



# My child is doing a science fair project... *now* what do I do?

## A guide for parents

Sacramento Regional Science and Engineering Fair  
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Dear Parents,

During the next few weeks, your child will be working on a science project, using the scientific method to solve a problem. Science fair projects involve experimentation on a topic that your child is interested in. The benefits of your child's involvement are numerous:

- ☒ An increased interest in science
- ☒ Increase in self confidence through scientific literacy
- ☒ Development of writing skills
- ☒ Creative thinking
- ☒ Problem solving and independent research
- ☒ Increase in public speaking skills
- ☒ Opportunities to work with professional scientists and engineers
- ☒ A "leg up" on the competition for college, scholarship and job applications
- ☒ A chance to win great prizes
- ☒ An open door to many other types of competitions
- ☒ Opportunities to interact with students from the Sacramento Valley, and in some cases, around the world!

Enclosed you will find guidelines for the science fair. Your child may need you to monitor his/her progress and provide encouragement. Your support is key to a successful project. An impressive project can be completed inexpensively.

Please take time to read the enclosed information. If you have any questions, please contact us at 916.441.3150.

# What are the steps in the “Scientific Method”?

The “Scientific Method” is a list of standard expectations of individual science projects. They are:

- ✓ **Choose a Topic** – Research a topic and develop a Problem Statement.
- ✓ **Form a Hypothesis** – It is okay to start research prior to forming a hypothesis.
- ✓ **Research the Topic** – Do your homework!
- ✓ **Design the Experiment** – Figure out how to design the experiment to produce the data.
- ✓ **Run the Experiment** – Give it a go!
- ✓ **Collect the Data** – Here is where your research pays off!
- ✓ **Draw a Conclusion**– What was the end result?
- ✓ **Prepare the Display**– Prepare display of required information, including an abstract.



# How to Create a Winning Display Board

A winning display board can be created inexpensively without a great deal of time. Sound too good to be true? Well its not! The following outlines some of the information we have gathered throughout the years.

## Overall Appearance

**Display Boards.** Your child's display must be a three-section board constructed of pegboard, masonite, foam core board, hardboard or wood. You can also purchase commercial boards.

**Board Size.** Restricted to 30 inches deep (front to back), 48 inches wide (side to side) and 108 inches high (floor to top, including the height of the table.)

**Board Color.** Your board can be white, or it can be any color you choose. Color coordinating the board to the subject matter is appealing to the eye. Any type of border can be attached to the outer edge of the board. Ensure that all surfaces are clean and neat.

**Header Card.** Adding a header to card to your project provides a focal point in which to display the title of the project. The project must have the same title that was used when the entry form was submitted.

**Title Words.** A judge should be able to approach a science project and immediately identify the different components of a project. Displaying each component on a title card handles this. The following page is a list of title words that your child may use for their project or they can make their own. The list contains all required components of the scientific method. The title words can be black, or any color your child chooses.

**Matting.** Some students like to use matting when displaying sections of the project that are written. Use your imagination!

**Electricity.** If your child's project requires electricity, you must bring a 10 foot extension cord.

**Labeling.** The student's name, and the name of the school, must NOT appear anywhere on the project. Fair officials will add this information after the judging.

**More Information.** For more information, see *International Science and Engineering Fair Display and Safety Regulations: Rules and Regulations, Science Fair Checklist: Step by Step Guide to the Development of Science Projects* at [www.sciserv.org/isef/isefrule.asp](http://www.sciserv.org/isef/isefrule.asp)

## Sample Title Words

PURPOSE

DATA

HYPOTHESIS

ABSTRACT

GRAPH

RESULT

VARIABLES

MATERIALS

# PROCEDURE

# CONCLUSION

## What Else Can I Do To Help?

The effort of the project really does belong to the student. The most important outcome of any science project is what your child has learned as a result of it. Your child will develop stronger abilities in reporting, presenting, researching, and problem solving.

Ways that a parent can help:

- ⚡ Suggesting project ideas.
- ⚡ Help with mechanical or technical work.
- ⚡ Ensuring your child is conducting research in a safe manner and environment.
- ⚡ Offer to assist your child in obtaining additional resources
- ⚡ Purchase supplies to inspire your child's imagination when creating the display
- ⚡ Praise your child with each milestone
- ⚡ Practice with your child on the judging portion of the fair. This will make it easier for your child to talk with judges at the fair.

- ⚡ Compliment your child on a job well done.
- ⚡ Ask questions.
- ⚡ And last but not least... be a good listener!

Being a supportive parent is most important.

The following pages outline the steps to complete the science project, to enable parents to become more familiar with the process.

## Content of Project

### Topic

Have your child choose the topic that he/she is interested in. If they tell you that they can not think of one, have them tell you things they are curious about. You can help your child pick a specific topic.

### Title

Every project must have a title. The catchier the title, the better. Here are some examples of good titles, and, well, not so good titles!

Not so good: Can a dog smell very good?

Good:                   What items can black labs smell better at further distances?

Not so good:       Fabric Absorption

Good:                   Which Types of Fabrics Absorb Liquid Faster?

## Background Information

There are a lot of references out there that can help your child understand the topic they have chosen for their project. These references may include the internet, books, encyclopedias, reference guides, or even scientific professionals. This background information will come in handy for collecting data in a notebook, for the abstract and for the bibliography.

## Hypothesis

A hypothesis is, in essence, an educated guess. Your child's hypothesis may be that a black lab will smell a piece of steak better than a dog biscuit.

## Experiment

Time to experiment! The following items need to be logged:

The Materials: What and how many/how much.

The Procedure: These are the steps taken in order during the experiment. There must be at least three trials (repeating these steps) to be sure of the results achieved.

The Control: A control is part of the experiment that is always kept the same.

The Variables. These are the things that effect the experiment (i.e. weather). Changing the variable on purpose to see the effects is often part of the experiment. A responding variable is what changed or did not change in response to manipulation.

The Data: What happened? Keep all of the data in a log, with times, materials, etc. Use the same words to talk about the conditions. For example, the black lab smelled the steak at two times greater distance than the biscuit. The steak was 10 ft north of the dog, the biscuit was 20 ft north. There was no wind. Etc., etc., etc. Make graphs or tables, or use pictures, to display data.

## Results

State the findings. What were the results?

## Conclusion

The first thing your child should conclude is whether or not their hypothesis was correct. Include descriptions on what may have affected results or how experimental data supported the hypothesis. Also include any new discoveries or new questions.

## Applications

Why was this experiment important? How are the findings useful to others?

# Acknowledgements

Who helped?

# Abstract

An abstract is a short summary of the entire project. It must include a purpose, procedures and results in paragraph form. This should be no more than 250 words. This is usually the first thing a judge looks at after the title.

# Bibliography

Every internet web page, book, interview, magazine, etc must be listed.

## Project Board Display - Example

