Ninth Step:

Prepare for the Interview

Your experiment is done.
Your Science Journal is complete.
You've finished your Science Fair Backboard.

Now take some time to prepare for your interview with the judges. Don't be worried....Remember, YOU are the expert on your special experiment. The judges will learn new things from YOU!

Think about the following questions
Name 6 steps of the scientific method and explain them. (You may use your board)

2) Why did you choose this experiment and what did you hope to discover?

3) Were you able to answer your question?

4) If your experiment did not give you the results you expected, what would you change to get the result you wanted?
5) What problems did you run into with your Experiment?
I.e. time, money, locating materials, help
6) What resources did you have available?
I.e. computer, printer, library, after school tutoring

Clayton Elementary
Science Fair 2008

The Science Fair Booklet

2008

April 23

How to do a
Science
Experiment
in
Nine Easy Steps

STUDENT NAME
_____
TEACHER
_____

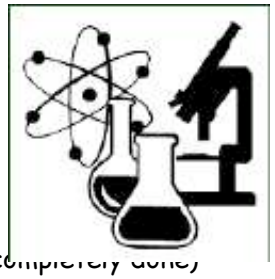
The Purpose of the Vanguard Prep Science Fair:

- To stimulate student curiosity.
- To encourage students who are interested in science.
- To stress the understanding of fundamental principles in science.

Therefore, students will NOT be competing against each other, but will be measured on how well they understand and follow the Scientific Process.

Each elementary student will receive a First, Second or Third Place Award based on the following scale:

Scientific Process Checklist & Rubric



___Problem
___Research
___Hypothesis
___Method
___Data
___Results
___Conclusion
___Science Backboard (Neatly & completely done)
___Science Journal (Handwritten)
___Interview (Demonstrates clear understanding of the experiment.)

_____ 1st Place - Student has completed <u>all</u> of the above steps and the project demonstrates good quality.

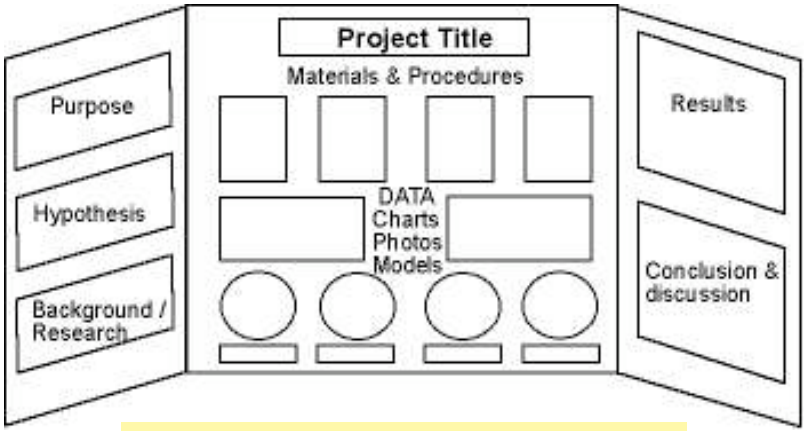
_____2nd Place - Student has missed one of the above steps or the quality is lacking.

_____3rd Place - Student has missed more than one of the steps, average quality, or the project is a demonstration or collection and not an experiment.

Eighth Step:

The Backboard --

Explain your experiment by putting the important information about your project on your backboard.



SAMPLE PRESENTATION

Conclusion --

Look at the results and see how it answers your experimental question. Write your conclusion in your Science Journal.

Problem: Which type of chocolate was the favorite?
Conclusion: My hypothesis was people would like Dove chocolate the best. I was wrong. The people I tested liked Hershey chocolate the best.

Problem: Which diaper holds the most water before leaking?
Conclusion: My hypothesis was right. I thought that the XYZ Diaper Brand would hold the most water before leaking and it held much more water than the ABC Brand.

First Step - Get an Idea...

Problem -

Ask a question that leads to an experiment.

An experiment COMPARES things.

Are you interested in plants, rocks, chemistry, animals, or human reactions? Choose a topic that interests you and then ask a question....

•For example, if you are interested in birds you might ask: What colors of yarn will birds choose to build their nests?

•If you are interested in rocks, you might ask: Which chemicals will make the best crystals?

•If you are interested in human reactions, you might ask: Do older or younger people prefer Coke or Pepsi?

Other ideas:

- •What material is the best insulator?
- •What type of firewood burns longest...or hottest?
- •Do soap bubbles last longer on warm or cold days?
- •What fertilizer helps radishes grow taller?
- •Which antibacterial soap kills the most bacteria?
- •Which paper towel is the strongest when wet?
- •What soils are best to build a house on?
- •How do mealworms react to different kinds of music?
- •Do boys or girls have quicker reflexes?

Other ideas can be found at the Internet Public Library --
http://www.ipl.org/div/kidspace/projectguide/

The question, "Can I make a volcano?" leads to a demonstration. The question, "Can a lemon make a light bulb light up?" is a demonstration. Which makes a light bulb burn brighter, a lemon or an apple? leads to an experiment. An experiment compares things.
When I change _____ I will measure _____.
When I change fruits, I will measure how bright the light burns.
When I change dog food, I will measure which food my dog likes.

Second Step -

Write your problem or question in your Science Journal!

Third Step:

Research --

Find some background information about your project.

Read, talk to people, or listen to TV.

Record what you learn in your journal.

If you are going to do an experiment on plants, you should learn some basics about how plants grow.

- If you are testing your dog to see if he is colorblind, you should do some research about dogs, eyes, and colorblindness?
- If you are testing the strength of paper towels, you should listen to commercials and record the claims made on TV or in the magazine ads.

Fourth Step:

Hypothesis --

- Now that you have learned about your topic, you can make an intelligent guess about what you think will happen in your experiment.
- In your journal you should write your hypothesis.

I believe that the paper towel Brand XYZ will be stronger than Brand ABC because the TV ads claim that it is the best paper towel.

If I place plants under red and green lights, then I think that plants placed under red lights will grow faster than plants grown under green lights.

Fifth Step:

Method --

This is where you record the **exact** steps you will take to complete your experiment. Write each step in your Science Journal.

1. Buy pea seeds.
2. Soak seeds overnight.
3. Fill 3 inch pots to the top with potting soil.
4. Moisten soil in each pot with 3 Tb of water.
5. Plant 2 seeds one-inch deep in each pot.
6.
7.

Sixth Step:

Data/Results --

Record the results of your experiment in your Science Journal. Your data and results can be shown as photos, measurements, charts, and/or graphs.