

Science Fair Information Packet

Junior High 2018-2019

Student Name:

Grade



NADABURG UNIFIED SCHOOL DISTRICT #81

"Quality Education: Every student! Every day!"

Nadaburg Elementary School

"Discovering the Gifts of *Every* Child!"

Curtis P. McCandlish

Proud Principal



Our Vision is to provide a quality education to every student, every day.

Our Mission is to graduate all students with the knowledge, skills, attitudes and ethics necessary to succeed in the colleges or careers of their choice.

October 24, 2018

Dear Parents,

In order for your child to be successful in this amazing academic adventure your help will be required. We need to assist your child through the exciting process of choosing, conducting, and constructing a science fair project. These projects are utilized to stimulate their curiosity and expand their personal knowledge of their surroundings as well as offer a new perspective of science and the world.

The science fair project is a long-term process that shows a progression of scientific methods and learning, and is thus a key component to your child's academic grades. It is imperative that your child stay on task and meets all the required due dates, as well as, follow the steps of the scientific method/engineering design process. Their scores will be distributed across the second and third quarter grades for the school year.

Please encourage and support your child along the way, but please ensure they do the majority of the work. Parents sometimes want to build the entire project and to make it "perfect". It is important that your child wrestles with the problems (as real scientists do) and tries to solve them individually because learning is often a trial-and-error process. Guide your child whenever and wherever you can, but let the final project reflect your child's individual effort and design.

The attached packet contains instructions and suggestions which will assist your child with their project. The guidelines will help your child narrow down a topic, focus on the deadlines and expectations, and give directions and ideas on creating an effective project. Please take some time to review this with your child. There are many science fair websites with ideas and "how to" information.

If you have questions, please feel free to contact me. E-mail is the best form of communication at dgreene@nadaburgsd.org. I am looking forward to seeing some amazing work from your child this year.

Thank you,

Dawn Greene
Science 6-8 Grade
National Board Candidate



NES Website



Virtual Backpack



Teachers



Sidewinder Facebook



Nadaburg Education Foundation

Due Dates

Group/Individual Form	October 30, 2018
Proposal	November 6, 2018
Project Plan	November 13, 2018
Reference Sheet	December 4, 2018
Display Board	January 8, 2019
Oral Presentation	January 8/9, 2019

Nadaburg Elementary School Science Fair is scheduled for January 16, 2019. Display boards need to be turned in on the 8th in order for me to grade all boards before they go to the fair. On the 8th it is not required that students bring all materials for the science fair display. They will need to bring these in on January 15th or 16th.

The Scientific Method

1 Question? We wonder if...

2 Research

3 Hypothesis If _____, then _____,

4 Experiment

a: materials list

b: Procedure What did you do?

c: observations What did you see?

5 Results Chart, graph, table

6 conclusion Our hypothesis was correct/incorrect because...

STEP 1: CHOOSE A TOPIC & PROJECT PROPOSAL (Due Date _____)

Choose a Topic:

Choose a topic that you want to explore and an Investigative Question that you want to answer in your project. An investigative question asks, "What do you want to find out by doing this project?"

Your question **MUST** be testable and have a cause/effect relationship (i.e., in other words, the change in one thing causes something else to change.)

- For example, here are some cause/effect relationships: How does temperature change with humidity? Will the amount of light affect how fast a bean plant grows? How does salt affect the conductivity of water?).
- The "Causing" variable, is known as the **independent variable**, and the "Effect" variable, is known as the **dependent variable**

Make sure the *answer* to your question is something you can graph or chart – not just a simple yes or no. You must be able to measure the result of your project numerically so that in the end you can graph your results. If you have questions on how to do this, please ask your teacher.

Be creative! Our judges and AzSEF judges love a unique project and one that *you* care about!

Field of Study:

Your topic must fall under one of these Fields of Study. If you are unsure what Field of Study your project falls under, contact your teacher.

<ul style="list-style-type: none">• Physics & Astronomy• Behavioral & Social Science• Cellular & Molecular Biology• Chemistry• Computer Science	<ul style="list-style-type: none">• Engineering: <i>Electrical</i>• <i>Mechanical</i>• Engineering: <i>Materials</i>• <i>Bioengineering</i>• Environmental Science	<ul style="list-style-type: none">• Mathematical Sciences• Medicine & Health Sciences• Plant Sciences• Earth & Planetary Sciences• Animal Sciences
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Project Proposal:

Before you begin investigating your topic, your teacher **must** approve your choice of project. To get started, you will fill out the following Project Proposal Form below. After it is signed, you will need to save it and place it in your Notebook (3-ring binder to be turned in with your project).

VERY IMPORTANT INFORMATION:

If your project involves Human Subjects; Vertebrate Animals; Human or Animal Tissue; Hazardous Substances, Devices or Activities; or Potential Pathogens (like bacteria or mold), you will need to get special permission and fill out special forms before you proceed. You will **not** be allowed to work on your project until permission has been granted. Please discuss your project with your teacher before beginning.

Student Science Topic Selection & Proposal

_____, propose the following science topic for my science & engineering fair project.

Category: Which broad category (see table below) would your project fall under? *Example: Plant Sciences*

Physics & Astronomy	Earth & Planetary Science	Mathematical Sciences
Behavioral & Social Sciences	Energy & Transportation	Medicine & Health Sciences
Cellular & Molecular Biology	Engineering	Plant Sciences
Chemistry	Environmental Sciences	
Computer Science	Life Science	

Investigative Question: The question being investigated:

Materials: This is a list of the key parts of the experiment. Identify the independent variable, dependent variable, constants, control group.

Independent Variable: _____

Dependent Variable: _____

Constants: _____

Control Group (optional -- if any): _____

PARENT: I agree that this will be the science & engineering fair topic that I'll be working on. If I need to change my project, I will let my teacher and discuss the change. I agree to put forth my best work and I understand that the science & engineering fair project is MY responsibility. I will seek help when needed but I am fully aware that all work is to be on my own. I also understand this is a long-term assignment. As such, if work is not turned in by the due date, I will earn a lower grade for that assignment, as stated in the Student-Parent Handbook.

Parent Signature: _____ Date: _____

TEACHER: I support my child's efforts in doing this science & engineering fair project and understand that this is a long-term assignment. If work is not turned in by the due date, my child will earn a lower grade for that assignment, as stated in the Student-Teacher Handbook.

