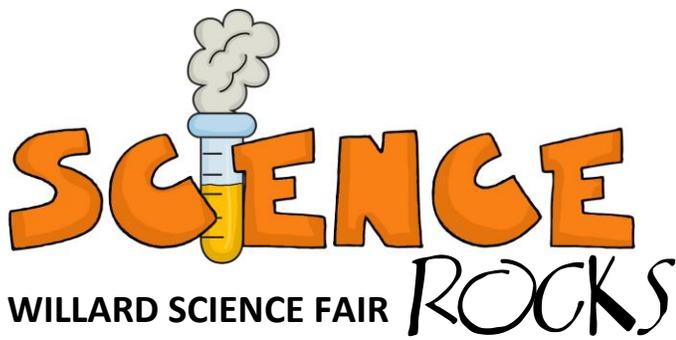


SCIENCE
WILLARD SCIENCE FAIR
March 2, 2017
ROCKS

Please review all pages for reference

AND

Return the sign up form with
registration fee for each participant
to Willard's Main Office
by February 2, 2017



March 2, 2017

GENERAL GUIDELINES

Goal: The Willard Science Fair is an annual event in which our young scientists explore and learn about science. Our Science Fair is non-competitive, as our goal is simply to encourage scientific exploration and discovery and promote a passion for science.

Participants: All Willard students from K-5 are invited to participate. The participation form and fee are to be returned to the office by **February 2**. Students may participate as an individual or in a group of up to 4 students. All participants will receive a T-shirt and a display board for each project. **Registration fee must be paid for each participant of a group project.**

Boards will be distributed at dismissal in the gym on FEBRUARY 10.

T- shirts will be distributed to classrooms on MARCH 1.

Science Projects: The science fair project should be the work of the student. An adult may need to assist, especially young children, but it is important that the children be able to call the project their own. We encourage all students, to perform experiments using the scientific method. Even though you can learn a lot from building a model or display, we recommend that you do an Experiment!!! Why? Well, they are fun, they are more interesting and most of all, they take you through the Scientific Method, which is the way real scientists investigate in real science labs. Each entry should be displayed on the distributed tri-fold Display Board.

Finding a Project: The best topics come from a child's own genuine curiosity about how something works, or why something is the way that it is. But if you have trouble thinking of something, there are many resources available to help you choose a topic.

Animal displays, always a huge hit, will be allowed but the display board should include details about the animal, for example, its behavior, habitat, eating habits, etc.

Prohibited Project Displays: Any project display that is potentially flammable, dangerous, hazardous, inappropriate, messy, or loud, will not be allowed. Also, we are discouraging give-aways as these projects become more about what is given away and less about the science involved. Plus, children tend to group around such projects preventing the flow to other projects. If you have any concern that your child's project display falls into any of these categories, please contact Tiffany Jacobson.

The Day of the Science Fair: Children should wear the previously distributed Willard Science Fair T-shirt during the day and night sessions. During the morning of March 2, please bring your child's science fair project to the auditorium between 8:00 am and 8:35 am. All classes will visit the Science Fair during the school day.

Judging and Awards: In addition to students exploring their peers' projects during the day of the Science Fair, we will also have informal 'judges' stopping by each child's display to ask about their work and give them the opportunity to share in a more structured manner. Participants should be prepared to speak for a minute or two and to answer some questions about their project. We will not be naming winners or scoring the participants or their projects in any way, but feel it is important to give each child a chance to show off their hard work. Each participant will receive a certificate in recognition of their efforts.

