

**Science Fair Schedule (Dates are tentative and may be moved back based on the needs of the class)**

Assignment	Description	Due Date	Points
Topic/Question	Choose a topic and Question that interests you. Your topic/question must be approved by Mrs. Suter or Ms. Palmer and must fit into one of the 17 approved categories. We can only have two projects in each category; this will be decided on a first come first serve basis. So be prepared with a backup question just in case.	9/13	10
Background Research Questions	Complete the background research questions worksheet with at least one question in each category and a total of 12 questions that you will answer with your question.	9/27	12
Research Paper/Bibliography	Research paper that answers your research questions and includes a bibliography. You need to have at least 5 sources and 3 should be offline sources (books, encyclopedias etc.)	10/16	110
Variables/Hypothesis	Complete variables and hypothesis worksheet.	11/1	16
Materials/Procedures	Complete, detailed list of all materials you will need for your project. Step by step procedures so that someone else could repeat your experiment.	11/8	20
Research Plan	Complete research plan paperwork.	11/15	5
Experiment	Conduct your experiment, doing at least three trials. Your experiment needs to be completed by the due date of the Data analysis, but I will ask to see some data before so I know you are working.	12/13 1/17	20
Data analysis/Graphs	Analyze your experiment data and summarize your findings.	1/17	20
Conclusions	Explains your results and how they relate to your hypothesis. Gives ideas for further study.	1/17	10
Final Report	A compilation of all of the above assignments in a set order. Also includes an abstract.	1/24	100
Display Board	Displays all of the above information on a board to be displayed at the school and regional science fairs.	1/31	90

## **Category Descriptions**

The categories below are identical to Intel ISEF categories. Many projects could fit into more than one category. Please choose the category that most accurately describes and who should judge your project.

### **Animal Science**

Study of animals and animal life, including the study of the structure, physiology, development, and classification of animals. Animal ecology, physiology, animal husbandry, cytology, histology, entomology, ornithology, herpetology, etc

### **Behavioral and Social Sciences**

The science or study of the thought processes and behavior of humans and other animals in their interactions with the environment, studied through observational and experimental methods.

### **Biochemistry**

The study of the chemical substances and vital processes occurring in living organisms, the processes by which these substances enter into, or are formed in, the organisms and react with each other and the environment.

### **Cellular and Molecular Biology**

The study of the organization and formation of cells.

### **Chemistry**

The science of the composition, structure, properties, and reactions of matter, especially of atomic and molecular systems.

### **Computer Science**

The study of information processes, the structures and procedures that represent processes, and their implementation in information processing systems. It includes systems analysis and design, application and system software design, and programming.

### **Earth and Planetary Science**

The study of sciences related to the planet Earth (Geology, mineralogy, physiographic, oceanography, meteorology, climatology, speleology, seismology, geography, and atmospheric sciences, etc.)

## **Engineering: Electrical and Mechanical**

The application of scientific and mathematical principles to practical ends such as the design, manufacture, and operation of efficient and economical structures, processes, and systems.

## **Engineering: Materials and Bioengineering**

The application of scientific and mathematical principles to practical ends such as the design, manufacture, and operation of efficient and economical machines and systems.

## **Energy & Transportation**

The study of renewable energy sources, energy efficiency, clean transport, and alternative fuels.

## **Environmental Management**

The study of managing mans' interaction with the environment.

## **Environmental Sciences**

The analysis of existing conditions of the environment.

## **Mathematical Sciences**

The study of the measurement, properties, and relationships of quantities and sets, using numbers and symbols. The deductive study of numbers, geometry, and various abstract constructs, or structures.

## **Medicine and Health Sciences**

The science of diagnosing, treating, or preventing disease and other damage to the body or mind.

## **Microbiology**

The study of microorganisms, including bacteria, viruses, prokaryotes, simple eukaryotes, and of antibiotic substances.

## **Physics and Astronomy**

Physics is the science of matter and energy and of interactions between the two. Astronomy is the study of anything in the universe beyond the Earth.

## **Plant Sciences**

The study of plant life. Ecology, agronomy, horticulture, forestry, plant taxonomy, physiology, pathology, plant genetics, hydroponics, algae, etc.