Teacher Signature: _____ Date: _____

TEACHER: The project meets requirements for the science & engineering fair.

Teacher Signature: _____ Date: _____

Please return this form to your classroom teacher. A copy of your proposal will be made and returned to you.

This form will be added to your Final Report Notebook and Logbook. If you need to make a change to your original proposal, you must clear this through your science teacher.

Project Plan:

Name: _____

A. Purpose:

B. Investigative Question:

C. Hypothesis:

D. Experimental Design:

- Independent Variable: _____
- Dependent Variable: _____
- Constants: _____

E. Materials:

<ul style="list-style-type: none">• _____• _____• _____• _____• _____• _____• _____• _____• _____• _____• _____• _____	<ul style="list-style-type: none">• _____• _____• _____• _____• _____• _____• _____• _____• _____• _____• _____• _____
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(Project Plan page 2 of 2)

F. Procedures:

- _____
- _____
- _____

You may include the following on your board:

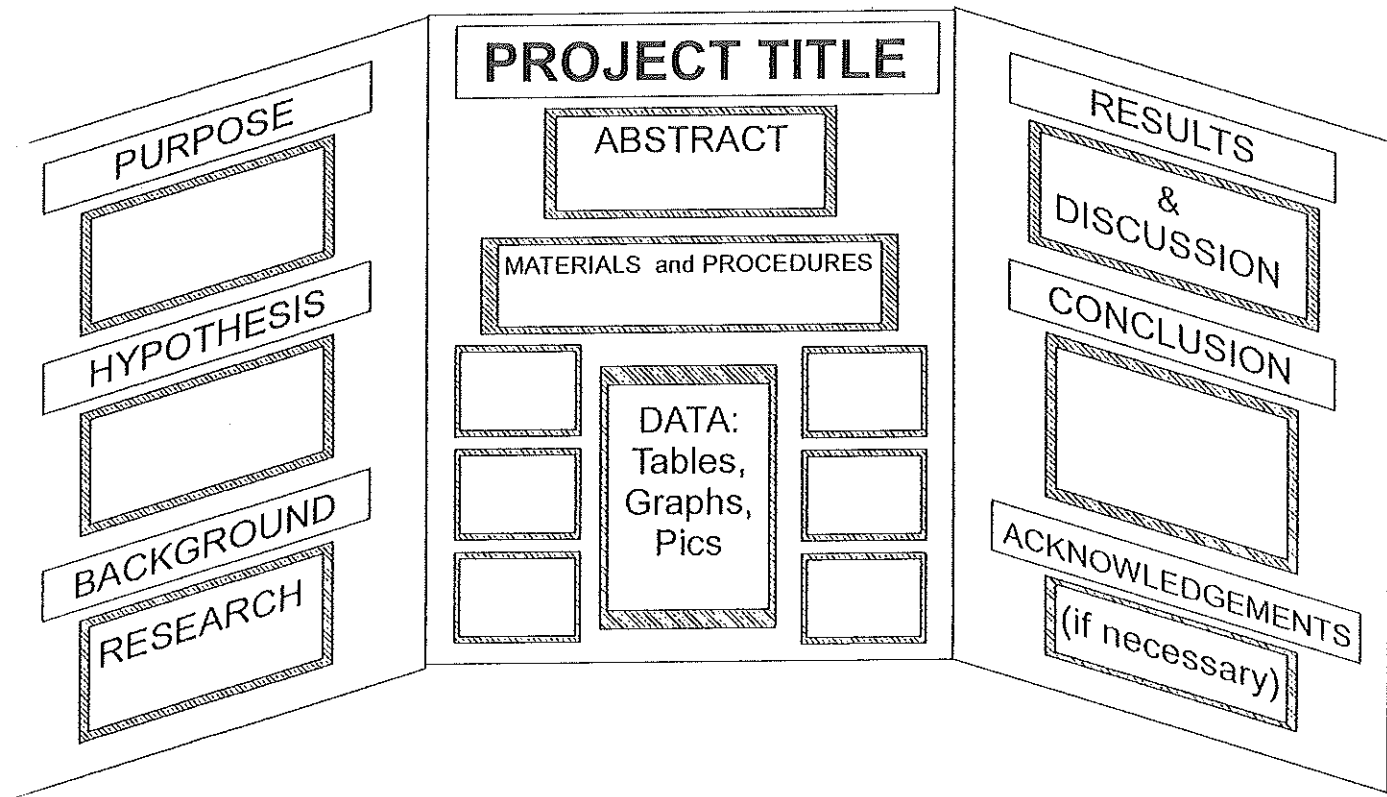
1. Purpose
2. Investigative Question
3. Hypothesis
4. Abstract
5. Experimental Design
6. Materials
7. Procedures
8. Data Table(s): Create a table with the data from your testing. This table should represent all of your observations. You may choose not to include the Data Table on your Display Board if your Graph (from the next step) completely represents your data. If so, please include your Data Table in your Notebook.
 - a. Metric units only
 - b. Remember to label all columns, rows, etc. and give it a title
9. Graph(s): Take data from Data Table and make it into a graph (bar, pie, line, etc.) that represents the data in the best way visually. You might also want to include graphs of averages or other trends that are important to your data. Remember to label your graph. Graphs must have more than numbers – you must use units!
10. Data Analysis: In paragraph form, summarize the results seen in your Data Table and Graph(s). Identify any trends or patterns.
11. Conclusion: In paragraph form, restate your investigative question and your hypothesis. Then answer your investigative question according to your results. Make sure to state the relationship between the independent variable and the dependent variable. Compare your results to your hypothesis and state whether or not your hypothesis was supported.
12. Future Research: Describe how you would improve the project if you were to do it again or extend the experiment.
13. Limitations: Explain anything in your project that may have caused an error in the results, including items out of your control. Include mistakes you think you made and how they could have been avoided if you were to do it again.
14. Application: How can this information be applied to everyday life? How does this impact the Field of Study or society or our world?

