

# How To Do A Science Fair Project

Welcome to the beginning of a great scientific adventurous endeavor! I know you have been waiting anxiously for this moment to arrive. All **5th** grade students are required to do a project as part of their science grade for 2nd semester. We enthusiastically encourage everyone to enter the fair. Projects must be the effort of individual students. **NO MORE THAN TWO STUDENTS MAY WORK ON THE SAME PROJECT** with teacher approval only.

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**CATEGORIES OF PROJECTS:** Life Science-Human, Life Science-Animal, Life Science-Plant, Earth Science-On the Earth, Earth Science-Beyond the Earth, Physical Science.

**CHOOSE A TOPIC:** The first step in doing a science project is to decide on a topic you would like to investigate. Start thinking about your topic right now so you will have plenty of time to do your investigation and experiment. All projects must be done in **experiment form** and include a **lab write-up** and **research report** from your investigations that you do in the library or other source. You must include several sources of information in the report and put a bibliography of sources at the end of the report. Choose a topic that fits into one of the following categories. You must check with the teacher for approval before you begin.

- **Life Science Human:** nutrition, health, body systems, medicine, etc.
- **Life Science Animal:** body systems, genetics, nutrition, etc. This category can include live animals, but a report on a live animal is not a science project.
- **Life Science Plants:** plant growth, flowers, effects of environment on plants, etc.
- **Earth Science-On the Earth:** ecology, pollution, rocks, crystals, erosion, climate and weather, atmosphere, volcanoes, earthquakes, etc.
- **Earth Science-Beyond the Earth:** stars, planets, outer space, etc.
- **Physical Science:** heat, force, sound, light, motion, electricity, magnetism, etc.

**THINK OF A HYPOTHESIS:** The second step is deciding on a hypothesis. A hypothesis is a statement of what you think will happen when you do your experiment or a question you will investigate. Your hypothesis must be something you can prove whether it is true or false.

**GATHER THE MATERIALS AND EQUIPMENT:** After you have decided on your hypothesis, determine the equipment you will need to do your project. Make a list and get everything set up before you begin the next step, which is the procedure. You may want to use a kit from the store as part of your equipment, but remember, **A KIT PUT TOGETHER AND DISPLAYED IS NOT A SCIENCE PROJECT BECAUSE IT DOES NOT HAVE A HYPOTHESIS OR PROVE ANYTHING!!!**

**BEGIN YOUR PROCEDURE:** Now you are ready to write down the procedure for your investigation. The procedure is the exact steps you will be taking to test your hypothesis. Be sure to write them in the order you will do them.

**Example:** put plants in the sun, put water or cola on plant each day, measure and record height of plants each day, see which plant grew more, make a chart showing growth comparison.

Follow your plan. Begin your procedure early enough so that you have time to record the results over a period of time or to do the procedure more than once if necessary. Don't rely on just one test or results from just one day.

Test your hypothesis on several occasions and under different conditions to see if there is any change in the results. Keep accurate records of what you do each time and of the results you obtain. You may want to keep a notebook for this purpose. In addition to notes, you may want to keep a chart showing what you did and the results you observed or to take photographs at intervals to show your results.

**ANALYSIS AND CONCLUSION:** Once you have completed your investigation, you are ready to at your results and determine if your hypothesis was true or false. Remember, you do not have to prove your hypothesis is right. Even if you prove it wrong, you have learned something.

**RESEARCH:** In addition to doing your investigations, you will need to do some research on your topic. Choose an area of your topic that you would like to learn more about and take notes from several sources. You need to include this information when you display your project. This research will assist you in gathering more information and knowledge about your topic.

**DISPLAYING YOUR PROJECT:** The last step in doing your project is getting it ready to display at the Science Fair. Look at the sketch of a display that might be used to present the project. It is important to include all your materials that help show your experiment and all supporting documents for data, analysis and conclusion.

**HINTS FOR DISPLAYING YOUR PROJECT:** Keep your display simple, inexpensive, neat, colorful, accurate, interesting, and within the size limits given. The more creative you are in the use of materials, the more interesting your display will be. Choose two or three colors and limit yourself to this color scheme as you select your backing, lettering, and illustrations. Lettering can be done by hand, stencil, computer or by using rub-on or stick-on letters purchased from the store. A self-standing trifold board like the one in the illustration can be made of cardboard, pegboard, plywood, or foam-core board purchased at art or hobby stores. Make sure you plan and measure the arrangement of the display **BEFORE** you begin any lettering. Don't wait until the night before the fair to begin putting your display together. Also, it is always nice to have parents who are talented and can assist you in your endeavors, but remember the science project is for you to develop in creativity and intelligence. By planning now your parents will not have to run around at the last minute getting material for **YOUR** science project! All the experiments, research and display should be **YOUR OWN WORK!!!**