# Science Project Proposal Form

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

The question I plan to investigate in my experiment (*please phrase as a question*):

## Science Fair Project Question Checklist

1. Your teacher may put some restrictions on projects. Have you met your teacher's requirements?	Yes / No
2. Is the topic interesting enough to read about, then work on for the next couple months?	Yes / No
3. Can you find at least 3 sources of written information on the subject?	Yes / No
4. Can you measure changes to the important factors (variables) using a number that represents a quantity such as a count, percentage, length, width, weight, voltage, velocity, energy, time, etc.? Or, just as good, are you measuring a factor (variable) that is simply present or not present? For example, <ul style="list-style-type: none"> <li>• Lights <b>ON</b> in one trial, then lights <b>OFF</b> in another trial</li> <li>• <b>USE</b> fertilizer in one trial, then <b>DON'T USE</b> fertilizer in another trial</li> </ul>	Yes / No
5. Can you design a "fair test" to answer your question? In other words, can you change only one factor (variable) at a time, and control other factors that might influence your experiment, so that they do not interfere?	Yes / No
6. Is your experiment safe to perform?	Yes / No
7. Do you have all the materials and equipment you need for your science fair project, or will you be able to obtain them quickly and at a very low cost?	Yes / No
8. Do you have enough time to do your experiment more than once before the science fair?	Yes / No
9. If you are planning to enter a science fair outside of your school: <ul style="list-style-type: none"> <li>• Does your project meet all the rules and requirements for the science fair?</li> </ul>	Yes / No
<ul style="list-style-type: none"> <li>• Have you checked to see if your science fair project will require approval from the fair before you begin experimentation?</li> </ul>	Yes / No

**I have discussed the project idea and the checklist with my parent(s) and I am willing to commit to following through on this project.**

\_\_\_\_\_  
Student Signature

\_\_\_\_\_  
Date

**I have discussed the project idea and the checklist with my student and I believe he or she can follow through with this project.**

\_\_\_\_\_  
Parent Signature

\_\_\_\_\_  
Date



# Background Research Plan Worksheet

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

1. What is the **question** you are going try to answer with an experiment? \_\_\_\_\_

2. List the **keywords** and phrases from your question and the topic in general. (Hint: Use an encyclopedia to help you)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. Now use your keywords to build some **questions to guide your background research**. Develop at least two or three from each "question word." Don't worry about whether you already know the answer to the question—you'll find the answers when you do your background research. And don't forget to "network" with knowledgeable adults who can help guide you toward good materials!

<b>Question Word</b>	<b>Possible Questions (you can think of others)</b>	<b>Substitute your keywords (or variations of your keywords) for the blanks in the previous column. Write down the relevant questions and use them to guide your background research.</b>
Why	Why does _____ happen? Why does _____ ? Why _____ ?	
How	How does _____ happen? How does _____ work? How does _____ detect _____ ? How does one measure _____ ? How do we use _____ ? How _____ ?	

Question Word	Possible Questions (you can think of others)	Substitute your keywords (or variations of your keywords) for the blanks in the previous column. Write down the relevant questions and use them to guide your background research.
Who	Who needs _____? Who discovered _____? Who invented _____? Who _____?	
What	What causes _____ to increase/decrease? What is _____ made of? What are the characteristics of _____? What is the relationship between _____ and _____? What do we use _____ for? What _____?	
When	When does _____ cause _____? When was _____ discovered? When _____?	
Where	Where does _____ occur? Where does _____ get used? Where _____?	

4. To analyze the results from experiments you might need to know some **key formulas or equations**. Think about your own experiment and write down any step or task that requires a formula or equation. Don't worry about whether you already know what the formula or equation is—you'll find the actual equation when you do your background research.

List steps or tasks that may require a formula or equation:

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## How to Format Your Research Paper

This table describes how to format your research paper using either the MLA or APA guidelines. Be sure to follow any additional instructions that your teacher provides.