Important Notes:

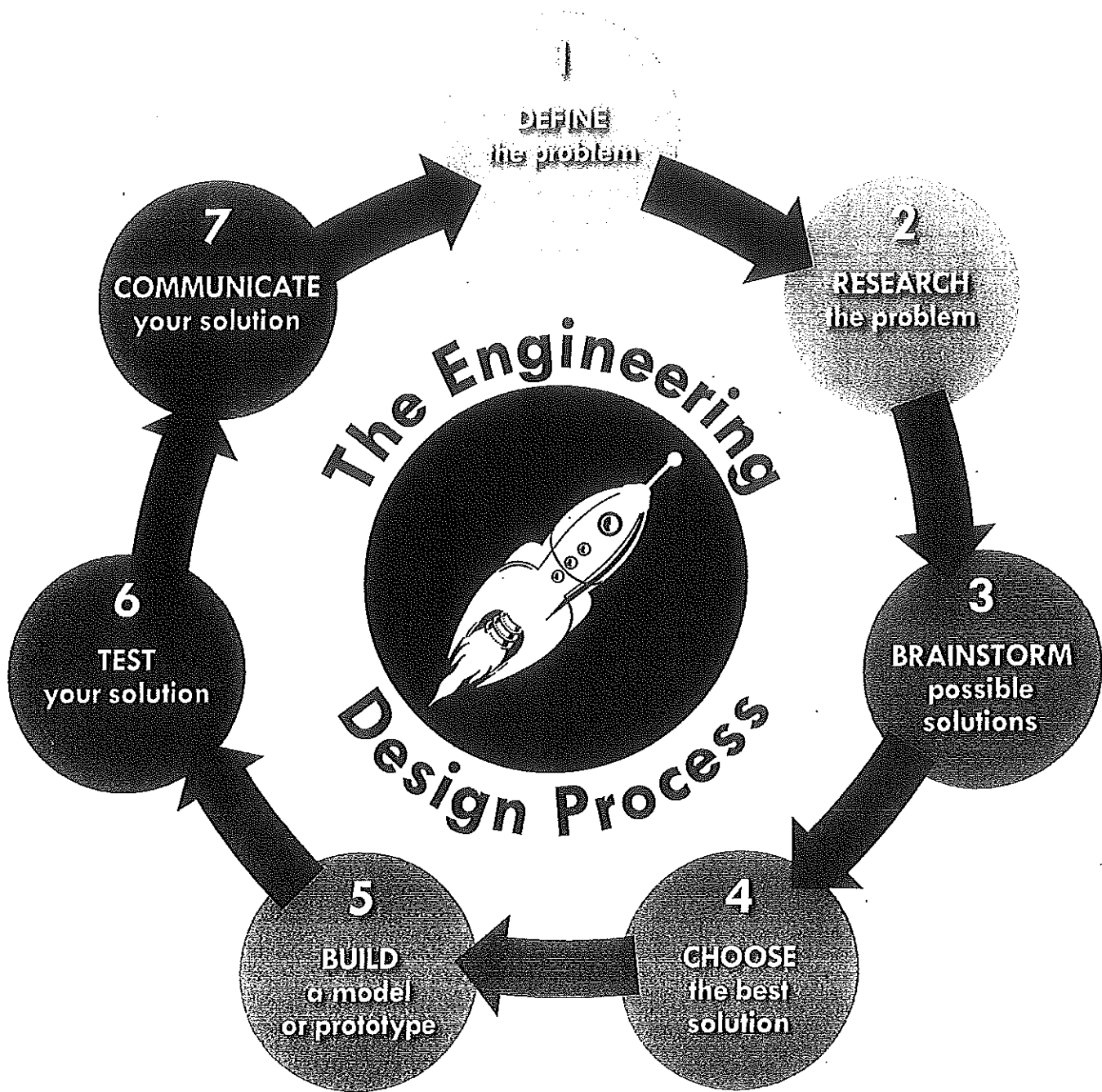
- Use a freestanding tri-fold display board.
- Remember to include only pictures of the project, not of people.
- Informational text must be typed (recommended) or written neatly
- Include your graphs or charts and any other visual aids like photographs or drawings
- Put your name on the back of the board. *Do not put your name or any other personal identification information anywhere else on the board.*
- Be creative. Make it attractive, eye-catching, and easy-to-read from a distance.

You can use the following layout or come up with your own. Usually Display Boards are “read” left to right, just like a newspaper, with the Project Plan information (hypothesis, question, etc.) toward the left and the Results & Conclusion toward the right.