The Evening Session of the Science Fair (6:30 PM - 8 PM on March 2): During the evening session, we ask that all students wear their Willard Science Fair T-shirt and stand by their Display Boards during the scheduled times outlined below by grade. We encourage parents, nonparticipating attendees and other science fair participants to walk around the science fair and ask students about their project. **PLEASE NOTE: The Schedule below will be followed to really give students the opportunity to share what they have learned with others. This should be an orderly and systematic process that still allows the participants to view their fellow students work as well.**

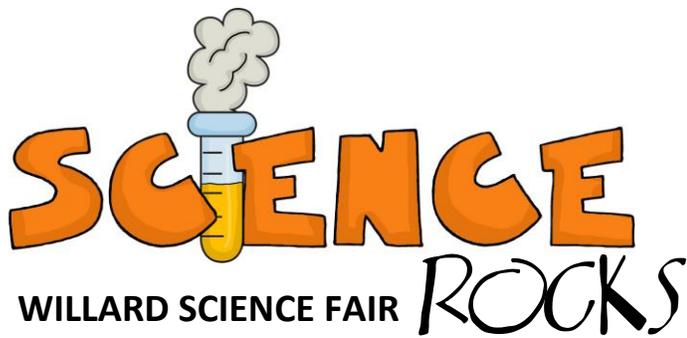
Schedule: Students should remain by their display during their scheduled 30 minute time slot. If it is a group project with participants from different grade levels, the students should present during the scheduled time slot of the oldest participant.

6:30 – 7:00 PM: Kindergarten and First Grade

7:00 – 7:30 PM: Second and Third Grades

7:30 – 8:00 PM: Fourth and Fifth Grades

Questions: Please contact Robin Fisher ▪ ribfisher@gmail.com



WILLARD SCIENCE FAIR

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March 2, 2017

FINDING A PROJECT

When it comes to choosing a topic, the sky is the limit! What have you wondered about? The best topics come from your own curiosity about how something works, or why something is the way it is. But if you have trouble thinking of something on your own, there are many websites to assist in finding age-appropriate science projects. Below is a list of websites that you can check out to give you ideas.

www.sciencenewsforkids.com

www.billnye.com

www.exploration.edu/explore/hands-on.html

www.madsciencekids.com

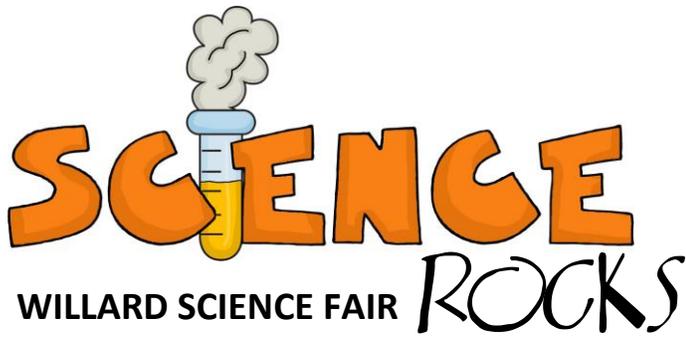
www.sciefun.org/

www.stevespanglerscience.com

Pre-made “science kits” are another great option and can be found at many book stores, discount stores and toy stores, like Target & Toys ‘R Us

The Ridgewood Public Library also has many helpful resources to assist with science fair ideas.

Questions: Please contact Robin Fisher ▪ ribfisher@gmail.com



March 2, 2017

SO WHAT THE HECK IS THE SCIENTIFIC METHOD?

Find a Problem Ask a “How does” question

Research the problem and find out all you can

Make a Hypothesis Predict what might happen based on what you know

Conduct the experiment to find out if you were right

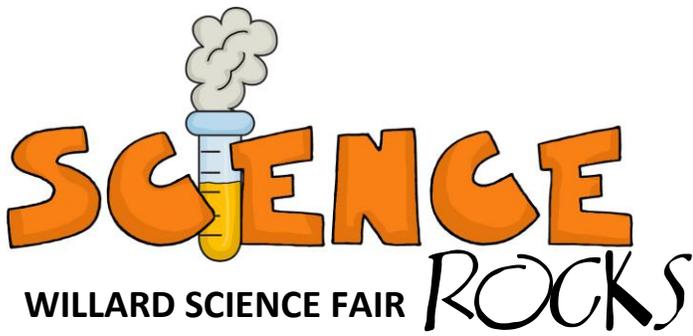
Compile proof by recording data from doing your experiment

Organize your data in table and graphs so that it's easy to see the results

Form a conclusion Check your hypothesis against the results...

Were you right?

