

Old River Science Fair



Guidelines for Students & Parents

Due Date for Projects: Monday, December 2
School Competition: Thursday, December 5

www.mrsmithsclass.com for more resources

Steps to Follow

1. Choose a **PROBLEM** to investigate.

This usually starts by asking a question like, “What are electromagnets used for?”

2. Do background **RESEARCH**.

This is needed to learn about your topic so that you can develop a Hypothesis

3. Develop a **HYPOTHESIS**.

The Hypothesis is written as a question like, “Will the number of coils on an electromagnet increase the strength of the electromagnet?”

4. Determine your **PROCEDURES**.

Write out the steps you will follow to complete your experiment. Use this to help determine the materials you will need.

5. Gather **MATERIALS** for experiment.

What materials do you need to conduct your experiment? Make a list and then gather your materials.

6. Do the **EXPERIMENT**.

This might take several days or hours to do. Be sure to repeat your experiment at least 3 times. You should have an Independent Variable, a Dependent Variable, and a Controlled Variable (See page in packet for more information).

7. Record the **RESULTS** and write a **CONCLUSION**.

The results should be recorded as you complete the experiment. Show your results in pictures, charts, and graphs. The conclusion tells **Why** you got the results you got. This may require additional research to learn the “why.”

8. Put together your **Project Display Board**.

Follow the guidelines contained in this document.

Restricted Projects Information

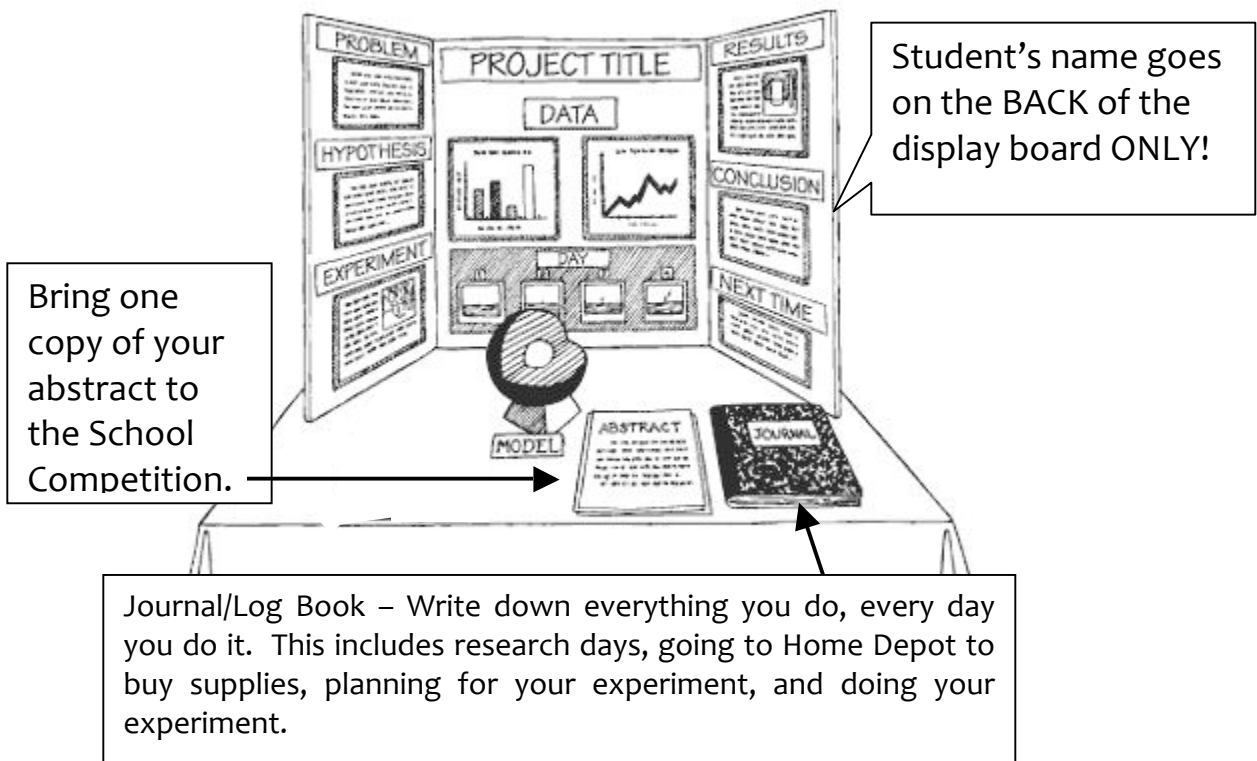
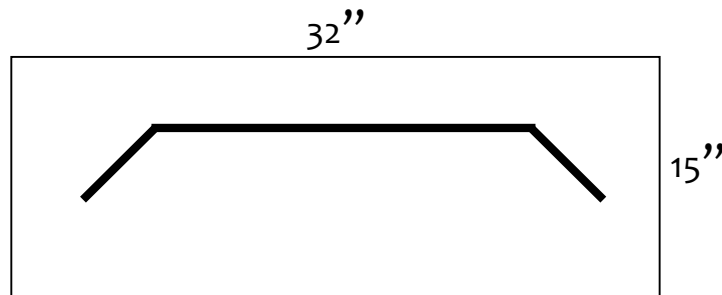
Some Restricted Projects may be allowed under certain conditions. The main concern is student safety. **ALL** approved restricted projects must have a Designated Supervisor, Qualified Scientist, or Informed Consent forms filled out and approved by the County prior to beginning the experiment. Therefore, read the following very carefully:

1. **Human Subjects** – taste tests, monitoring heart rate, surveys, etc, must have “informed consent” by the test subject. **Please see Mr. Smith for the proper forms. You must get approval from Mr. Smith before doing your experiment.**
2. **Potential Risk Experiments** – Basically, any experiment that uses heat, electricity, cleaners, etc. are considered restricted and require a Designated Supervisor/Scientist form to be filled out. Even the use of a microwave oven is considered restricted!
2. **Animal Subjects** – **No animal experiments** are allowed, not even on your family pet.
3. **Pathogenic Agents** – **No pathogenic experiments** are allowed. This includes, but is not limited to, molds, bacteria, fungi, parasites, blood, or other bodily fluids (including mouth swabs, etc).
4. **Controlled Substances** – **No controlled substances** are allowed. This includes, but is not limited to, prescription drugs, alcohol, or tobacco.
5. **Hazardous Substances** – **No hazardous substances** are allowed. This includes, but is not limited to, hydrochloric acid, household bleach, household chemicals, **dry ice**, or any other substance that could be harmful if not handled properly (fire, etc).
6. **Firearms** – **No firearms** are allowed in any experiment, including firearm related items like gun powder, cleaning chemicals, etc.



Display Board Guidelines

The Display Board must fit into a rectangular area 32" wide, 15" deep, and the display can't be more than 36" tall.



No glass items are permitted on or near your display board.
No liquids. No hazardous materials, sharp items, soil, or animal parts (including teeth) are permitted. No unlabeled containers. Pictures must be of student participant only, unless written permission has been granted by the other people in the pictures.

Science Fair Timeline

Science Steps to Follow	Due Date	Parent Signature
1. Make a Project Notebook / Journal (Record everything you do, every day)	9/30	
2. Choose a Problem to Investigate. (What do you want to find out?)	10/1 – 10/9	
3. Write your Hypothesis and turn in to teacher or Mr. Smith. (What do you think will happen?)	10/10	
4. Decide on the Procedures you will use. (Step by step directions) Use this to determine what materials are needed.	10/11 – 10/15	
5. Make a Materials List & Gather Supplies (What do you need to complete your experiment?)	10/16 – 10/18	
6. Do Your Experiment & Record your Results. Then make a Graph, Chart, and/or Table of your data and results.	10/19 – 11/8	
7. Write your Results and Conclusion. (Was your hypothesis correct? (Why did you get the results you got?) **Note: This section may require research to answer the “why.”	11/9 – 11/13	
8. Assemble Your Display Board (Make sure you have included: Title, Problem, Hypothesis, Materials, Procedure, Results, and Conclusion) **Make sure you have NO spelling errors.	11/14 – 11/29	
Thanksgiving Break	11/25-11/29	
10. Turn in your project! It's Done!!!	12/2	

Experiment or Demonstration?

Science Experiment vs. Science Demonstration

Many students (and parents) have a hard time distinguishing between an experiment and a demonstration. **Only EXPERIMENTS are allowed in the Science Fair.** So, what's the difference? An experiment has a variable that changes. For example:

Demonstration

A student mixed baking soda and vinegar that caused a chemical reaction with foam coming out of the top of a volcano model.

In this example, the student is simply **demonstrating** that there is a chemical reaction taking place when baking soda and vinegar come in contact with each other. **There was no variable that changed.**

Experiment

Testing the bounce height of three racquetballs with ball #1 in the freezer for an hour, ball #2 at room temperature, and ball #3 heated under a heat lamp for 30 minutes.

In this example, the student has a variable that is changing, the temperature of the racquetball. The student is trying to determine if the temperature of the ball has an effect on the height of its bounce.

Caution: Many of the “science experiments” found online are actually demonstrations that need to be modified to make them experiments.

Online Resources

www.mrsmithsclass.com

All information, forms, timelines, and resources can be found at mrsmithsclass.com. Just click on the Science Fair link!