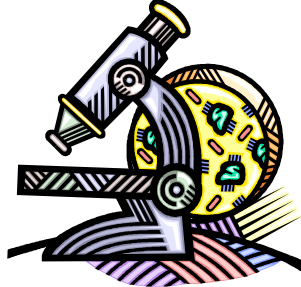
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Resource #3

You must have 3 Resources



**Resource:**

Type of Resource: \_\_\_\_\_

Website: <http://>\_\_\_\_\_

Author: \_\_\_\_\_

Title: \_\_\_\_\_

Publishing Company: \_\_\_\_\_

Location of the Publishing Company: \_\_\_\_\_

Date of Publication: \_\_\_\_\_

**Information found in your own words:**

(Must be at least one paragraph summary.)

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1<sup>st</sup> Quarter  
Student Checklist

Due Date	Component	Completed
Sept 19 <sup>th</sup>	Permission/Participation Slip – Signed and Returned	
Sept 19 <sup>th</sup>	<b>Topic:</b> Choose a topic. <i>Be sure it interests you. Don't pick one because you think it will be easy. Talk it over with your parents and when you have decided. Do not change your topic later. (Included in Participation Slip)</i>	
	<b>Purpose:</b> State your purpose as a question or a statement. <i>What is it you that you want to find out by doing this project? (Included in Project Summary Worksheet)</i>	
	<b>Hypothesis:</b> Form a hypothesis. <i>What do you think is going to happen? Based on what you know or found out, what do you think the results of your experiment will be? After doing the experiment, it may turn out that your guess was wrong. It's okay if this happens. (Included in Project Summary Worksheet)</i>	
	<b>Materials:</b> List all materials that will be used in your experiment. <i>Include exact quantities for each item used. (Included in Project Summary Worksheet)</i>	
	<b>Procedures:</b> List and describe steps taken to complete the project. <i>Presented in chronological order or numbered order. (Included in Project Summary Worksheet)</i>	
	<b>Research:</b> <i>Look at any books that might help you, make observations by simply looking at things, talk to people, and find out as much as possible about your topic. Write down any ideas you have and where you got them. (Included in Resource Form – You must have THREE!)</i>	
	<b>Deadlines:</b> All deadlines to turn in components were met.	

Note: The Project Summary Worksheet can be accepted for the 1<sup>st</sup> Quarter. It does not need to be typewritten. If more space is needed on the Project Summary Worksheet, please use and staple extra paper to the original sheet.

## 2nd Quarter Student Checklist Written Report

Student: \_\_\_\_\_

Due Date	Component	Completed
	<b>Title Page:</b> The first page in the report should include the title of the project as well as the name and grade of the student.	
	<b>Acknowledgement Page:</b> The second page in the report should thank all individuals who assisted in the project.	
	<b>Table of Contents:</b> This page provides the reader with a list of the different parts of the project and the page number on which each section can be found.	
	<b>The Purpose:</b> State your purpose as a question or a statement. <i>What is it you that you want to find out by doing this project?</i>	
	<b>Hypothesis:</b> State your hypothesis. <i>What do you think is going to happen? Based on what you know or found out, what do you think the results of your experiment will be? After doing the experiment, it may turn out that your guess was wrong. It's okay if this happens.</i>	
	<b>Research:</b> This is part of the report that contains all the background information the student collected about the chosen topic. All gathered information should be summarized and presented in this section. It should be written in the student's own words and not copied from the source.	
	<b>Materials:</b> List all materials that were used in your experiment. <i>Include exact quantities for each item used.</i>	
	<b>Procedures of Investigation:</b> List and describe steps taken to complete the project. <i>Presented in chronological order or numbered order.</i>	
	<b>Results:</b> Tell what happened when you did the experiment. Show what happened by making a chart, graph, or table. Include the date, the time, and any other useful information. Write all measurements clearly.	
	<b>Conclusion:</b> This is a brief statement explaining why a project turned out the way it did. Students should explain why the events they observed occurred. The conclusion should tell whether the hypothesis was proven or not proven. It should offer an answer to the student's original purpose.	
	<b>Reference Page:</b> In alphabetical order, list all the resources that you used to research your project. Correct format was used.	

	<b>Conventions:</b> Proper use of spelling, grammar, punctuation, and capitalization. MUST be typed.	
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## 3<sup>rd</sup>/4<sup>th</sup> Quarter Student Checklist

Student: \_\_\_\_\_

### Display Board

Due Date	Component	Completed
	<b>Title:</b> <i>Does the title catch people's attention and is it large enough to be read from across the room?</i>	
	<b>Purpose</b>	
	<b>Hypothesis</b>	
	<b>Procedures of Investigation</b>	
	<b>Materials</b>	
	<b>Results/ Graphs/ Charts:</b> <i>Did the student use pictures and diagrams to effectively convey information about the project?</i>	
	<b>Conclusion</b>	
	<b>Conventions:</b> <i>Proper use of spelling, grammar, punctuation, and capitalization on all elements on the display board.</i>	
	<b>Neatness</b>	
	<b>Organization:</b> <i>Are the sections on the display board organized like a news paper so they are easy to follow?</i>	

### Oral Presentation

Due Date	Component	Completed
	<b>Introduction:</b> <i>Student introduces himself and gives the title of the project.</i>	
	<b>Statement of Purpose/ Hypothesis</b>	
	<b>Explanation of Procedure</b>	
	<b>Explanation of Results/Charts and Graphs</b>	
	<b>Conclusion</b>	
	<b>Good Posture and Eye Contact</b>	
	<b>Speaks Clearly</b>	



## NOTES