*****Your board must fold completely flat*****

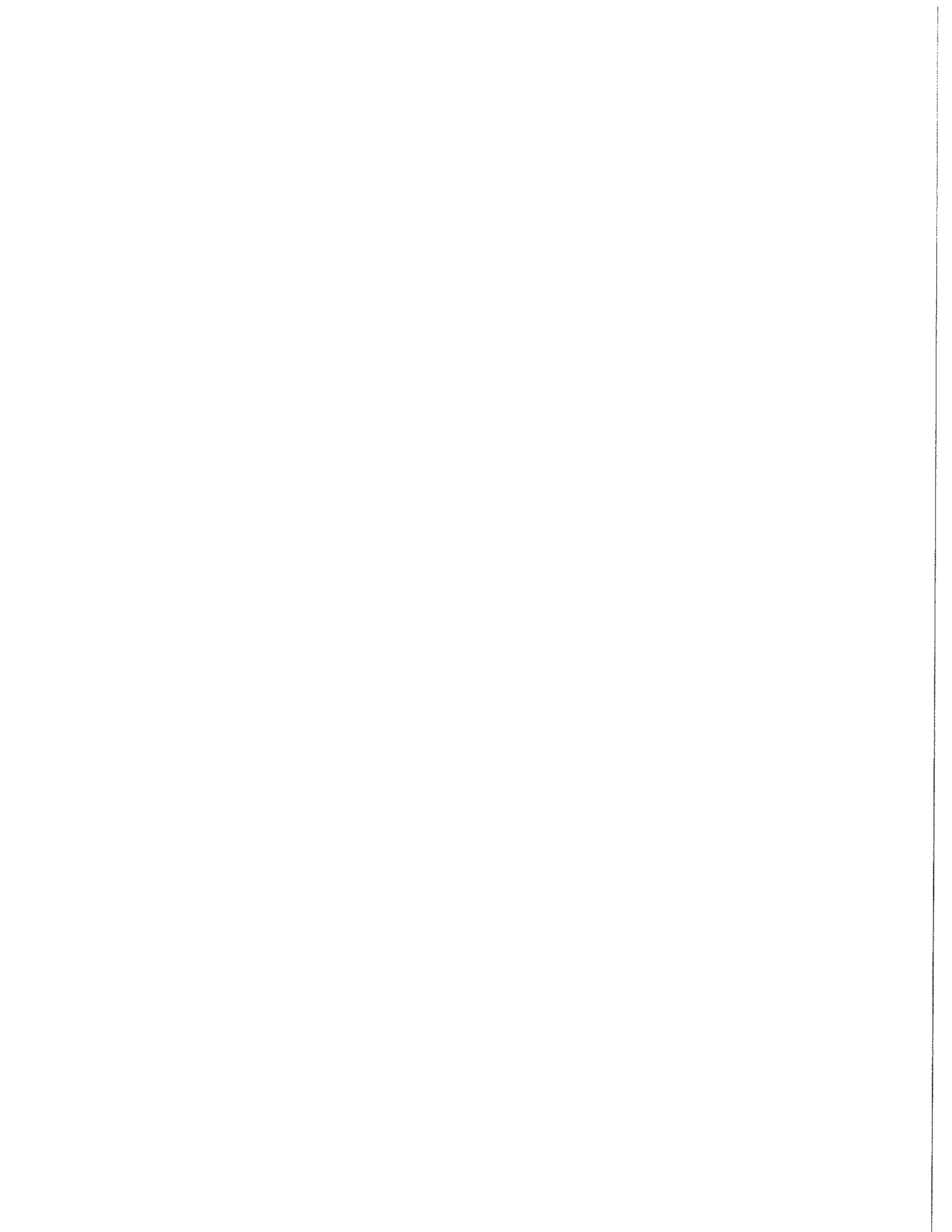


STEP 10: ORAL PRESENTATION



MCESA

Maricopa County Education Service Agency



STEP 1: CHOOSE A TOPIC & PROJECT PROPOSAL (Due Date _____)

Choose a Topic:

Engineering is the designing, building, and testing of a made-at-home project. It is the “invention category” of the science fair. You will need to choose a topic that you want to explore and define a problem that you ultimately want to solve.

Using the Engineering Design Process, you will:

1. Define a problem or need;
2. Design a project based on the defined problem or need;
3. Establish the requirements needed to develop your project;
4. Write up a procedure with preliminary designs;
5. Gather the materials needed;
6. Build a prototype (a model of the project) according to the designs;
7. Test the prototype;
8. Redesign, if necessary, to meet the stated design goal;
9. Connect, or apply, the value of the prototype to real world situations.

Be creative! Our judges, and SARSEF & AzSEF judges love a unique project and one that *you* care about!

Field of Study:

Your topic must fall under one of these Fields of Study. If you are unsure what Field of Study your project falls under, contact your teacher.

<ul style="list-style-type: none">• Physics & Astronomy• Behavioral & Social Sciences• Cellular & Molecular Biology• Chemistry• Computer Science	<ul style="list-style-type: none">• Engineering: <i>Electrical</i>• Engineering: <i>Mechanical</i>• Engineering: <i>Materials</i>• <i>Bioengineering</i>• Environmental Science	<ul style="list-style-type: none">• Mathematical Sciences• Medicine & Health Sciences• Plant Sciences• Earth & Planetary Sciences• Animal Sciences
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Project Proposal:

Before you begin investigating your topic, your teacher must approve your choice of project. To get started, you will fill out the following Project Proposal Form below. After it is signed, you will need to save it and place it in your Notebook (3-ring binder to be turned in with your project).

VERY IMPORTANT INFORMATION:

Your project may not involve Animals, Human or Animal Tissue; Hazardous Substances, Devices or Activities; or Potential Pathogens (like bacteria or mold). You will not be allowed to work on your project until permission has been granted. Please discuss your project with your teacher before beginning.

Student Engineering Topic Selection & Proposal

_____, propose the following engineering topic for my science & engineering fair project.

Topic Category: Which broad category (see table below) would your project fall under? *Example: Physics*

Physics & Astronomy Behavioral & Social Sciences Cellular & Molecular Biology Chemistry Computer Science	Earth & Planetary Science Energy & Transportation Engineering Environmental Sciences Life Science	Mathematical Sciences Medicine & Health Sciences Plant Sciences
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Problem Statement: (Define a problem that your design will solve)

Design Ideas: What do you think you'll design in order to solve the problem detailed above?

STUDENT: I agree that this will be the science & engineering fair topic that I'll be working on. If I need to change my project, I will contact my teacher and discuss the change. I agree to put forth my best work and I understand that the science & engineering fair project is MY responsibility. I will seek help when needed but I am fully aware that all work is to be on my own. I also understand this is a long-term assignment. As such, if work is not turned in by the due date, I will earn a zero for that assignment, as stated in the Student-Parent Handbook.

Student Signature: _____ Date: _____

PARENT: I support my child's efforts in doing this science & engineering fair project and understand that this is a long-term assignment. If work is not turned in by the due date, my child will earn a zero for that assignment, as stated in the Student-Parent Handbook.

Parent Signature: _____ Date: _____

TEACHER: The project meets requirements for the science & engineering fair.

Teacher Signature: _____ Date: _____

Please return this form to your classroom teacher. A copy of your proposal will be made and returned to you.

This form will be added to your Final Report Notebook and Logbook. If you need to make a change to your original proposal, you must clear this through your science teacher.

Project Plan:

Name: _____

A. Problem Statement:

B. Proposed Solution:

C. Background Research:

D. Design Requirements:

E. Preliminary & Final Designs: (Drawings)

F. Materials:

You may include the following information on your board:

1. The Problem Statement: a description of a practical need or problem to be solved.
2. Design Requirements
3. Preliminary & Final Design
4. Materials
5. Procedures
6. Data Table(s): Create a table with the data measurements from your testing. This table should represent all of your observations. You may choose not to include the Data Table on your Display Board if your Graph (from the next step) completely represents your data. If so, please include your Data Table in your Final Report.
 - a. Metric units only
 - b. Remember to label all columns, rows, etc. and give it a title
7. Graph(s): Take data from Data Table and make it into a graph (bar, pie, line, etc.) that represents the data in the best way visually. You might also want to include graphs of averages or other trends that are important to your data. Remember to label your graph. Graphs must have more than numbers – you must use units!
8. Data Analysis: In paragraph form, summarize the results seen in your Data Table and Graph(s). Identify any trends or patterns.
9. Conclusion: In paragraph form, restate the need or problem you set out to address. You should summarize your design requirements, the work performed, if any re-designs were made and why, and your final results.
10. Future Research: Describe how you would improve the project if you were to do it again.
11. Limitations: Explain anything in your project that may have caused an error in the results, including items out of your control. Include mistakes you think you made and how they could have been avoided if you were to do it again.
12. Application: How can this information be applied to everyday life? How does this impact the Field of Study or society or our world?