Write about what you learned



March 2, 2017

SCIENCE PROJECT SUGGESTIONS AND GUIDELINES

Project Title: Now that you have picked out a topic that you like and are interested in, it's time to come up with a question or identify a problem within your topic. A bold title is catchy but descriptive of the project. To give you some ideas you can start off by filling in the question blanks with the following list of words:

The Effect Question:

What is the effect of _____ on _____?
sunlight on the growth of plants
temperature the size of a balloon

The How Does Affect Question:

How does the _____ affect _____?
color of light the growth of plants
humidity the growth of fungi

The Which/What and Verb Question:

Which/What _____ (verb) _____?
paper towel is most absorbent
foods do meal worms prefer

Research: So you've chosen a topic and even came up with a cool title. Now it is time to research your problem as much as possible. Becoming an expert at your topic is what real scientists do in real labs. So how do you become an expert? You read a lot and you discuss your findings about the experiment before the experiment is attempted. This effort will help formulate the hypothesis. The rough draft of the research including sources for books and websites, or people you talked to about your topic, should be contained on the display board or in a log book.

Hypothesis: Once you think you can't possibly learn anymore you are ready to predict what you think will happen if you test your problem. This type of "Smart Guess" or Prediction is called a Hypothesis. Although many will suggest that a hypothesis is an educated guess, this description is not quite accurate. The Hypothesis not only predicts what will happen in the experiment, it also shows that the "Scientist" used research to back up his prediction. So how do you begin? Well, just answer this very simple Question:

What do you think will happen, (even before you start your experiment)?

Example Problem: Which paper towel is more absorbent?

Example Hypothesis: I think Brand X will be more absorbent because it's a more popular brand, it is thicker and the people I interviewed said that the more expensive brands work better

Materials: List of items you will need to perform your experiment. You can write a list, take pictures or draw pictures of your materials. This will come in handy when you are making your display board.

Procedure: A list of steps or directions that you used to conduct the experiment.

Results: Data showing what happened after you conducted your experiment. Write down or record the results of your experiment every time you test it. You can use tables, graphs and diagrams to show your results. You can even include pictures of yourself doing the actual experiment!

Conclusion and Discussion: Written summary of what the student concludes from the results, the data and a discussion regarding that conclusion. Was your hypothesis right or wrong or neither? Would you change anything about the experiment or are you curious about something else now that you've completed your experiment. And most of all, tell what you learned from doing this.

Log Book: It is recommended that the student keep a notebook or folder of all work – a log book. Your log book can be filled with observations, rough work, including first drafts of data, research, results, and additional questions you might have for later.

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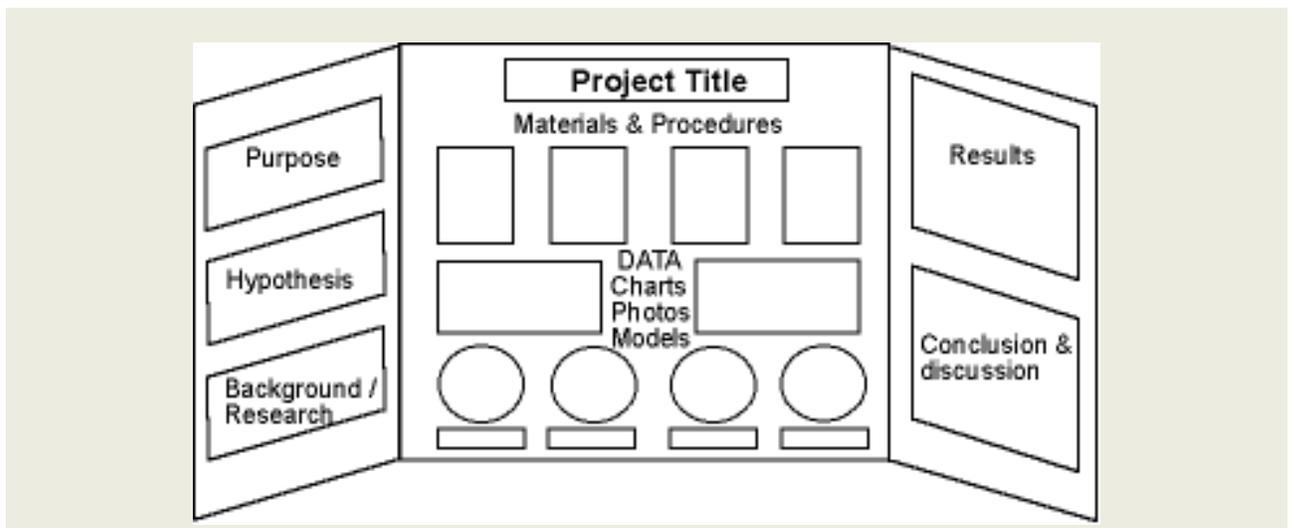
SCIENCE