	MLA Guidelines	APA Guidelines
Paper	Standard size (8.5 x 11" in the U.S.)	
Page Margins	1" on all sides (top, bottom, left, right)	1" on all sides (top, bottom, left, right)
Font	12-pt. easily readable (e.g., Times Roman)	12-pt. Times Roman or Courier. For figures, however, use a sans serif font such as Arial.
Spacing	Double-spaced throughout, including captions and bibliography	Double-spaced
Alignment of Text	Flush left (with an uneven right margin)	Flush left (with an uneven right margin)
Paragraph Indentation	1/2" (or five spaces)	5-7 spaces
End of Sentence	Leave one space after a period unless your teacher prefers two.	Leave one space after a period unless your teacher prefers two.
Page Numbers	On every page, in the upper right margin, 1/2" from the top and flush with the right margin put your last name followed by the page number.	On every page (except Figures), in the upper right margin, 1/2" from the top and flush with the right margin, two or three words of the paper title (this is called the <i>running head</i> ) appear five spaces to the left of the page number, beginning with the title page.
Title Page	<p>Only if your teacher requests one. Instead, on the first page, upper left corner place on separate lines, double-spaced:</p> <ul style="list-style-type: none"> <li>• Your name</li> <li>• Teacher's name</li> <li>• Course name or number</li> <li>• Date</li> </ul> <p>Underneath, center the title using regular title capitalization rules and no underline. Start the report immediately below the title.</p>	<p>The title page is always the first page.</p> <p>On the line below the page number, the running head is typed flush left (all uppercase) following the words "Running head:"</p> <p>Below the running head, the following are centered on their own lines, using upper and lower case:</p> <ul style="list-style-type: none"> <li>• Paper title</li> <li>• Your name</li> <li>• Your school</li> </ul>
Section Headings		<p>Top level headings should be centered on the page, using upper and lower case.</p> <p>Second level headings should be flush left, italicized, using upper and lower case.</p>

	MLA Guidelines	APA Guidelines
Tables & Illustrations	<p>Place tables and illustrations as close as possible to the text they refer to.</p> <p>A table is labeled <i>Table</i> and given a number (e.g., Table 1). The table label and caption or title appear above the table, capitalized like a title, flush left. Sources and notes appear below the table, flush left.</p> <p>Photos, graphs, charts or diagrams should be labeled <i>Figure</i> (usually abbreviate <i>Fig.</i>), and assigned a number (e.g., Fig. 1). The label, title, and source (if any) appear underneath the figure, flush left, in a continuous block of text rather than one element per line.</p>	<p>Unless your teacher tells you otherwise, tables and illustrations appear at the end of the paper.</p> <p>Each table begins on a separate page with the label Table 1 (etc.) typed flush left on the first line below the page number. Double-space and type the table title flush left (italicized using uppercase and lowercase letters).</p> <p>Figures Captions appear on the last numbered page of the paper. In this case the label <i>Figure 1</i> (etc.) is italicized and the caption itself is not. The caption uses regular sentence capitalization. The figures themselves follow, one per page.</p>
Order of Major Sections		<p>Each of these sections (if present) begins on a new page:</p> <ul style="list-style-type: none"> <li>• Title page</li> <li>• Abstract</li> <li>• Body</li> <li>• References</li> <li>• Appendixes</li> <li>• Footnotes</li> <li>• Tables</li> <li>• Figure Captions</li> <li>• Figures</li> </ul>
Binding	Most teachers prefer a simple paper clip or staple. Follow your teacher's request.	
Additional Information	The Purdue University Online Writing Lab (OWL) MLA Style Guide can be found at: <a href="http://owl.english.purdue.edu/owl/resource/557/01/">http://owl.english.purdue.edu/owl/resource/557/01/</a> .	The Purdue University Online Writing Lab (OWL) APA Style Guide can be found at: <a href="http://owl.english.purdue.edu/owl/resource/560/01/">http://owl.english.purdue.edu/owl/resource/560/01/</a> .