Important Notes:

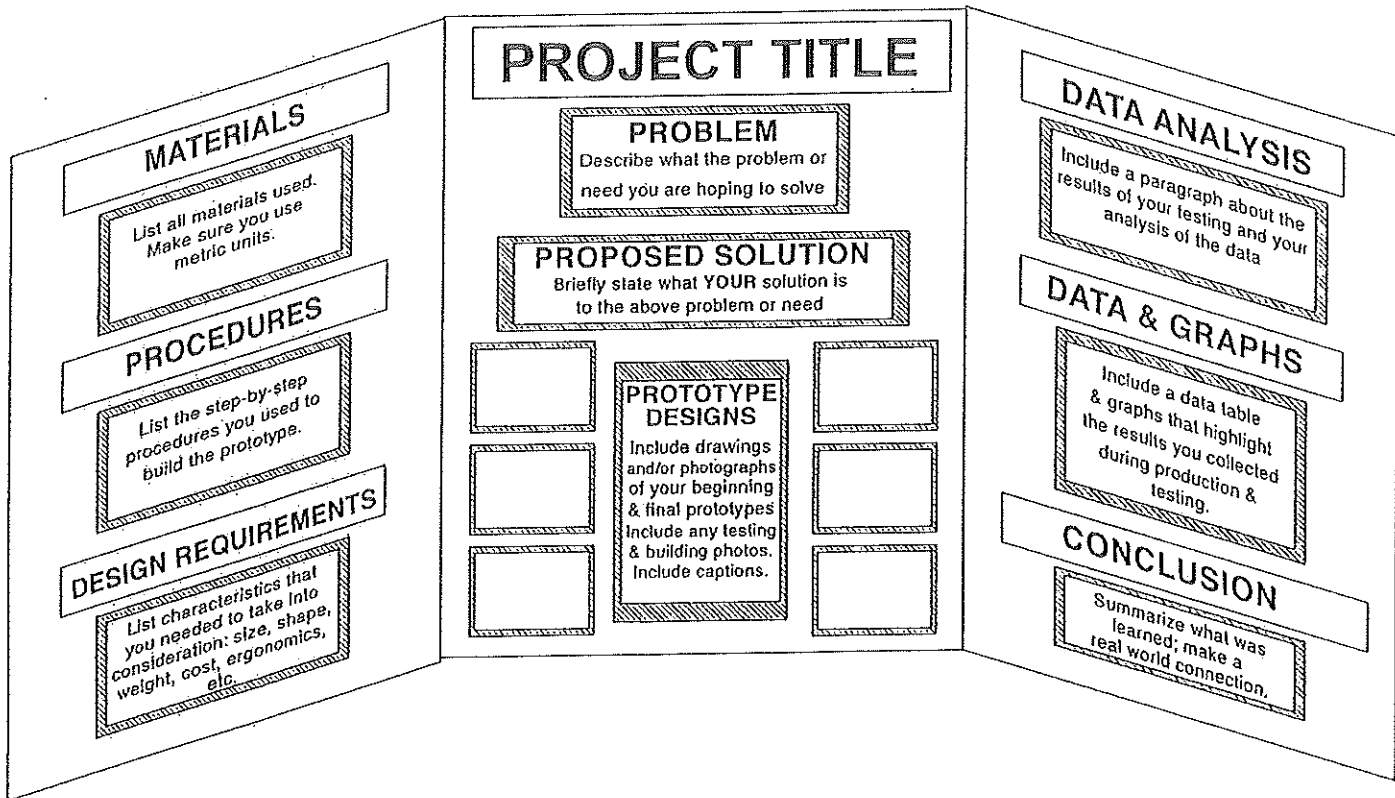
- Use a freestanding tri-fold display board.
- Remember to include only pictures of the project, not of people.
- Informational text must be typed (recommended) or written neatly

- Include your graphs or charts and any other visual aids like photographs or drawings
- Put your name on the back of the board. *Do not put your name or any other personal identification information anywhere else on the board.*
- Be creative. Make it attractive, eye-catching, and easy-to-read from a distance.

Here is an example of an Engineering Project Display Board.

You can use the following layout or come up with your own. Usually Display Boards are “read” left to right, just like a newspaper, with the Project Plan information toward the left and the Results & Conclusion toward the right.

*****Your board must fold completely flat*****



STEP 10: ORAL PRESENTATION

Junior High students will be required to do an oral report and therefore will be graded on this. If your project is chosen to be in the Regional District Science and Engineering Fair, you will be required to put together an oral report ready for the judges. Your presentation should be 2-4 minutes in length, and you can use your board as a guide for what information to include. Make sure to describe what you did and why, the outcome, and how you used the scientific method in this process.

CATEGORY DESCRIPTIONS

Astronomy: Meteorology, life on a planet, research studies on planets or moons, telescopes (how powerful different scopes are, make a telescope)

Earth Science –

- **Earth:** Geology, mineralogy, physical oceanography, seismology, geography, topography. (Ideas: test weather tools; test the causes of earthquakes; test the strength of rocks.
- **Chemistry:** Study of nature and composition of matter and laws governing it – physical chemistry, organic chemistry (other than biochemistry), inorganic chemistry, materials, plastics, fuels, pesticides, metallurgy, soil chemistry, etc. You may test some consumer products here. For example testing the effectiveness of detergents waxes, cleaning products. Testing physical and chemical changes is appropriate for this category. Ideas: how to prevent rust, mildew, mold, shoe scuffs, scratches on floors or cars.
- **Biochemistry:** Chemistry of life processes – molecular biology, molecular genetics, enzymes, photosynthesis, blood chemistry, protein chemistry, food chemistry, hormones.

