



THE WILLARD PTO STUDENT SCIENCE & INVENTION FAIR

**Thursday, March 21st 5:15-6:45 pm
Setup at 5:15 pm**

SCIENCE & INVENTION FAIR PROJECT GUIDELINES

Thank you for participating in the Willard PTO Science & Invention Fair!!!! NEW!!! We are adding “Inventions” to the Science Fair! We hope to foster enthusiasm for science, inventions and learning! Students that are registered and participate in the Science and Invention Fair are eligible for science-themed prizes that will be raffled during the fair. The following packet should help answer questions you may have about the process. We look forward to seeing your project!

SIGN UP: This is a **FREE** event, but all students who participate in the **PTO Science & Invention Fair** **MUST** sign up on the [PTO Web Store](#). Make sure you enter your project title in the PTO Web Store sign up as soon as you know it. Students may opt to work individually or in groups of two. If working with a partner, each child should register individually in the Web Store and make a note in the comment section as to whom they are partnering with.

PROJECT DISPLAY: See below for project display requirements for each science or invention project type. Students may display their projects using a **tri-fold poster board** that can be purchased at Jewel, CVS or other supply stores.

SET UP: Please have your child bring his/her project to school fifteen minutes prior to the start of the science fair at 5:15 pm. Students will set up their projects in the gym. Science & Invention Fair presentations will immediately follow at 5:30 pm. Families and friends are welcome and encouraged to attend the student’s presentations. This is a **FREE** event.

What Kind of Experiment or Invention Should I Choose?

Choose any science or invention topic that your child is interested in (for example: sports, computers, music, art, space, environment, etc.) and has sufficient time to carry out. Although the final product is required to come from the student, parents may help their child as much as needed depending on the child’s level. Science & Invention Fair project ideas can come from:

- Teachers, friends/relatives in science, art, and technology professions, or librarians—The Library Learning Center or the public library have some great science and invention books.
- Science & Invention Fair Project workbooks—available in bookstores or libraries.
- Websites: Just type the key words “science fair projects” or “invention projects” into any

search engine. Some of our favorites include:

- o <http://www.sciencebuddies.org/>
- o <http://www.education.com/science-fair/elementary-school/>
- o <http://www.sciencekids.co.nz/experiments.html>

REQUIREMENTS AND GUIDELINES

I. CHOOSE A PROJECT TYPE:

After students select a topic choose one of the 4 project types (see A thru D) for your entry into the Science Fair:

- A. **PERFORM A SCIENTIFIC INVESTIGATION OR EXPERIMENT** in order to find out something, by creating your own procedure (i.e., what soap makes the most bubbles?);
- B. **DEMONSTRATE A SCIENTIFIC PRINCIPLE** following a procedure found in a Science Experiment book to recreate the principle (i.e., surface tension, density, air pressure, etc.);
- C. **CONSTRUCT A SCIENTIFIC OR INVENTION MODEL** (i.e., the human eye, the water cycle, solar and lunar eclipses, robotic device, mechanical invention, etc.); or
- D. **PUT TOGETHER A SCIENTIFIC COLLECTION** of related items either man made or naturally occurring in the environment (i.e., rocks, minerals, insects, etc.) or invention collection of technology or related devices.

II. DISPLAY REQUIREMENTS FOR EACH TYPE OF

PROJECT: PROJECT TYPE A:INVESTIGATIONS/EXPERIMENTS

1. Title: of the project.
2. Purpose: "To find out..."
3. Hypothesis or Prediction: "If... Then... Because..." This is your best guess as to what you think will happen. For example, "if a golf ball and a ping pong ball are dropped from the same height, then the golf ball will hit the ground first because the golf ball weighs more."
4. Procedure: Outline the steps that you followed to do your investigation. If you are unable to display your demonstration set-up, be sure to include drawings or photos of it in the procedure section.
5. Results: of your demonstration. You can show your results using charts, graphs, drawings, and/or photographs.
6. Conclusion: Tell what your experiment taught you (even if your prediction was incorrect). If possible, describe practical applications of your demonstration to everyday life.
7. Resources: must be cited.

