

WPA Science Fair Guidelines 2012

Theme: "EXPLORING YOUR IMAGINATION"

Basic Information:

-THE SCIENCE FAIR IS OPEN TO WPA STUDENTS GRADES 4-6. It is strictly optional.

-SCIENCE FAIR ENTRY PROPOSAL FORMS DUE: THUR., FEB 9TH. ENTRY FORMS WILL BE AVAILABLE AT THE FRONT DESK ON FEBRUARY 1ST. THEY ARE AVAILABLE ON THE WPA WEBSITE NOW.

-PROJECTS DUE ON WED. FEB 22ND BY 3:00 PM. PLEASE DO NOT HAND PROJECTS IN BEFORE THIS DATE.

-PROJECTS WILL BE JUDGED BETWEEN 3:00 AND 4:00 PM. STUDENTS MUST BE PRESENT AND AVAILABLE FOR JUDGE'S INQUIRY DURING THE JUDGING OF THEIR ENTRY.

-PROJECTS WILL BE DISPLAYED AT THE AWARDS OPEN HOUSE THAT EVENING AT 6:00 PM. AWARDS WILL BE GIVEN TO ALL STUDENTS IN ALL SCIENCE AND ART CATEGORIES.

Project Selection and Approval

All project ideas must be submitted to the school on the Project Entry form provided and are due February 9th, 2012. The proposal must contain a statement of problem or hypothesis and the proposed procedures for the project. If projects are not within basic guidelines, inappropriate in nature or are otherwise noted as being unsuitable, students will be notified immediately by science fair committee so that adjustments to projects may be made.

IMPORTANT: PRE-PLANNED COMMERCIAL KITS OR MODELS MAY NOT BE USED AS PROJECTS.

SCIENCE FAIR CATEGORIES

STUDENTS MUST MAKE NOTE WHICH CATEGORY THEIR PROJECTS FALL UNDER ON THE ENTRY FORM.

Botany: Subjects such as plants (mosses, seed plants), agriculture, conservation, and forestry. No live plants may be displayed.

Earth and Environmental Science: Projects illustrating principles of geology, geography, and related fields. Also, projects dealing with global change, issues related to spaceship Earth, world Earth Day topics, environmental concerns, extinctions and related fields.

Engineering: Technological devices which are useful to mankind. Also engineering-related fields, such as electricity, civil, mechanical, chemical, aeronautical, and geological.

Health and Behavioral Science: Emphasis on human health and behavior.

Mathematics and Computer Science: Showing any theory or principal of mathematics or demonstrating new ideas for computer software or computer systems.

Physical Science: Basic principles of physics, chemistry, astronomy, meteorology, and related fields.

Zoology: Observing the growth or behavior of animals (invertebrates, vertebrates), genetics, and paleontology. No live or preserved organisms may be displayed.

USING THE SCIENTIFIC METHOD:

ALL PROJECTS MUST USE THE 6 STEPS OF THE SCIENTIFIC METHOD.

- Ask a Question
- Do Background Research
- Construct a Hypothesis
- Test Your Hypothesis by Doing an Experiment
- Analyze Your Data and Draw a Conclusion
- Communicate Your Results

Webpage with detailed explanations of the scientific method:

http://www.sciencebuddies.org/science-fair-projects/project_scientific_method.shtml

TYPES OF PROJECTS :

PROJECT TYPES ARE NOT LIMITED TO THE FOLLOWING LIST, IT IS JUST MEANT AS AN AIDE.

INVESTIGATION: Observe nature (plants, animals, people) and report what you observe. Your purpose is to find out how your specimens behave or function. This type of project should follow the scientific method. Example: Watch prairie dogs; record their barks; photograph their movements; compare their movements at various times in the day or how their movement is affected by weather etc: chart or graph findings.

Comparative Surveys: These surveys are sometimes called natural experiments. Identify two or more groups or classes of subjects that are generally alike but which may show a difference in one or more important factors. Express the difference as a hypothesis. EXAMPLE: "Boys' hearts beat faster than girls' hearts do."

