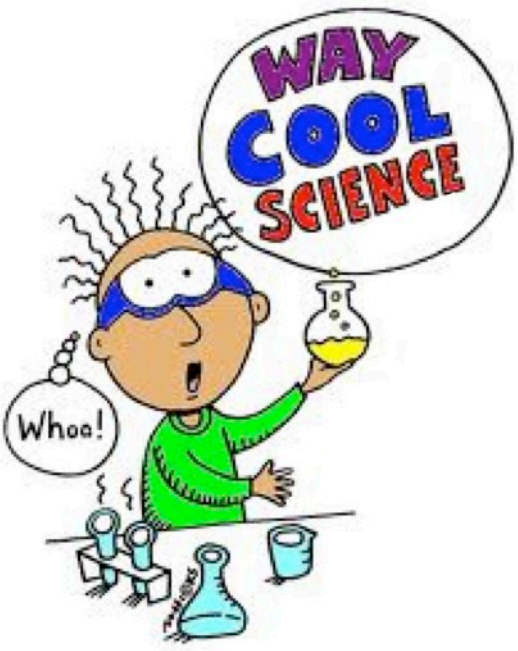
DONLON'S

WAY COOL SCIENCE

FAIR

2016



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Science Fair Vision

Promote:

- Understanding and creativity of the Scientific Method of Investigation.
- Self-discipline necessary to accomplish the project.
- Science education at all grade levels by individual & group presentations of science projects.
- Educational links among parents, school, communities and beyond.

Give the students a sense of pride and accomplishment derived from participating in the Science Fair.

Foster a lifelong appreciation of scientific processes in preparation for life in an increasingly technological society.

FAQ:

What is the Science Fair?

For kindergarten through third grade, the Science Fair is a non-competitive science fair open to all students. The event involves the voluntary preparation and then presentation of a project to peers and a static display of the project board.

For fourth and fifth grade, the Science Fair is a non-competitive science fair mandatory for all students. The event involves the preparation and then presentation of a project to peers and a static display of the project board. The grade earned is part of the Science Lab grade.

What do I need to know as a parent?

K-3rd grade students may work alone or in groups up to 3 students. Students will deliver their project to the MPR on Tuesday May 24 2016 for set up. Specific details about times will be provided.

4th & 5th grade students may work alone or with a partner in the same class. Younger siblings in k-3 are also able to join 4th and 5th graders.

Where can I get a poster board?

Mrs. Hanafee has boards for $4 available at recesses, lunch, due Science Lab time and after school on Wednesdays while supplies last.

Important Guidelines:

- Write your name(s), teacher and grade level on the back of your science poster board
- Use of electrical outlets, open liquids or flame is not permitted

- Experiments cannot be performed at school
- Projects will be displayed on MPR tables by grade level
- Student(s) will be asked brief interview questions to explain their hypothesis, experiment and results on Wednesday, March 4th
- Mrs. Hanafee will have a limited supply of display boards available for a small fee (all proceeds will go to Donlon's Science Program).

Types of Science Fair Projects (for K-3)

1. **COLLECTION**

A collection study is a fun way to learn the proper names of a lot of objects. It involves collecting the objects, describing them, grouping them, and identifying them by their proper name. Examples of a collection might be leaves, insects, seashells, fossils, rocks, coins, or simple machines.

2. **OBSERVATION**

An observation study begins with the selection of a topic and a question that can be investigated by observing. Specific movements, behaviors, or actions in nature might be observed over a period of time, and once the observations are gathered, they are studied for patterns that will answer the question. Examples of observation might be ants' eating habits, pollination process, moon phases, family pet behavior or insect life cycles.

3. **MODEL**

A model study may begin with a curiosity about how something works. It is a way to display the parts of something and how what each part does to carry out a particular function. Examples of functional models may include building an electromagnet, showing how lungs work, making a solar cooker, or connecting wires to show the difference between parallel and series circuits. Another type of model is an enlargement or reduction as a scaled version of an object. Examples of enlarged-scaled models include building a flower model or a cross-section of an apple. Examples of reduced scale

models include making craters on the moon, the solar system, a dinosaur, or a space shuttle.

4. **EXPERIMENT (Mandatory for 4-5)**

An experiment occurs when one variable (the independent variable) is changed. Another variable (the dependent variable) responds to the first and is watched. Other variables (constant variables) remain the same, or are unchanged, throughout the experiment. An experiment answers a question using the scientific method. Examples of experiment ideas might include: "How does mold grow on bread and fruit?" What makes things move?" "How can apples be kept from turning brown?" The key is to take an idea and then turn it into a MEASURABLE, open-ended question.

5. **INVENTION**

An invention can be one of two things. First, it can be something or some process that has never been made or done before (for example, the first spaceship, the first car, or the first airplane). The other type of invention is one in which a thing or process is modified in some way (for example, a better television, a better brake system in a car, or a better mousetrap). Examples of an invention for the Science Fair might be – make a lunchbox that will keep food fresh for 12 hours, make an electromagnet that will pick up 10 nails, or build a bird feeder that will attract only a certain bird (but not squirrels!!!).

The Scientific Method – How to Organize Your Project

1. SELECT A QUESTION

You can answer by conducting an experiment. The best science project comes from a question that YOU want to answer. It is also a good idea to include an explanation as to why you selected the project. Your question should be asked in such a way that it couldn't be answered with a simple yes or no. For example, "How does salt affect the freezing point of water?" is a better question than "Does salt affect the freezing point of water?" The question should be based on fact, not opinion. Instead of, "Which fertilizer works best?" try "Which fertilizer produces more blooms?"

