

Process Overview:

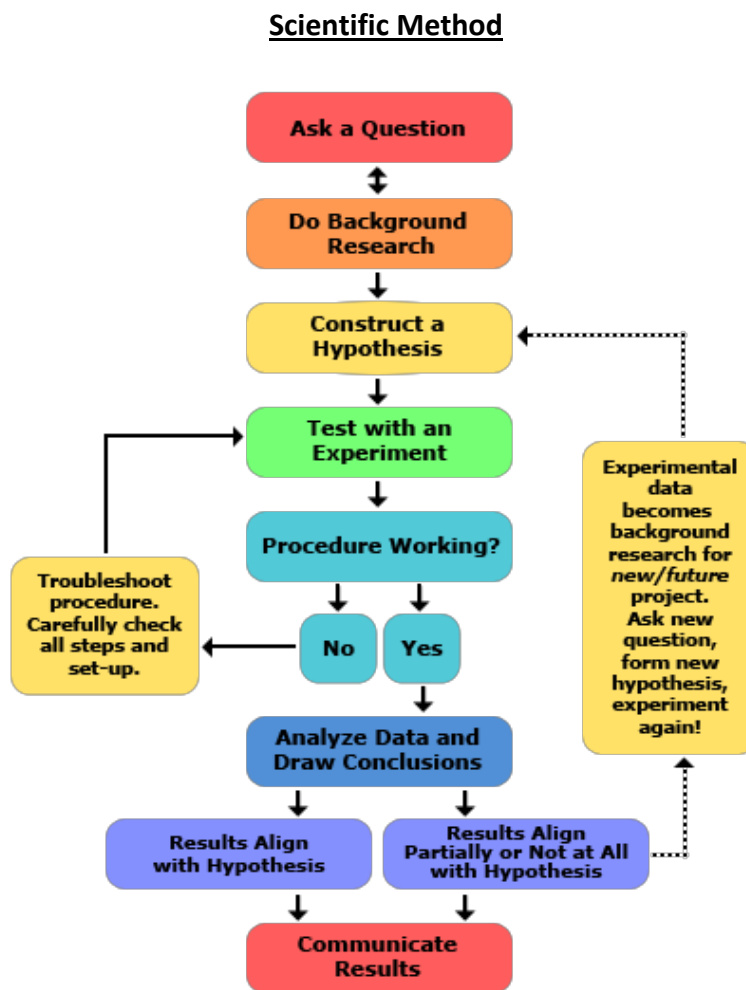
Lincroft School Scientists:

We are so excited you have decided to participate in the Science Fair! Everything you need to know to complete an amazing project is in this packet. However, if at any time you have questions please have one of your parents contact [Karen Whitaker](#) or [Deirdre Blasucci](#) via email.

Goal-The goal of the science fair is to get you excited about science and to provide an environment where learning and discovery are fun.

How To Complete - You will perform a simple experiment at home with parental supervision using the scientific method.

What is the Scientific Method?



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Steps of the Scientific Method - http://www.sciencebuddies.org/science-fair-projects/project_scientific_method.shtml#overviewofthescientificmethod

Find An Experiment: - Start by looking on the internet for a fun experiment that looks interesting to you and is designed for elementary school scientists! You do not have to pick a project from the websites below, but we found some cool experiments on there!

NEW – Any project that has to do with health or the environment will get special recognition. However, any project in your area of interest can be done!

- <http://www.stevespanglerscience.com/>
- http://www.sciencebuddies.org/science-fair-projects/project_ideas.shtml
- <http://www.education.com/science-fair/>
- <http://www.all-science-fair-projects.com/>

Ask a Question: The scientific method starts when you ask a question about something that you observe: How, What, When, Who, Which, Why, or Where? Be curious and ask lots of questions about your experiment! What is happening? Why does it happen? How does it happen?, etc.

Do Background Research: Once you pick an experiment, look for information on what is happening in the experiment (e.g. Volcano Experiment – It says to add vinegar to baking soda – why? What will happen? What happens when you mix baking soda and vinegar together to make it look like it is erupting? What makes the bubbles?, etc.) *Don't do all your research on Wikipedia, it can contain incorrect information.*

Construct a Hypothesis: A hypothesis is a what you think will happen when doing an experiment. "If _____[I do this] _____, then _____[this]_____ will happen." State your hypothesis in a way that you can easily observe or measure if what you thought would happen did. Also, construct your hypothesis so it helps you answer your original question.

Test Your Hypothesis by Doing an Experiment: Your experiment tests whether your hypothesis is supported or not. In other words, what you thought would happen either does or does not.