Controlled Experiment: This kind of experimenting involves more complex investigations. EXAMPLE: You might have a group of plants as an experimental subject and another group of the same type of plants as a control group. The independent variable in this experiment is the amount of chemical fertilizer added to the experimental plant group. The dependent variable is the difference observed in the growth of the plants.

Simple Experiment: In this kind of experiment your purpose is to change something. You will be observing what happens as a result of changes. EXAMPLES: Melt an ice cube; incubate an egg; inflate a balloon.

MODEL OR COLLECTION: Construct a model, or exhibit a collection. The purpose is to provide an answer to a question or hypothesis you are presenting. You must be able to explain your model or collection. EXAMPLE: The purpose of a model of a solar home could be to determine the use of solar energy in lowering heating costs. Read; talk to experts; find answers.

BEHAVIORAL AND SOCIAL SCIENCE:- These projects usually involve surveys and/or human observation.

DEMONSTRATION OF A SCIENTIFIC PRINCIPLE: Find a scientific rule or law that is interesting to you. EXAMPLE: Measure lung capacity using several people. The purpose could be to find out if a large lung capacity is an advantage during exercise. Experiment and find the answers.

Exhibit Guidelines

Keep the exhibit neat, uncluttered and to the point. ALL DATA/INFORMATION MUST BE RECORDED AND DISPLAYED ON A STANDARD TRI-FOLD POSTER. No part of an exhibit may require to be attached to walls. Build your exhibit compactly. It must be self-supporting (FREE STANDING). Be sure to make everything sturdy so it can be safely transported. Fasten everything well.

The exhibit displays your project. Use attractive lettering. Make cut-out letters since stencil letters can be hard to read. Use one-color printing to avoid confusion. Spell correctly. Main points should be large and simple. Details must be clear and legible from three feet away.

Roles and Responsibilities

In order to maximize your student's experience, please follow these guidelines and responsibilities.

Student's Role is to:

- Select a topic for the project following school science fair guidelines and gain approval for the project;
- Complete an investigation, model, collection or demonstration of a scientific principle;
- To construct an exhibit and, when the grade level is appropriate, write a report which illustrates and explains the project;
- Use scientific terms in the display and explanation of the project to other students and community members; and
- Be safe throughout entire science project and follow science fair exhibit safety guidelines.

Parent's Role is to:

- Motivate and encourage students while promoting creativity;
- Determine appropriateness of projects submitted;
- Provide information on the topic as a resource person;

- Furnish supplies, transport students and help locate needed equipment;
- Provide space such as a garage or room in the home for student to work on the project;
- Remember that the student is the primary scientist completing the project; and
- Ensure student safety and follow safety guidelines.

BASIC SAFETY DISPLAY GUIDELINES

Anything which could be hazardous to the public, the exhibitor, or other exhibitors is PROHIBITED to display*. Any organism, chemical or flammable substance that is potentially hazardous can not be part of the exhibit.

*An alternative solution to displaying hazardous items: Take photographs of the substances that were used or use a digital camera and create large pictures with a computer printer for display on your board. All media used must give proper credit to it's sources.

Electricity: All projects requiring electricity must make note of it on the entry forms. Only standard electrical outlets will be available, all extension cord must be provided by the student.

All projects will be inspected for adherence to science fair safety guidelines by the school science fair committee.

SCIENCE FAIR COMMITTEE:

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ABOUT OUR SCIENCE FAIR:

This is our second year. The WPA science fair is a PTO-sponsored, school-supported activity that allows students freedom to explore science outside the standard school curriculum.

The purpose of the science fair is to encourage students' interest in science, to develop their inquiry and investigation skills, and to enhance children's pride in completing research projects. Enable students to exhibit their projects and share ideas with other students and community members. In addition to this, participating in the Science Fair will:

- *Provide students with exciting opportunities to work with the scientific method on a topic of their own choosing which need not necessarily relate directly to the curriculum at a particular grade level;*
- *Allows students to be given recognition for participation and merit as well as giving them a valuable opportunity to get feedback from judges and other school community members.*
- *Adhere to standards of effective scientific instruction.*
Projects that "fail" to turn out as expected are important learning opportunity. Experimentation is a very valuable part of learning and "failure" of a project or experiment is considered a valid project for display.