

Science Fair Guidelines

You are required to turn in 3 parts to your science experiment

A. A backboard

B. A science journal

C. A research report

A. The Backboard

On the left side you should include:

1. The **Problem** – identify the problem (in question form) and purpose of the investigation
2. The **Hypothesis** – using a form of “If I use/do...., then... will happen because...”
3. The **Materials** – a list of items used (including size, quantity, type) to repeat the experiment
4. The **Procedure** – listing each of the steps you followed in the correct order (Be specific in your explanation of what you did. Say: Put 10 ml of water into the plastic cup. Not: Use water)

If there is not enough space on the left side for the procedure, it may be included on the right side.

On the right side should be:

1. The **Procedure** (if not already included on the left)
2. The **Results/Data Analysis** – Includes a paragraph summary of the data you collected. (for example – In trial 1, Albertsons’ popcorn has 243 popped kernels and Orville Reddenbacher popcorn had 250 popped kernels. In trial 2,... In trial 3,... The average number of popped kernels for Albertsons was... The average number of popped kernels for Orville’s was... Use only technical data to explain the graph or chart. No opinions or reflections on the information.
3. The **Conclusion** – shows your interpretation of the information. The conclusion must directly relate back to the hypothesis. It tells what happened in the experiment and whether your hypothesis was proven correct. (In conclusion, the data showed my hypothesis was... This is because.... I found out that... Good conclusions include a **justification** for the experiment. My family eats a lot of popcorn so I wanted to find out which was the better value. It would also include an **extension** – Next year I would do the same experiment, but I would include movie theatre popcorn in the results because... An **analysis of experimental flaws/changes** (what you did incorrectly) is also recommended. Next time I would change... because...

In the center of the backboard you should include:

1. A **Title** – A clever phrase or description of your project (Can be the problem restated)
2. A **Graph** – showing a graphical representation of your data (measurements must be metric)
3. **Pictures** – photos performing the experiment (must be labeled)(only hands or arms, no faces)
4. Drawings (if no photos are available – a drawing of what the experiment looked like or flat samples of materials used like wool socks or cotton balls)

Please do not attach or bring in your physical experiment. We do not want bread mold, glass jars, plants, models, etc. brought in.

Please remember that presentation is important. If possible, type up your information to put on your backboard or print neatly in dark colors. Use larger fonts to make it easier to read. Use stickers, construction paper, border, markers, etc. to enhance the look of your project.

B. The Science Journal (in a folder/report cover)

Your journal should include the date and time you performed each step of your experiment. It should include all measurements *taken in metric form*.

- 1/20/01 4:20 PM I measured the height of each plant and found that Plant A was 15 cm tall, Plant B was 10 cm tall and Plant C was 18 cm tall
- 1/22/01 4:10 PM I measured the height of each plant for the second time and found that the heights remained unchanged.
7:30 PM I researched plant growth on the internet and found that...
- 1/23/01 3:50 PM I measured the height of each plant for the third time. Plant A was...

You may include brief summaries of research that you found over the course of the experiment. *You should not include line items such as going to the store to purchase things, writing up the experiment, or making your backboard.*

The journal does not need to be typed and should be in rough draft form. It should be like an ongoing diary during the experiment. Minor spelling errors are okay. It should show work done over time and should begin with the selection of the topic.

C. The Research Report (in a separate folder/report cover)

Your report should include the following items in order:

1. **Title Page** – list title of project, your name, grade level, due date (February 2003), teacher's name
2. **Abstract** – brief summary (100 words) about the experiment, your conclusion and the importance of the work.
3. **Acknowledgement Page** – given recognition to those who helped with the project (for example – I would like to thank my parents for..., the Orville Reddenbacher popcorn company for sending me information and samples of popcorn, Mrs. Bailey, the librarian for..., etc.)
4. **Table of Contents** – a list of items in the report and the page number where it's found
5. **Duplicate copies of everything on your backboard** (problem, hypothesis, materials, procedure, graph, data analysis, conclusion)
6. **Research** – minimum of 500 words of info. you researched about the subject of your experiment. This can include internet research, book research, company interviews, etc. written in the student's own words. *Photocopies of articles or printouts of internet sites are NOT acceptable.*
7. **Glossary** – a list of at least 5 words related to the experiment and their definition as researched by the student. The words should be of appropriate difficulty. (The words plant, water, and soil are not acceptable.) Please do not copy the dictionary definition exactly. The student should understand the meaning of the words.

For example – photosynthesis: the process by which plants manufacture food and oxygen using water, light and chlorophyll.

Not – a synthesis of chemical compounds with the aid of radiant energy and light where chlorophyll containing tissues produce carbohydrates when exposed to light.

8. **Bibliography** – a list of sources used to collect the research (minimum of 3) listed in alphabetical order by author's last name.