When doing an experiment where you would like to repeat it under different conditions, change only one thing, such as the amount time, how much of one ingredient, or the temperature, etc. Keep all other conditions the same so you can learn what that one thing you changed caused. What did you observe now? What happened to your result? Try to repeat it more than once, 3 times is best. Did you get the same result every time?

Analyze Your Data and Draw a Conclusion: Once your experiment is complete, you collect your measurements and analyze them to see if they support your hypothesis or not. There is no right or wrong, just what you thought would happen either did (hypothesis supported) or did not (hypothesis rejected).

Scientists often find that their hypothesis was not supported, and in such cases they will develop a new hypothesis based on the information they learned during their experiment. This starts the entire

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process of the scientific method over again. Even if they find that their hypothesis was supported, they may want to test it again in a new way.

Communicate Your Results: To complete your science fair project you will communicate your results on a display board and share them verbally. Most importantly, what did you learn?

"Overview of the Scientific Method." *The Scientific Method*. Kenneth Lafferty Hess Family Charitable Foundation Science Buddies, n.d. Web. 22 Jan. 2014

For additional information on the Scientific Method, go to: http://www.sciencebuddies.org/science-fair-projects/project_scientific_method.shtml#overviewofthescientificmethod

Science Fair Project Definitions

Bibliography – These are the websites or books that you used for your project.

Big Question – What are you trying to find out?

Conclusion This is where you state whether your hypothesis is supported or not and explain why using your results. You may also include information on what your experiment makes you wonder about, what other questions you would like to answer or other experiments you would like to try.

Data – Include your observations. Include any data you gathered from your experiment. Organize data into graphs and tables. Save the interpretation of the data for the conclusion section.

Hypothesis – What do you think will happen? Be sure to write this in an “If... then...” statement.

Materials – A list of supplies used in your experiment.

Procedure – The steps you take to do your experiment. Write it as if someone else will be following your directions to repeat this experiment.

Qualitative Observations – Observations that describe what you observe with your senses.

Quantitative Observations– Observations that you measured with instruments, such as temperature (how hot or cold), distance (how far), volume (how much liquid), etc.

Research – Doing this will help you make a prediction of what you think will occur in your experiment. It will help you understand what causes what you observe.

Results - This includes your observations. It includes items you observed with your senses or measurements you collected during your experiment. It may be in graphs and tables.

Title - This is the name of your project in large letters across the top of the board.

Variable – Any factor (e.g. how much you add-weight or volume) or condition (e.g. temperature) that can exist in differing amounts or types when doing an experiment. When performing an experiment, ONLY change one variable and keep ALL other conditions the same (e.g. add the same amount of baking soda at the same temperature, but add different amounts of vinegar. Don't change more than one variable.

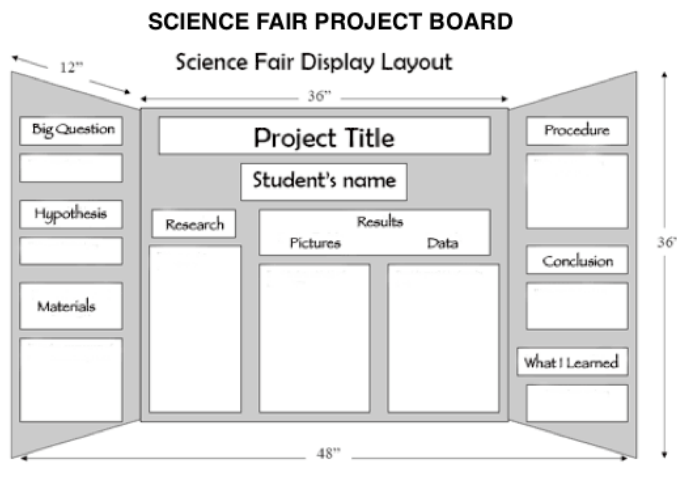
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How do I share my project?

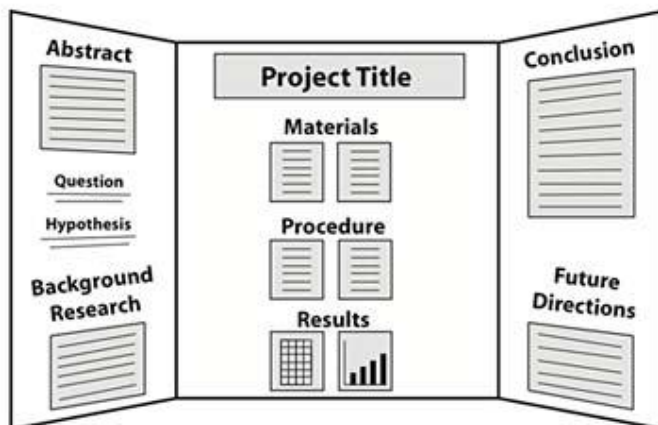
You will share your project at the Science Fair on a tri-fold presentation board. You do not have to prepare a formal spoken presentation! However, be prepared to share with students, teachers and parents' key information on your project, especially what you learned about the scientific principle your experiment is based on (e.g. gravity, acid base reactions, air pressure, weather, etc.)! Don't be nervous about sharing your project! Do your best and have fun!