PROJECT TYPE B: DEMONSTRATION OF A SCIENTIFIC PRINCIPLE

1. Title: of the project.
2. Scientific principle: of your project demonstrates
3. Purpose:
 - i. "To show how...."
 - ii. "To show that..."
 - iii. "To show why..."
4. Procedure: Outline the steps that you followed to do your investigation. If you are unable to display your demonstration set-up, be sure to include drawings or photos of it in the procedure section.
5. Results: of your demonstration. You can show your results using charts, graphs, drawings, or photos.
6. Conclusion: Tell what was learned from your demonstration. If possible, describe practical applications of your demonstration to everyday life.
7. Resources: must be cited.

PROJECT TYPE C: CONSTRUCTING A MODEL

In addition to the model (including its labeled parts), the display should include:

1. Title and Type: of the project.
2. Purpose:
 - i. "To show"
 - ii. "To construct a model of..."
3. Procedure: What you did in making your model. You may include steps, an outline, sketches, or photos.
4. List of materials and resources: used for constructing your model.
5. List of labeled parts: and a description of their characteristics or functions.
6. Resources: must be cited.

PROJECT TYPE D: PUTTING TOGETHER A SCIENTIFIC COLLECTION

Every item in your collection should have a label that describes what it is, where you found it, and the date it was found. Place items with similar characteristics in groups, and the title of each group. In addition to the items in the collection, your display should include:

1. Title and Type: of the project.

2. Purpose: (“To put together a collection of...”)
3. Classification: Describe how your collection was organized. Be sure to list your groups.
4. Statement about what you learned from assembling your collection.
5. Background Information: about your topic. (Ex; how rocks were formed, scientific names).
6. Resources: must be cited.

LABELS: ALL PROJECTS MUST BE LABELED on the upper left-hand corner of the display materials, as follows:

- Project Type (Category A, B, C or D above)
- Title
- Student’s Name
- Grade Level
- Teacher

MATERIALS: Please use a sturdy, durable material to display your work. Display boards or foam boards are suggested, which are readily available at office supply stores or repurpose cardboard boxes, etc.

SIZE: Your display may be no larger than 4 feet wide, 4 feet deep (front to back) and 4 feet tall (4’ X 4’ X 4’).

HANDLING: We will assume that you will not want your project handled by others. If, however, viewers may touch and experience your project, then please invite them to do so with a sign.

RESOURCES: Provide a list of all resources you have used, including information taken from books, reference materials, web sites, etc. Keep track of resources to reference them on the display board.

III. SAFETY RULES:

- Project displays cannot include nuts or nut products of any type.
- Anything which may be toxic, dangerous, flammable or hazardous is strictly prohibited. We will not allow any open flames or burners, unshielded light bulbs, dangerous chemicals, poisons, etc. Additionally, you may not distribute food to observers.
- You must supply your own electrical or power source if needed. No outlets or extension cords will be permitted or provided.

- No live animals may be used.
- Cultures of molds and bacteria must be completely contained and sealed.

IV. **ORAL PRESENTATION:** All participants will present their project to a friendly Science Mentor and/or to other science fair guests on Thursday, March 21st sometime between 5:45 pm and 6:45 pm. The Science Mentors will be teachers or former science fair mentors. Mentors will use criteria outlined below. To foster the love of learning science, invention, and creativity, we are encouraging participants to share their presentations with their peers as well. Please remind classmates and friends to attend the Science and Invention Fair to support the work of participating students. You do not have to participate in the Science and Invention Fair to attend the event. All admissions are FREE.

V. MENTOR RUBRIC

PROJECT

- Purpose is well defined.
- Adequate time and effort were invested.
- Project is within the student's ability.
- Project relates to the purpose and demonstrates good scientific principles.
- Project meets the criteria set forth for its type:
INVESTIGATION/EXPERIMENT,
DEMONSTRATION,
MODEL, OR
COLLECTION.

DISPLAY

- Content: All parts are present, with complete details as they relate to topic.
- Visual presentation: Neat, well-organized, clear explanations, correct spelling, and creativity.

ORAL PRESENTATION

- Content: Able to explain why project was chosen. Able to summarize project.
- Presenter speaks enthusiastically and in a loud, clear voice.
- Adequate length: one to five minutes.
- Able to answer evaluator's questions about the project.

VI. **QUESTIONS:** For any further information, please feel free to contact:

Jacquelyn Jancius: 914william@gmail.com