2. FORM A HYPOTHESIS

This is a guess or prediction about what will happen as a result of your experiment. Forming a hypothesis will help you design your procedure, and the experiment will prove or disprove your hypothesis. "I think..." or "I predict..."

3. PERFORM THE PROCEDURE

Plan the details of your experiment. Select the manipulated and responding variables. Decide what things you must keep the same – these are your controls.

a. Determine what you will be measuring and what instrument you will use. b. Select the materials to form the test equipment. Plan how the tests will be done;

Which test will you do first? How many tests will you do? What will be recorded? How many times will each test be repeated?

c. Assemble the equipment to be used in the experiment. d. Prepare data sheets for recording measurements and for your comments.

e. As you perform the tests, enter all measurements on your data sheets. It is important that you repeat each test several times.

4. PREPARE AND EXPLAIN THE RESULTS

Group and organize the measurements you have made. Make charts, graphs, and tables to show what happened. It is a good idea to spend some time thinking about your results and talking to other people about them. Try to explain "how" and "why" the results are what they are. What was the cause? Do the results agree with your hypothesis?

5. DRAW CONCULSIONS

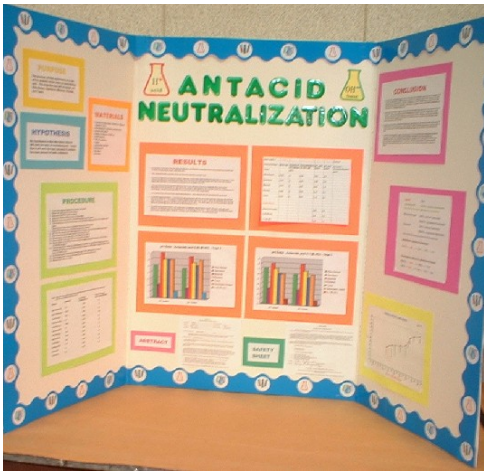
What can you say about your experiment in general? What can you count on happening again if someone else does a similar experiment? If possible, try to describe how your results might apply to everyday experiences.

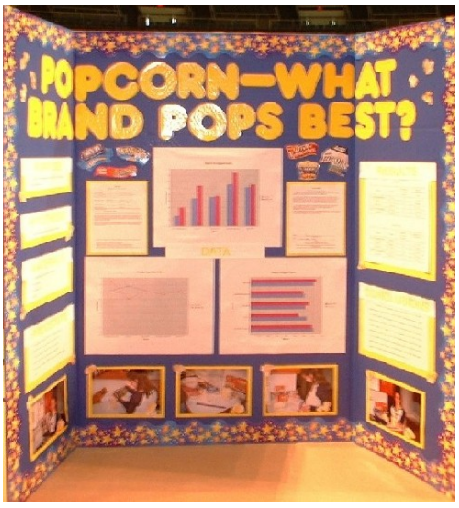
Organizing Your Board

These are headings to label your project board when using a scientific method:

- **Question**
- **Purpose**
- **Hypothesis**
- **Materials**
- **Procedure**
- **Results**
- **Conclusion**

The **question** can be used as the title and should be centered at the top of the board.



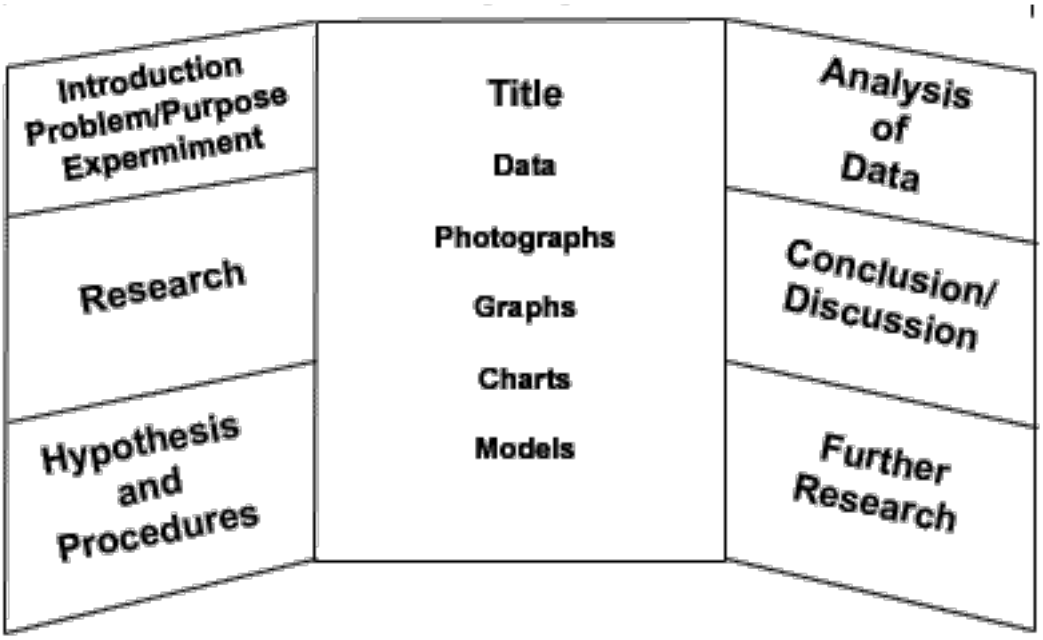


The **purpose**, **hypothesis**, **materials** and any background information should be on the left flap of the board.

The **analysis** and **conclusion** should be on the right flap.

The center of the board is reserved for **results** and pictures of your experiment.

If you wish to bring in your experiment, it must fit within the flaps of your board.



Important Dates:

May 24 – Project due to the MPR

May 25 – Interviews

May 26 – Class visits during school, Science Fair Night during Open House.

May 27 – Take project home.