Life Science

- **Botany:** Study of plant life – agriculture, agronomy, horticulture, forestry, plant taxonomy, plant physiology, plant pathology, plant genetics, hydroponics, algae, etc.
- **Microbiology:** Biology of microorganisms – bacteriology, virology, protozoology, fungi, bacterial genetics, yeast. Remember to take pictures; you cannot display this because it could be harmful to us.
- **Environmental:** Study of pollution (air, water, and land) sources and their control, ecology, waste disposal, impact studies. Ideas: ways to prevent erosion, study on decomposition (this takes a while so get started right away). How about studying air pollution from different pollutants; cars, buses, trucks? Test things marketed as biodegradable.
 - **Medicine and Health:** Study of diseases and health of humans and animals – medicine, dentistry, pharmacology, pathology, veterinary medicine, nutrition, sanitations, pediatrics, allergies, speech and hearing, etc. Be careful with this section. You must get approval from your teacher when working with people or animals PRIOR to starting your project.

Engineering

- **Engineering:** Technology projects that directly apply scientific principles to manufacturing and practical uses – civil, mechanical, aeronautical, chemical, electrical, photographic, sound, automotive, marine, and heating and refrigeration, transportation, environmental engineering. Ideas: What structures are the strongest (test shapes) – think of bridge designs. Why are cars made in different shapes? Will a “Hummer” go as fast as a “Corvette” – test the design.

Behavioral/Social

- **Behavioral and Social Sciences:** Human and animal behavior, social and community relationship – psychology, sociology, anthropology, archaeology, animal behavior, learning, perception, urban problems, public opinion surveys, educational testing, etc. When working with humans or animals you must get PRIOR approval from your teacher

Physical Science

Physics: Pertaining to the part of the Physical Science Strand: Energy (light, sound, heat, and electricity) – this is a great category and we don't see too many experiments here. Think of something with light waves (light bulbs), sound waves (iPods), radio waves, materials that protect us from heat (oven mitts) electrical circuits – what about those Christmas tree bulbs and if one is burned out? Force (gravity, friction, magnetism and motion.) Ideas: roller coaster, design of airplanes, rockets as it affects motion and or speed, type of materials used that may affect physical laws: type of pavements, type of baseball bat, football other sporting equipment. How about a study on equipment used in the winter Olympics (skates, skis, snowboards).

ADDITIONAL INFORMATION

When you choose a topic, it is extremely important to find as much information on the topic as you can before you begin an experiment. This is called researching, "*Background Information*". In particular, there are several things you will want to pay special attention to and that should accompany any good science fair project.

It is very important to write your information in YOUR OWN WORDS, to show you understand the ideas and scientific concepts and are not just repeating other people's findings. If you do not understand a scientific term or phrase, use a dictionary or a thesaurus to find a different word that you can use correctly. Simply copying other people's work is called **plagiarism** and is a serious crime.

II. Abstract: This is a summary of the entire project on one page in 250 words or less and must be single spaced. Anyone reading it should have an accurate idea of the project. It summarizes the purpose, procedures, and results of your investigation and ***should be your final step***. Do not include a list of your materials unless it was very expensive or special scientific equipment. An abstract should only include procedures done by you, and not another scientist or your parents. Your abstract will be on your display board.

Abstract Components (contains several items that will also be included in the "Introduction" & "Methods", but in summary form.)

1. Purpose: What are you trying to learn, and why did you choose this topic?
2. Problem: What scientific question are you trying to answer?
3. Hypothesis: This is your prediction and your explanation why, based on your research.
4. Procedures: A brief summary of how the experiment was performed and the key points, and **should not** be written a step-by-step list.
5. Results: A brief description of your data and measurements.
6. Conclusions: Explain your results and whether this supports your hypothesis.

PROJECT DISPLAY BOARD

After all the research, experimentation, time & effort spent on the preparation of the science fair project, your presentation should show off your hard work. First impressions can make a difference. Boards are judged on: Creativity, Scientific Thought, Thoroughness, Complete sentences and Neatness. DO YOUR BEST WORK!

The following page provides a sample of what the display board should look like, including all the required information. This is an excellent guideline to follow when completing your display board for your project, but be aware that each project is an individual effort and creativity enhances the overall effectiveness of your research and presentation. Any photographs on the board must include a caption including who the photograph is taken by.

All projects will need to follow the guideline below when assembling the display board. These free-standing standard size display boards can be purchased in local stores, school and office supply stores. **Names must go on the back of the board. No Name=No Grade**

Science Project Display Board Checklist

- Problem
- Purpose
- Hypothesis
- Abstract
- Title
- Materials
- Procedure
- Controls
- Variables
- Data
- Conclusion
- Application

Engineering Design Project Board Checklist

- Problem
- Design Requirements
- Preliminary and Final Design
- Materials
- Procedures
- Data Table
- Graphs
- Data Analysis
- Conclusion
- Future Research
- Limitations
- Application

ORAL PRESENTATION TIPS

In order to have an informative and thorough oral presentation, be sure to do the following:

- If you do not know the judge(s), you should introduce yourself by shaking the judge's hand and telling them your name & the name of your project.
- If the judge asked a question, answer it. If not, describe the project's purpose, problem, and hypothesis.
- Clearly explain your procedure. Point out pictures, diagrams, or other objects on the display board. Visuals help to explain the project and help the judges to understand how much work you've done.
- Explain your results
- Discuss the conclusion. Was the hypothesis supported or un-supported? Let the judges know of the interesting observations you may have made or recommendations you might have to continue your project
- Discuss any application or practical uses to humankind
- Include a very brief discussion on the background material
- Be sure to know and understand all the terms associated with the report
- Limit your time to 3-5 minutes, and then ask the judges, "Do you have any questions?"
- Write the presentation on note cards. Only refer to them but never read word for word
- If a judge asks you a question on something you do not know, don't dwell on that but discuss what you do know
- Be sure to practice the presentation. Use family members, friends, or a mirror
- Make sure you can properly pronounce terms that will be used in the presentation.
- Look the judge(s) in the eye
- If you get nervous, it's usually a good idea to reference pictures and graphs
- Speak clearly and slowly

Problem

Write your question.

Title of Your Project Here

- It can be your question, but it does not have to be.
- It can be a statement.
- It needs to grab the attention of your audience.

Results

Write what you learned.

Hypothesis

Your hypothesis is your BEST guess for what you think the outcome to your experiment/activity will be.