# Grading Rubric: Science Project Research Paper

<b>Name:</b>	<b>Date:</b>
<b>0 = No Evidence    1 = Some Evidence    2 = Clearly Evident</b>	
Have all important terms and concepts for this project been defined in the research paper?	<b>0    1    2</b>
Does the research provide enough background to make a prediction of what will occur in the experiment?	<b>0    1    2</b>
Does the research present enough information to understand why the experimental results occur?	<b>0    1    2</b>
Does the research cover the following: <ul style="list-style-type: none"> <li>• currently accepted theories, facts, and data,</li> <li>• key discoveries and early researchers</li> </ul>	<b>0    1    2</b>
Has the student included all relevant math (ie. formulas that help to describe the experiment)?	<b>0    1    2</b>
Has the information copied from other sources been referenced and have all copied phrases, sentences, or paragraphs been put in quotation marks?	<b>0    1    2</b>
Has every fact or picture in the research paper been followed by a citation identifying the source of the material?	<b>0    1    2</b>
Has the student included all key components of the research paper (ie. Title page, research report, bibliography,...)	<b>0    1    2</b>
Has the student used the proper capitalization and punctuation?	<b>0    1    2</b>
Has the student used the proper spelling and grammar?	<b>0    1    2</b>
<b>Total Score:</b>	<u>      </u> /20
<b>(To convert to 100 points scale: Total Score x 5 )</b>	
<b>Comments:</b>	

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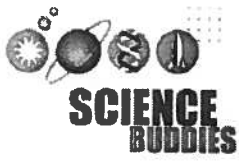
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# Research Paper Checklist

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

<input type="checkbox"/>	Have you defined all important terms?
<input type="checkbox"/>	Have you clearly answered all your research questions?
<input type="checkbox"/>	Does your background research enable you to make a prediction of what will occur in your experiment?
<input type="checkbox"/>	Will you have the knowledge to understand what causes the behavior you observe?
	Does your research include the following:
<input type="checkbox"/>	- Currently accepted theories, facts, and data
<input type="checkbox"/>	- Relevant mathematics/equations (if applicable)
<input type="checkbox"/>	- Key discoveries and early researchers
<input type="checkbox"/>	Have you referenced all information copied from another source and put any phrases, sentences, or paragraphs you copied in quotation marks?
<input type="checkbox"/>	Is every fact or picture in your research paper followed by a citation telling the reader where you found the information?
	Does your research paper include:
<input type="checkbox"/>	- A title page
<input type="checkbox"/>	- Your report
<input type="checkbox"/>	- Bibliography
<input type="checkbox"/>	Have you used the proper capitalization and punctuation?
<input type="checkbox"/>	Have you checked your grammar and spelling?



# Bibliography Worksheet

Note: You won't fill in every item depending on the type of source. Name: \_\_\_\_\_

This source is a: Book Magazine Newspaper Website Other _____		
Author's Last Name		First Name Middle Initial
Date Published	Publication/Website Title	
Title of Article (periodicals, encyclopedias, websites)		
Place Published (books only)	Publisher (books only)	Editor (if applicable)
Edition (if applicable)	Volume Number (periodicals or encyclopedias)	Page Number(s)
Website is a Company Organization Government Newspaper/Magazine Other _____		
The URL is http:// (websites only)		Last Date of Access (websites only)
This source is a: Book Magazine Newspaper Website Other _____		
Author's Last Name		First Name Middle Initial
Date Published	Publication/Website Title	
Title of Article (periodicals, encyclopedias, websites)		
Place Published (books only)	Publisher (books only)	Editor (if applicable)
Edition (if applicable)	Volume Number (periodicals or encyclopedias)	Page Number(s)
Website is a Company Organization Government Newspaper/Magazine Other _____		
The URL is http:// (websites only)		Last Date of Access (websites only)
This source is a: Book Magazine Newspaper Website Other _____		
Author's Last Name		First Name Middle Initial
Date Published	Publication/Website Title	
Title of Article (periodicals, encyclopedias, websites)		
Place Published (books only)	Publisher (books only)	Editor (if applicable)
Edition (if applicable)	Volume Number (periodicals or encyclopedias)	Page Number(s)
Website is a Company Organization Government Newspaper/Magazine Other _____		
The URL is http:// (websites only)		Last Date of Access (websites only)

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# Grading Rubric: Bibliography