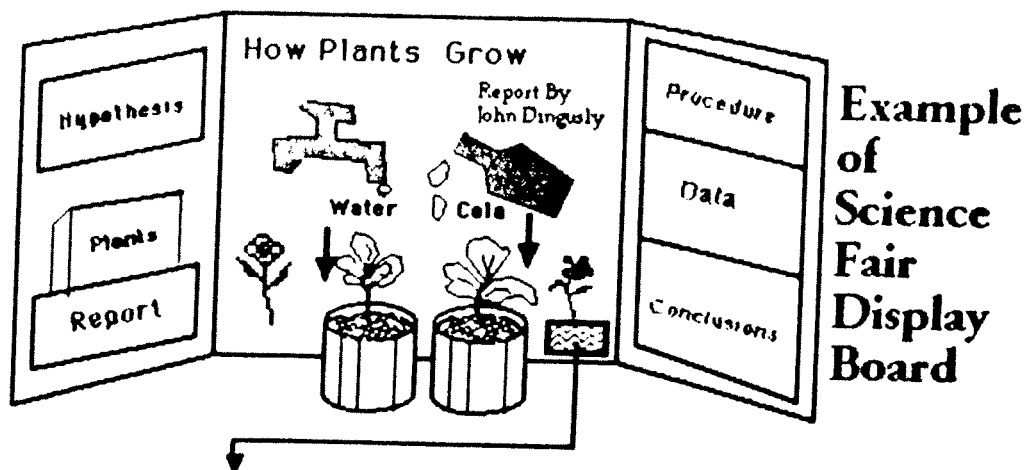
*Time is short and May will be here before you know it. Take the time in the next few days to talk with your parents and friends to find out what you want to do for the project. It must be an experiment and include several pages of research. You might have to show it to the class as a demonstration, so make a good choice of topic and project.*

**RULES FOR DISPLAYING YOUR PROJECT IN THE SCIENCE FAIR:** Make sure you follow these rules for the size of your display. Your score will be affected if your project is oversized, or does not contain the necessary information on the display.

1. You may have no more than **TWO** 18" x 24" posters **OR** one self-standing board no larger than 60" (wide) x 36" (high). Your display may also include other items such as models, machines, or live animals, in addition to

the posters or self-standing board.

2. Your name, category, homeroom number, hypothesis, procedure, results and conclusions must be on your display so that the judges can see it during the judging.



For the judging of your Science Project Display you need to place a 3 x 5 inch card in the lower right hand corner of your display. It must include the following information.

- a. *First and Last name*
- b. *Title of your project - underlined*
- c. *Category of project*
- d. *Science Teacher's name*
- e. *Your grade level*

Go back to Science Fair Info

Name:

Due Date:

Science Fair Project

The class Science Fair will be held on \_\_\_\_\_. It is important that all projects come to school ready for set up at this time. Topics will be chosen and books signed out on \_\_\_\_\_. The goal of this assignment, like many this term, is for each student to work independently, while researching a (science) topic and then prepare an accompanying display and experiment. Each project will follow the scientific method explored in class (see sheet attached). The criteria are straight forward and easily achieved if students start promptly and stay focused during class time given. It is not the complexity of the experiment or topic that is most important, but the process of completing the project's assorted components.

**Criteria:**

**Background Research-** each topic and experiment has scientific ideas that must be understood before the student can begin. An example would be understanding the concept of the effect of temperature on molecules of matter before experimenting with the movement of hot and cold air. This doesn't have to be a huge task just the basic info represented in words and pictures. Notes should be in a separate booklet.

Notes /5 Write-Up /5 Total /10

**Display-** each backboard must show the title and headings of the experiment, be colorful and attractive and show some thought as to the lay-out of the board. The background information should have it's own section as well. Put name on board!

/10

**Experiment-** each student must have the materials they need (seek help from teacher and parents) and follow closely the procedure found for their experiment. They should be able to explain each part of the process (Ex. hypothesis, observations, conclusions etc.)

/10

**Presentation-** the experiment and background information will have to be presented to the teacher and guests. The information must be clearly stated, eye contact made and the experiment carried out or recreated orally. The student should know their stuff and be confident in telling what happened and **WHY**. This way they will show the learning that has taken place for them.

/10

Total /40

Parents, please sign to indicate you know this project is happening and due on the date above.

Parent \_\_\_\_\_ Student \_\_\_\_\_

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

Science Lab

Topic: \_\_\_\_\_

Focus: \_\_\_\_\_

Materials:

\_\_\_\_\_  
\_\_\_\_\_

Hypothesis:

\_\_\_\_\_  
\_\_\_\_\_

Procedure:

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

Observations:

Results:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Conclusions(Interpret Your Results):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# Notes

## Class Notes

Topic: \_\_\_\_\_

Questions/Main Ideas:

Name: \_\_\_\_\_

Class: \_\_\_\_\_

Period: \_\_\_\_\_

Date: \_\_\_\_\_

Notes:

Summary

Topic: \_\_\_\_\_

Sub-topic: \_\_\_\_\_

Name: \_\_\_\_\_

Page: \_\_\_\_\_

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Rough Draft:

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