In the middle of the tri-fold board, you should display:

- 1) Pictures
 - of you completing the experiment
 - of before and after shots
 - of people participating in your project
 - need to be labeled
- 2) Charts & Graphs
 - label the charts and graphs clearly
 - print in color if possible

Conclusion

Write why you think you got the results that you did.

Materials/ Procedure

List your materials & procedure.

Important Cabinet Notes

- For your title and for your headings, you need to use a large font that stands out from 10 feet away.
- Use the same font for all headings
- Center your headings
- Use a large font for your descriptions under each heading
- Use black ink

Cindy Rose 2015

Applications

Write how you can take the information you learned from your results and apply it to real life.

Display Board (60 Points)

1. SCIENTIFIC THOUGHT: 30 Points

- Title introduces/identifies project well
- Question/ purpose explains what project is about clearly and simply
- Hypothesis predicts results with published support evidence
- Materials and Procedure listed in simple numbered order.
- Results: Observations give a simple explanation. Has well designed, easy to read graphs, and charts or tables
- Conclusion shows a high level of science content and learning

2. THOROUGHNESS: 20 Points

- All sections completed
- Includes final report and data notebook (if applicable)
- Has a model or sample to display; may include materials used
- Project explains itself

3. CREATIVITY AND COMMUNICATION: 10 Points

- Original
- Colorful and attractive
- Shows quality effort
- Neat, legible and easy to read

Oral Presentation (40 Points)

1. INTRODUCTION: 10 Points

- Attention getting
- Tells purpose clearly and simply
- Explains hypothesis with scientific support evidence
- Tells materials and procedure clearly and simply

2. RESULTS: 10 Points

- Tells results of all tests and trials
- Explains graphs and averages

3. CONCLUSION: 10 Points

- Tells if hypothesis matched results
- Explains learning
- Shows high level of science knowledge and learning
- Answer any questions thoroughly

4. DELIVERY: 10 Points

- Voice projection
- Eye contact
- Facial Expression
- Posture
- Body Control
- Attitude/Enthusiasm

FINAL GRADE

Science & Engineering Fair 2015
**Oral Presentation
 Rubric**

I. Organization The following are demonstrated fully in the video:

Speaker follows a logical sequence	0	1	2	3	4	5
Speaker is concise sharing only relevant information	0	1	2	3	4	5
Student manages time constraint well throughout entire presentation	0	1	2	3	4	5

Points _____

II. Content Knowledge The student demonstrates a deep understanding of project in the video by explaining:

The need or importance of project	0	1	2	3	4	5
Experimental set up and/or design process and testing procedure for prototype.	0	1	2	3	4	5
Explanation of results/conclusion from experiment or design process (final prototype)	0	1	2	3	4	5
Discussion of limitations and/or needed changes for future	0	1	2	3	4	5

Points _____

III. Delivery The following are demonstrated fully in the video:

Information is delivered in a clear, loud voice	0	1	2	3	4	5
Speaker maintains an appropriate level of eye contact	0	1	2	3	4	5
Speaker engages audience by demonstrating excitement for project	0	1	2	3	4	5

Points _____

TOTAL POINTS
 (Oral Presentation Rubric)
 Transfer this score to project rubric

**Science & Engineering Fair 2015
Engineering Projects
Rubric**

I. Research Problem The following are clearly stated and explained:

Description of a practical need or problem to be solved	0	1	2	3	4	5
Definition of criteria for proposed solution	0	1	2	3	4	5
Explanation of constraints	0	1	2	3	4	5
Subtotal Points _____						

II. Design and Methodology The following are clearly stated and explained:

Exploration of alternatives to answer need or problem	0	1	2	3	4	5
Identification of a solution	0	1	2	3	4	5
Development of a prototype/model	0	1	2	3	4	5
Subtotal Points _____						

III. Execution: Construction and Testing

Prototype demonstrates intended design	0	1	2	3	4	5
Prototype has been tested in multiple conditions/trials	0	1	2	3	4	5
Prototype demonstrates engineering skill and completeness	0	1	2	3	4	5
Subtotal Points _____						

IV. Technology

Technology utilized to research the problem	0	1	2	3	4	5
Technology impacted the design and methodology of the project	0	1	2	3	4	5
Technology used to aide in construction, testing, and execution of the project.	0	1	2	3	4	5
Technology enhanced the quality of the project	0	1	2	3	4	5
Subtotal Points _____						

V. Creativity:

Project is based on a unique idea, problem or question	0	1	2	3	4	5
Idea, problem or question is handled or interpreted in a unique manner	0	1	2	3	4	5
Materials are used in a unique or ingenious manner	0	1	2	3	4	5
Project is displayed in a unique manner	0	1	2	3	4	5
Subtotal Points _____						

VI. Visual Presentation

Material is logically organized	0	1	2	3	4	5
Graphics and legends are clear	0	1	2	3	4	5
Supporting documentation is displayed	0	1	2	3	4	5
Subtotal Points _____						

TOTAL PROJECT POINTS _____

Oral Presentation Points
(from Presentation Rubric) _____

Project Points _____

TOTAL POINTS _____

Science & Engineering Fair 2016
Science Projects
Rubric

I. Scientific Thought

	Points					
Problem or question is clearly stated	0	1	2	3	4	5
Hypothesis or claim is clearly stated	0	1	2	3	4	5
Experimental procedure is clearly stated in an organized manner	0	1	2	3	4	5
Data/observations are graphed, tabulated or analyzed in a useful manner	0	1	2	3	4	5
Conclusion is clearly stated	0	1	2	3	4	5
Conclusion is clearly stated and supported by data	0	1	2	3	4	5
Evidence of research or background information is present	0	1	2	3	4	5
Variables affecting results are controlled	0	1	2	3	4	5
A variety of research resources are utilized	0	1	2	3	4	5

Subtotal Points _____

II. Creativity

Project is based on a unique idea, problem or question	0	1	2	3	4	5
Idea, problem or question is handled or interpreted in a unique manner	0	1	2	3	4	5
Materials are used in a unique or ingenious manner	0	1	2	3	4	5
Project is displayed in a unique manner	0	1	2	3	4	5

