



SCIENCE FAIR FOR BUSY PARENTS

TAKING THE "PAIN AND PANIC" OUT OF SCIENCE FAIR TIME

Science Fair is not always easy for parents. Moms and Dads frequently spend hours of their "spare" time working with their kids and pouring over Science Fair projects. This is an important event for your child. A little background knowledge and a few hints can make this time much easier for the parent-half of the Science Fair team—with more fun and more learning for the child-half!

SOME IMPORTANT NOTES

Many of the basic steps of a Science Fair project are reviewed in this handout. It is important to understand that schools, grade levels, and individual teachers approach Science Fair differently. Acceptable terminology and types of projects may vary. It is very important to have your child get his or her teacher's approval at key steps to make sure the direction is correct for the individual circumstances. Science Fair projects usually center around an emphasis on the steps of the scientific method: state the **problem** or **purpose**, form a **hypothesis**, plan a **procedure**, record **results**, draw a **conclusion**. If they are made available to us, local rules for Science Fair projects will be posted in each [Learning is Fun](#) store. (Although not involving the scientific method, some teachers and schools may accept the use of displays, models, collections, and demonstrations.)

THE MORE OF THE SCIENCE FAIR PROJECT THAT IS ACTUALLY DONE BY YOUR CHILD, THE MORE HE OR SHE WILL BENEFIT

Always keep that in mind. Science Fair is meant to be an opportunity for your child to learn more about identifying problems, finding creative solutions, organizing, researching, and completing a major project. It is an opportunity to develop basic skills that he or she will use in everyday life. There is no substitute for your encouragement, guidance, and involvement in a supporting way, but don't feel compelled to be responsible for the project yourself. You can find this to be an exciting time you both will always remember.

FOUR KEYS TO A FUN LEARNING EXPERIENCE

(with less stress for parents)

- 1. Help guide your child in choosing the right topic. It should be interesting and not too difficult for your child to do himself.**
- 2. Assist your child in planning a schedule to avoid last-minute late nights. Choose the topic right away and then plan time frames for each step.**
- 3. Have enough information to understand the process—so you can GUIDE.**
- 4. Keep in mind how much your child will benefit from doing most of the project himself. Winning an award at the Science Fair is great—but the real goal is for every child to learn more about the scientific method and to develop his own thinking skills.**

Choose a Topic.

The topic should match your child's interests. The more interesting the topic, the more fun it will be to investigate...and the more your child will learn.

- Start by having your child think of subjects of personal interest. (*Examples: magnets, pets, garden plants, cosmetics, etc.*)
- Make a list of questions about those subjects. General questions are okay to begin with—just start writing them down. (*Which magnets are stronger? Does fertilizer make plants grow bigger? Are pets healthier if they exercise?*)
- Take the most interesting questions and get more specific. **HINT:** Don't use questions that can be answered with "Yes" or "No." Phrase questions so they can be answered by some kind of investigation (often involving measurement).
- For further suggestions, check the list of over 500 project ideas in the Science Fair Resource Centers at all [Learning is Fun](#) stores.

The topic should match your child's abilities. The topic should be stated as a question that he or she can actually answer in an experiment.

- Does it match your child's age level, capabilities, and background?
- How long would it take to gather the information, finish the experiment, and complete the display?
- What kind of materials would be needed? Are they available? How much do they cost?
- How safe are the materials and procedures?
- How much guidance will be needed from you or others?
- How can the project be displayed? What graphs, pictures, or tables would be involved?

The topic should involve as much originality and creativity as possible. Which of the questions your child selected would produce the best finished project?

THE GOAL: TO CHOOSE A RESEARCH QUESTION YOUR CHILD IS INTERESTED IN THAT CAN BE ANSWERED BY AN EXPERIMENT HE OR SHE CAN DO HIMSELF.

The specific QUESTION chosen as the focus of the Science Fair project becomes the PROBLEM, or the question may be changed into a statement which becomes the PURPOSE.

Have your child talk to his teacher about the QUESTION, PROBLEM, or PURPOSE. This gives the teacher a chance to make suggestions before any other work is done.

Research. Develop the Hypothesis.

Have your child gather background information to help answer his or her topic question. Encourage him to use encyclopedias, magazines, books, newspaper articles, television programs, video tapes, or interviews with professionals in the field. There is a wealth of information on the internet. Support your child by suggesting sources of information and by providing needed transportation to the library or other locations.

After researching, your child can make a careful, educated guess at the answer to his or her question. It should be brief and to the point. The educated guess is called a HYPOTHESIS, and it forms the basis of the scientific experiment.

Example: A child interested in gardening has found that plants use energy from the sun to make their food and that tomato plants do not burn easily in the sun. He can now guess that his tomato plants will grow taller if they are placed in sun all day instead of staying on a shady patio.

The "hypothesis" might be, "I think tomato plants will grow taller in sun than in shade."



Write a Procedure.

Help your child plan an experiment to find out if the hypothesis is right. The PROCEDURE your child writes for this experiment should be clear and complete. Directions must be stated step-by-step and in the correct order, so the experiment could be reproduced later (under the same conditions) and have the same results. Write the PROCEDURE so only one condition is changed at a time, and the effect of that change can be easily observed. The changed condition is called the VARIABLE.

Then have your child list all the MATERIALS needed for the experiment. Be specific with colors, types, and sizes. Remember that metric measures of length, volume, and weight are usually used in science projects.

This is the second critical point where your child's teacher should review—both the step-by-step procedure and the materials list.

Help your child construct a TIME SCHEDULE so the project will finish on time, without last minute rushes and late nights. Start with the project due date and allow time for the following:

1. Gathering materials and supplies
2. Doing the experiment (some experiments involve growing plants, etc.)
3. Making drawings, taking photographs, making graphs and tables
4. Preparing a written report
5. Making a project display

Conduct the Experiment.

- Let your child gather all the materials he or she can. Help with the rest.
- Be sure all the materials are assembled before beginning the experiment.
- Oversee! Make sure your child follows all the steps in the procedure.
- Check everything for safety.
- See that your child makes observations and records results as events occur.
- Help determine if the results are best shown in a table, chart, graph, etc.

NOTE: A Project Log Book is very helpful. It should contain all important information, observations, measurements, and daily notes gathered during the course of the experiment.

Organize the Results. Draw a Conclusion.

Have your child organize the RESULTS of the experimental procedure and make a statement as to whether his original guess (“hypothesis”) was right. This will be the CONCLUSION. Honestly report all results (both good and bad), even if an error is made. Do not change the original hypothesis. Remember that scientists very often find that experimentation does not lead to expected results. The conclusion could start with, “The results show that my hypothesis is (or is not) supported...”

Report, Research Paper, Abstract.

Your child's teacher will know what kind of report is needed. It may include the following: Why was the topic selected? Who helped with the project? What sources provided information? What was the hypothesis? procedure? materials list? results? conclusion? What have others found in related investigations? How can the results be applied?

Put it all together —The Display.

Display guidelines and hints are outlined on the next page. Some states have rules against including various items in the display. (*Examples: live vertebrate animals, live or dead microbial or fungal cultures, flames, etc.*) Experimentation with materials not allowed at the fair can be documented with photographs and/or models. If available, complete local guidelines are posted in each [Learning Is Fun](#) Science Fair Resource Center.