<b>Name:</b>		<b>Date:</b>	
<b>0 = No Evidence    1 = Some Evidence    2 = Clearly Evident</b>			
Are there at least 3 written sources listed (NOT including Web pages)?	<b>0</b>	<b>1</b>	<b>2</b>
Is there a variety of types of sources, including scholarly journals and books?	<b>0</b>	<b>1</b>	<b>2</b>
Are the sources of information relevant to the project topic and do they cover the critical terms and concepts for the project?	<b>0</b>	<b>1</b>	<b>2</b>
Does each of the sources include all of the information necessary to properly identify the source (author's name, the title, the date, and where it was published)?	<b>0</b>	<b>1</b>	<b>2</b>
Has the proper format been followed for each of the sources?	<b>0</b>	<b>1</b>	<b>2</b>
<b>Total Score:</b>			<u>        </u> /10
(To convert to 100 points scale: Total Score x 10 )			
<b>Comments:</b>			

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# Variables & Hypothesis Worksheet

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

<b>Variables</b> <i>(Fill in the table with the appropriate information from your own experiment)</i>		
<b>Independent Variable</b> <i>(What will you be changing in the experiment. Note: There should only be one item listed here)</i>	<b>Dependent Variables</b> <i>(What will you be measuring or observing)</i>	<b>Controlled Variables</b> <i>(What will you be keeping the same during the experiment)</i>

<b>Your Hypothesis</b> <i>(Fill in the blanks with the appropriate information from your own experiment.)</i>
<p><b>If</b> [I do this] _____</p> <p>_____ ,</p> <p><b>then</b></p> <p>[this] _____</p> <p>_____</p> <p><b>will happen.</b></p>



# Grading Rubric: Variables & Hypothesis

<b>Name:</b>		<b>Date:</b>	
<b>0 = No Evidence    1 = Some Evidence    2 = Clearly Evident</b>			
Are the independent variable and dependent variable(s) measurable?	<b>0</b>	<b>1</b>	<b>2</b>
Can the student change the independent variable during the experiment?	<b>0</b>	<b>1</b>	<b>2</b>
Has the student identified all relevant dependent variables, and are they all caused by and dependent on the independent variable?	<b>0</b>	<b>1</b>	<b>2</b>
Has the student identified all relevant controlled variables?	<b>0</b>	<b>1</b>	<b>2</b>
Can all controlled variables be held at a steady value during the experiment?	<b>0</b>	<b>1</b>	<b>2</b>
Is the hypothesis based on information contained in the Research Paper?	<b>0</b>	<b>1</b>	<b>2</b>
Does the hypothesis include the independent and dependent variables?	<b>0</b>	<b>1</b>	<b>2</b>
Has the hypothesis been worded in such a way that it can be tested in the experiment?	<b>0</b>	<b>1</b>	<b>2</b>
<b>Total Score:</b> (To convert to 100 points scale: Total Score x 6.25 )			<u>        </u> /16
<b>Comments:</b>			

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# Grading Rubric: Materials & Procedures

<b>Name:</b>		<b>Date:</b>	
<b>0 = No Evidence    1 = Some Evidence    2 = Clearly Evident</b>			
Are all necessary materials/equipment listed in the Materials List?	<b>0</b>	<b>1</b>	<b>2</b>
Have the materials been described in sufficient detail?	<b>0</b>	<b>1</b>	<b>2</b>
Have exact quantities been listed for items where more than one is needed?	<b>0</b>	<b>1</b>	<b>2</b>
Has a description and size for all experimental and control groups been included in the Procedures List?	<b>0</b>	<b>1</b>	<b>2</b>
Is there a step-by-step list of all procedures?	<b>0</b>	<b>1</b>	<b>2</b>
Are the procedures listed in a clear, logical order, like a recipe?	<b>0</b>	<b>1</b>	<b>2</b>
Is there a description of the procedure to change the independent variable and how to measure that change?	<b>0</b>	<b>1</b>	<b>2</b>
Is there an explanation of the procedure to measure the resulting change in the dependent variable or variables?	<b>0</b>	<b>1</b>	<b>2</b>
Is there an explanation of how the controlled variables will be maintained at a constant value?	<b>0</b>	<b>1</b>	<b>2</b>
Does the procedure detail the number of times to repeat the experiment (should be at least three times), and is that number of repetitions sufficient to provide reliable data?	<b>0</b>	<b>1</b>	<b>2</b>
<b>Total Score:</b> (To convert to 100 points scale: Total Score x 5 )		<u>          </u> /20	
<b>Comments:</b>			

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# Research Plan Instructions

A complete research plan is required and must accompany Checklist for Student (1A)

Provide a typed research plan and attach to Student Checklist (1A). Please include your name on each page.