Subtotal Points _____

III. Thoroughness and Workmanship

Project has been thoroughly explained (written) in a clear, concise manner	0	1	2	3	4	5
There is evidence of treatment of all data collected	0	1	2	3	4	5
Diligence in conducting the project is evident	0	1	2	3	4	5
Display is constructed of sturdy materials	0	1	2	3	4	5
Nature of project is immediately clear to all readers	0	1	2	3	4	5
Clearly defined and illustrated the project	0	1	2	3	4	5
The display is visually appealing	0	1	2	3	4	5
The design of the project shows planning and organization	0	1	2	3	4	5
Appropriate use of technology	0	1	2	3	4	5

Subtotal Points _____

**Oral Presentation
 Points**
 (from Presentation Rubric)

TOTAL PROJECT POINTS _____

BIBLIOGRAPHY

Reference Material	How to cite information
Book	Author(s) (Last name, First name). <u>Title of Book</u> . Place of Publication: Publisher, Year of Publication.
Book with corporate author	Corporation of Publication. <u>Title of Book</u> . Place of Publication: Publisher, Year of Publication.
Magazine or Newspaper Article	Author (Last name, First Name). "Title of Article" <u>Title of Periodical</u> . Date of Publication (Day/Month/Year): Page numbers.
Article from a Reference book	Author (Last name, First name). "Title of Article." <u>Name of Reference Book</u> . Volume. Year Edition was Published.
Interview that you conducted	Person you Interviewed (Last name, First name). Type of Interview. Date of Interview (Day/Month/Year).
Digital Media	Artist. <u>Title of Album</u> . Company that Produced Album, Year of publication.
Email	Author (Last name, First name). "Title of Message (if any)" Email to the author. Date of message.
Article in Reference Database on CD-ROM	"Title of Article." Reference Database. CD-ROM. City(and State) of publication: Publishing Company, Year of Publication.
Web site	Author (Last name, First name). Title of Article. Date of Publication (Day/Month/Year). Title of Web site. Date of first visit to web site (Day/Month/Year). <u>Website Address</u> (Entire address)

Follow the format provided on the next page for the various types of resources:

PROJECT REFERENCE WORKSHEET

Due:

A. Type of Media (circle one)

Magazine *Newspaper* *Journal* *Encyclopedia*
Textbook *Dictionary* *Book* *Other*

B. Name/Title: _____

C. Title of Article/Chapter: _____

D. Publisher/Author: _____

E. ISBN (Books Only): _____

F. Year Published: _____ Month: _____ G. Volume #: _____ Pages: _____

H. Summary of Information: _____

A. Type of Media (circle one)

Magazine *Newspaper* *Journal* *Encyclopedia*
Textbook *Dictionary* *Book* *Other*

B. Name/Title: _____

C. Title of Article/Chapter: _____

D. Publisher/Author: _____

E. ISBN (Books Only): _____

F. Year Published: _____ Month: _____ G. Volume #: _____ Pages: _____

H. Summary of Information: _____

A. Type of Media (circle one)

Magazine *Newspaper* *Journal* *Encyclopedia*
Textbook *Dictionary* *Book* *Other*

B. Name/Title: _____

C. Title of Article/Chapter: _____

D. Publisher/Author: _____

E. ISBN (Books Only): _____

F. Year Published: _____ Month: _____ G. Volume #: _____ Pages: _____

H. Summary of Information: _____

A. Type of Electronic Media (circle one)

*Internet
Video*

*Film
Filmstrip*

*CD-ROM
Podcast*

*DVD
TV Program*

Documentary

B. Website/Title: _____
C. Title of CD/Video, etc.: _____
D. Publisher/Author: _____
E. Website Address:http:// _____
F. Year Produced/Created: _____ Month: _____
G. Volume #/Episode #: _____
H. Summary of Information: _____

A. Type of Electronic Media (circle one)

*Internet
Video*

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Filmstrip*

*CD-ROM
Podcast*

*DVD
TV Program*

Documentary

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C. Title of CD/Video, etc.: _____
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TV Program*

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E. Website Address:http:// _____
F. Year Produced/Created: _____ Month: _____
G. Volume #/Episode #: _____
H. Summary of Information: _____



NADABURG UNIFIED SCHOOL DISTRICT #81

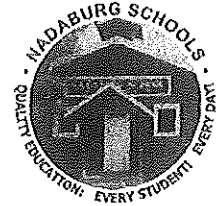
"Quality Education: Every student! Every day!"

Nadaburg Elementary School

"Discovering the Gifts of Every Child!"

Curtis P. McCandlish

Proud Principal



Our Vision is to provide a quality education to every student, every day.

Our Mission is to graduate all students with the knowledge, skills, attitudes and ethics necessary to succeed in the colleges or careers of their choice.

October 25, 2018

Dear Parents/Guardians,

As part of this year's science curriculum, students will be participating in a science fair, scheduled for Wednesday, January 16, 2019. This is a graded assignment and will be a good portion of their second and third quarter grades. Students have the option of working individually or within a group of up to three students. In order for students to work in a group each student must provide a parent signature approving their participation.

The science fair "projects" are to be completed outside of the classroom. Class time will be devoted to gaining the knowledge necessary to complete their projects. Time will also be allotted for questions, etc., and project review. Students will need to meet with one another on their own time, which would require the students and parents to collaborate and set times for students to work together. Please be aware that students will receive individual grades for this project based on the work that they have provided.

Please selected an option below for your student's project.

Thank you,

Dawn Greene
6-8 Science
National Board Candidate
Science Fair Coordinator

-
- I would like my child to work individually on the science fair project.
- I would like to allow my child to work with a group on the science fair project.

Student Name _____

Parent Signature/Date _____



NEN Website



Virtual Backpack



Teachers



Sidewinder Facebook



Nadaburg Education Foundation

PARENT ACKNOWLEDGMENT FORM

Due:

Student's Name: _____

Student's Homeroom Teacher: _____

Dear Parents/Guardians,

Please sign this document as acknowledgement that:

1. Student has brought home the Science Fair Packet.
2. You are aware of the time line (included in the packet) that lists the items' due dates.
3. The experimental part of the project is to be done at home. Students will have SOME time in school to work on research, writing the report, etc. However, the majority of the work, including the actual experiment, will need to be completed at home.
Reminder: While you should support and help your child, the majority of the work should be completed by the student.
4. The school is **not** responsible for providing materials used during the project.
5. Plagiarism document must be signed and test must be passed.

Parent Signature _____

Date _____