



Project Guidelines

INVENTION

This document is meant to help guide you during your project. Your goal is to learn all about your project and be confident in your knowledge so that you can teach others what you learned!

We suggest starting your project early and working on it often! You might want to come up with a schedule, or your experiment might dictate how often you will work on your project. This part is completely up to you, but here are a few suggestions.

January

- Decide on a Topic, begin your Preliminary Research, and decide on your problem you are planning to solve.
- Form your team, if desired, and schedule meeting times.
- Submit your project selection form.

February

- Develop a Hypothesis (how to solve your problem).
- Plan the Build
- Test

March

- Retest
- Site resources
- Start your project board

April

- Finish your project board
- Practice presenting to your family, friends etc.

The Scientific Method

PURPOSE: In three sentences or less, tell why you did your science project on the topic you chose.

QUESTION: State the problem in the form of a specific question. The Question is one sentence long and specific.

PRELIMINARY RESEARCH: Research what information there is on your topic that was found by other scientists and relates to your question.

HYPOTHESIS: State your best guess for answering the question before you have performed an experiment!!

POSSIBLE SOLUTIONS: Describe and/or diagram possible solutions you considered. Include a table that shows positive and negative points (strengths and weaknesses) for each. Identify the solution you chose to try, explaining why you chose it.

PLAN & CREATE:

A. **DRAFT PLAN:** Describe and explain the details of how your invention will work.

Show your diagram (drawing) or invention with the parts labeled, using symbols.

B. **MATERIALS:** List and describe the materials you used and briefly tell how and where you obtained them.

C. **BUILD:** Explain how you put your invention together according to your plan.

D. **OBSTACLES:** Make a log of the troubles you run into with materials or the building process. Discuss how you make changes or discover ways to make it work.

TEST & IMPROVE:

A. **TEST:** Use your data log, diagram with labels, and any charts you created to explain the ways you tested your invention. Use two or three sentences to evaluate how well your invention worked.

B. **IMPROVE & RETEST:** Based on your data, describe changes you made to your invention so that it would work even better. Retest.

RESULTS: This is where you show your data and anything you observed. Remember, even if your data shows that your hypothesis was incorrect, your project is still great! Some of science's biggest successes were found by mistake or as a result of another type of experiment failing!

CONCLUSION: Look over your report, graphs, charts and tables. Use two or three sentences to tell what you learned from your experiment. Was your hypothesis valid? Why or why not?

APPLICATION: Now that you have finished your project, use this section to share with others your thoughts about this experience. Did you have any problems? What would

you do differently next time? Explain how what you learned from your project applies to the real world.

SOURCES / BIBLIOGRAPHY: List all books, articles, pamphlets, websites and other communications or sources that you used for researching your topic. You must have at least two sources, and only one may be an encyclopedia. Also, if you received help from parents or others, be sure to credit them here and describe how they helped.

The Display

The display is important because it will help you to communicate your project to the judges and the public during the fair.

Below is an example of a display. You will want to include charts, tables, and even examples of the subject matter or pictures if you cannot bring them along. When you make your display board, remember that this board will be your audience's first impression of your science fair project. It is a display that tells the story of all your efforts. So, it should catch your eye but be simple, neat and well-organized.

Size and Construction: The display board must be sturdy and stand by itself on a table. Foam core-board and cardboard are the best materials and are available at local craft stores. All scientists will receive a 4-foot section of table, so please be sure to have a display board that will fit in that space. Side panels should be 12-18 inches, and the display should not exceed 48" in height.

Sections of the Display: The subtitles which are mandatory on the display board are: Problem (A.K.A Investigative Question), Hypothesis (A.K.A. Prediction), Materials, Procedures, Results and Conclusion. If you used sites or books for your project, you should also include your sources.

Your display should be an overview of your experiment. Graphs and charts of the data you observed should be placed on the display board. Photos and drawings of your experiment are very useful here too! Make the display fun and easy to read, use large clear lettering, and check grammar and spelling.

******Mandatory Safety Requirements*******

No part of your display may pose a safety hazard. Do not include harmful chemicals, bacterial cultures, sharp objects, or any source of heat or flames. No live or preserved animals are allowed.