The research plan for ALL projects is to include the following:

**A. Question or Problem being addressed**

**B. Goals/Expected Outcomes/Hypotheses**

**C. Description in detail of method or procedures** (The following are important and key items that should be included when formulating ANY AND ALL research plans.)

- **Procedures:** Detail all procedures and experimental design to be used for data collection
- **Risk and Safety:** Identify any potential risks and safety precautions to be taken.
- **Data Analysis:** Describe the procedures you will use to analyze the data/results that answer research questions or hypotheses

**D. Bibliography:** List at least five (5) major references (e.g. science journal articles, books, internet sites) from your literature review. If you plan to use vertebrate animals, one of these references must be an animal care reference.

- Choose one style and use it consistently to reference the literature used in the research plan
- Guidelines can be found in the Student Handbook

Items 1-4 below are subject-specific guidelines for additional items to be included in your research plan as applicable:

**1. Human participants research:**

- **Participants.** Describe who will participate in your study (age range, gender, racial/ethnic composition). Identify any vulnerable populations (minors, pregnant women, prisoners, mentally disabled or economically disadvantaged).
- **Recruitment.** Where will you find your participants? How will they be invited to participate?
- **Methods.** What will participants be asked to do? Will you use any surveys, questionnaires or tests? What is the frequency and length of time involved for each subject?
- **Risk Assessment**
  - **Risks.** What are the risks or potential discomforts (physical, psychological, time involved, social, legal, etc.) to participants? How will you minimize the risks?
  - **Benefits.** List any benefits to society or each participant.
- **Protection of Privacy.** Will any identifiable information (e.g., names, telephone numbers, birth dates, email addresses) be collected? Will data be confidential or anonymous? If anonymous, describe how the data will be collected anonymously. If not anonymous, what procedures are in place for safeguarding confidentiality? Where will the data be stored? Who will have access to the data? What will you do with the data at the end of the study?
- **Informed Consent Process.** Describe how you will inform participants about the purpose of the study, what they will be asked to do, that their participation is voluntary and they have the right to stop at any time.

**2. Vertebrate animal research:**

- Briefly discuss potential **ALTERNATIVES** to vertebrate animal use and present a detailed justification for use of vertebrate animals
- Explain potential impact or contribution this research may have
- Detail all procedures to be used
  - Include methods used to minimize potential discomfort, distress, pain and injury to the animals during the course of experimentation
  - Detailed chemical concentrations and drug dosages
- Detail animal numbers, species, strain, sex, age, source, etc.
  - Include justification of the numbers planned for the research
- Describe housing and oversight of daily care
- Discuss disposition of the animals at the termination of the study

**3. Potentially Hazardous Biological Agents:**

- Describe Biosafety Level Assessment process and resultant BSL determination
- Give source of agent, source of specific cell line, etc.
- Detail safety precautions
- Discuss methods of disposal

**4. Hazardous Chemicals, Activities & Devices:**

- Describe Risk Assessment process and results
- Detail chemical concentrations and drug dosages
- Describe safety precautions and procedures to minimize risk
- Discuss methods of disposal