How do I create a project board?

1. Document and present information on a 36" H x 48" L tri-fold poster board.
 - a. Elmer's or other brand tri-fold poster boards 36" H x 48" L are available through [Amazon using the Lincroft PTA link](#). They are also available at Staples (in-store and online), AC Moore, Target and Walmart in store only.
 - b. Follow a science fair presentation format for a tri-fold board similar to the ones below, which includes the Title, Question, Hypothesis, Materials, Procedure, Results, Conclusion, What I Learned, Name, Grade, etc. (See below)
 - c. You may want to use a presentation application like PowerPoint or Prezi, or record your experiment/demonstration.
 - d. Make a project title and put this across the middle top of the board.
 - e. Include the big question on the board.
 - f. Don't forget to include your Name, Partner's Name if applicable, Grade(s) and Teacher(s) on the board.
 - g. You are welcome to use technology, but there will not be internet access and electricity is very limited.
 - h. Photographs and recordings are a great way to share what you did.



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What are some helpful hints to create a great Science Fair Poster Board?

- Students **NOT** parents are to create the poster.
- Use a font size of at least 16 points for your main body text. Anything smaller is too hard to read.
- Stick with traditional fonts like Arial, Times New Roman, Calibri or similar typefaces.
- Use *italics* or **bold** for emphasis, not for all your text.
- Don't place your text on top of a picture; that makes it difficult to read.
- Don't use ALL CAPS; THEY ARE MUCH HARDER TO READ.
- Don't use more than two or three different fonts on your board. Times New Roman for body copy and Arial for headings makes for a nice combination.
- Plagiarism is a no-no. Make sure you use references if they are choosing to copy information from a published source. This goes in your bibliography.

What information do I need to know for the day of the Science Fair?

- What to bring?
 - Your project presented on a tri-fold poster board that stands on its own
 - Any items that go in front of the display board
 - Pen, tape, glue and other quick-fix items in case the display board gets damaged in transit
- Do **NOT** bring the following items:
 - Hazardous chemicals
 - Food
 - Live insects or animals)
 - Items to hand out. **No materials may be handed out or tasted due to allergies. This includes food (rock candy, rock candy solutions, cookies, etc.) and non-food items (balloons, etc.).**

Note: Consider using pictures or other media to display prohibited items.
- Can I perform a demonstration?
 - You can perform a controlled demonstration of your project (e.g. bubbles, volcanoes, reactions, etc.). Please ensure you have enough materials to demonstrate to your grade during the school day and again in the evening. Also, please bring in wipes and paper towels in case of spills.

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- If your project uses dry ice, one of your **parents must handle the dry ice AND be present at all times**. Your plan for demonstrating the project must be reviewed before the fair. Please contact **Karen Whitaker** or **Deirdre Blasuccito** discuss.
- Are there awards given as part of the fair?
 - There are no awards given at the fair.
 - Each student will receive a certificate of recognition.
 - NEW this year we will have special recognition for projects that focus on health or the environment with a sticker or tag placed on or near their project.
- Who do I contact if I have questions about what I can or cannot bring?
 - Please contact Karen Whitaker at kwhitaker@verizon.net or Deirdre Blasucci at dvignone@msn.com.
- When do I drop off the project?
 - Drop off projects in the Leopard's Den between 7:00 PM and 8:00 PM on November 1st or between 7:30 AM and 8:55 AM on November 2nd. Please use door #4 from the outside to access the Leopard's Den. **You must park at Lincroft Fields if you are dropping off after 7:45 am.**
- When do I take home the project?
 - All projects must be taken home at the conclusion of the Science Fair. Any project left will be disposed of as there is no storage space.
- When can parents or other relatives visit the Science Fair on November 2nd?
 - Please join us during the designated time based on your child's grade.
 - Gr. 3 - 6:00 - 6:30 pm
 - Gr. 4 - 6:45 - 7:15 pm
 - Gr. 5 - 7:30 – 8:00 pm

What do I do if I have questions?

Please contact Karen Whitaker at kwhitaker@verizon.net or Deirdre Blasucci at dvignone@msn.com.