WILLARD SCIENCE FAIR *ROCKS*

March 2, 2017

MAKE A MOUTH WATERING DISPLAY

Below is an example of a basic format tri-fold Display Board. This format works well for most projects and is the suggested format for participants to follow, but it is just a guide. Depending on your information and the amount of pictures, tables and graphs, you may have a slightly different layout. Please be sure to include the student's name, grade and class on the front of the display board.



Log Book



Experiment Materials



Projects should address a question and outline the scientific method.

Use a font size of at least 16 points for the text on your display board, so that it is easy to read from a few feet away. It is fine to use a slightly smaller font for captions on pictures and tables.

The title should be big enough to easily read it from across the room. Choose one that accurately describes your experiment, but grabs the onlooker's attention.

A picture speaks a thousand words. Use photos, draw pictures or diagrams to present non-numerical data. It is not a good idea to put text on vivid photographs or images. The words can be difficult to read.

Use models that explain your results.

If possible, show your experiment set-up.

Any materials used in the experiment or the actual results of the experiment, along with the log book should be displayed in front of the board.

Make sure such visual pieces fit within the limited space in front of the student's Display Board.

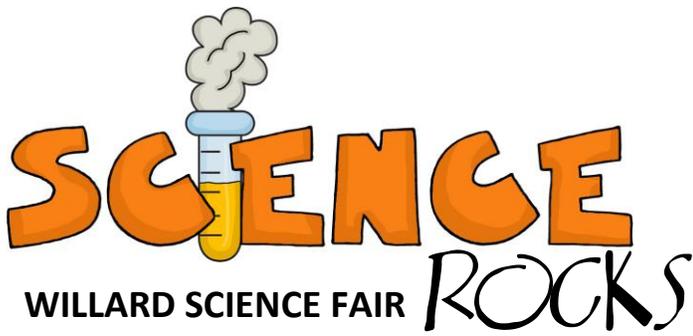
Please make sure to include a tray if any liquid is involved so that spillage does not seep into the neighbor's science fair project display.

Even if your experiment does not provide the results you planned, you can still learn from that experience. Why did the experiment fail? What should I have done differently? What did I learn? All of these findings should be contained on the Display Board under Results and Conclusion and Discussion.

Note for younger children: We realize that younger children may not be able to provide all categories of information discussed. Instead, they should complete as many of the categories as they are able and then fill up the remaining space with pictures of what they did, what they found out, and what they learned.

PLEASE REMEMBER THAT YOU SHOULD HAVE FUN!!!

Questions: Please contact Robin Fisher ▪ ribfisher@gmail.com



March 2, 2017

WHAT TO DO THE DAY OF THE SCIENCE FAIR

Relax, smile, and have fun, remember you are the expert and you had fun doing the project. When answering questions from students and adults just imagine them as fellow scientists who want you to share what you've learned. Here are a few things you can discuss about your project:

- Tell why you chose to study your topic
- Show a copy of your report so they can review your research
- Tell about the steps you took to do your experiment
- Show them all the cool graphics, tables, charts and pictures
- Let them know if you were surprised by your results or if you knew it would happen based on your research
- What did you conclude about your problem
- Make a real life connection that gives a real world purpose to your topic. For example: "My experiment about paper towel absorbency could help people save money by buying the right type of paper towels"

Questions: Please contact Robin Fisher ▪ ribfisher@gmail.com