# Grading Rubric: Data Tables & Graphs

<b>Name:</b>	<b>Date:</b>
<b>0 = No Evidence    1 = Some Evidence    2 = Clearly Evident</b>	
Is there sufficient data to know whether the hypothesis is correct?	<b>0    1    2</b>
Has the data been summarized with an average, if appropriate? Are all calculations (if any) correct?	<b>0    1    2</b>
Is the chart labeled properly, clearly identifying the data types collected and the units of measurement for each?	<b>0    1    2</b>
Has the appropriate graph type been selected to display the data?	<b>0    1    2</b>
Does the graph have a title and does the title clearly describe what the data is about?	<b>0    1    2</b>
Is the independent variable on the x-axis and the dependent variable on the y-axis?	<b>0    1    2</b>
Are the axes properly labeled, accurately describing the data being presented including units of measurement?	<b>0    1    2</b>
Is the data plotted correctly and clearly on the graph?	<b>0    1    2</b>
Does the graph have the proper scale (the correct high and low values on the axes)?	<b>0    1    2</b>
Has the proper spelling and capitalization been used?	<b>0    1    2</b>
<b>Total Score:</b> (To convert to 100 points scale: Total Score x 5)	<u>          </u> /20
<b>Comments:</b>	

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2007/11/07



# Grading Rubric: Conclusions

<b>Name:</b>		<b>Date:</b>	
<b>0 = No Evidence    1 = Some Evidence    2 = Clearly Evident</b>			
Does the student summarize the results and use it to support the findings?	<b>0</b>	<b>1</b>	<b>2</b>
Do the conclusions state that the student proved or disproved his/her hypothesis?	<b>0</b>	<b>1</b>	<b>2</b>
Does the student summarize and evaluate the experimental procedure, making comments about its success and effectiveness?	<b>0</b>	<b>1</b>	<b>2</b>
Does the student suggest changes in the experimental procedure and/or possibilities for further study?	<b>0</b>	<b>1</b>	<b>2</b>
Did the student use the proper spelling, punctuation, and capitalization?	<b>0</b>	<b>1</b>	<b>2</b>
<b>Total Score:</b>		<u>          </u> /10	
(To convert to 100 points scale: Total Score x 10 )			
<b>Comments:</b>			

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# Grading Rubric: Final Report

<b>Name:</b>	<b>Date:</b>
<b>0 = No Evidence    1 = Some Evidence    2 = Clearly Evident</b>	
Does the final report include the following elements:	
o Title page	<b>0    1    2</b>
o Abstract	<b>0    1    2</b>
o Table of Contents	<b>0    1    2</b>
o Question, Variables, and Hypothesis	<b>0    1    2</b>
o Background Research	<b>0    1    2</b>
o Materials List	<b>0    1    2</b>
o Experimental Procedures	<b>0    1    2</b>
o Data analysis and discussion (including data table and graph(s))	<b>0    1    2</b>
o Conclusions	<b>0    1    2</b>
o Acknowledgements	<b>0    1    2</b>
o Bibliography	<b>0    1    2</b>
Does the abstract include a short summary of the hypothesis, materials & procedures, results, and conclusions?	<b>0    1    2</b>
Did the student use the proper punctuation, capitalization, and spelling?	<b>0    1    2</b>
<b>Total Score:</b> <b>(To convert to 100 points scale: Total Score x 3.85 )</b>	<u>      /26      </u>
<b>Comments:</b>	



# Grading Rubric: Display Board

<b>Name:</b>	<b>Date:</b>
<b>0 = No Evidence    1 = Some Evidence    2 = Clearly Evident</b>	
Does the display board include the following sections:	
○ Title	0   1   2
○ Abstract	0   1   2
○ Question	0   1   2
○ Variables and hypothesis	0   1   2
○ Background research	0   1   2
○ Materials list	0   1   2
○ Experimental procedure	0   1   2
○ Data analysis and discussion including data chart(s) & graph(s)	0   1   2
○ Conclusions (including ideas for future research)	0   1   2
<del>○ Acknowledgements</del>	<del>0   1   2</del>
<del>○ Bibliography</del>	<del>0   1   2</del>
Are the sections on the display board organized like a newspaper so that they are easy to follow?	0   1   2
Is the text font large enough to be read easily (at least 16 points)?	0   1   2
Does the title catch people's attention, and is the title font large enough to be read from across the room?	0   1   2
Did the student use pictures and diagrams to effectively convey information about the science fair project?	0   1   2
Is the display board neat?	0   1   2
Has the proper spelling and capitalization been used on all elements on the display board?	0   1   2
<b>Total Score:</b>	<u>134</u>
(To convert to <sup>90</sup> 100 points scale: Total Score x <del>2.94</del> <sub>3</sub> )	<u>30</u>