

Cottonwood Elementary Science Fair Schedule

Friday	February 12	Entry form due
Tuesday	February 16	Registration and Check-in
Wednesday	February 17	Project Presentations to Judges
Thursday	February 18	Final Round of Judging
Friday	February 19	School Walk-Through
Monday	February 22	Awards Assembly

Why Science Fair?

Science fairs give students the opportunity to study a topic that interests them. Projects can be as varied as your students' interests, such as sports, music art, rocketry, psychology, and computers. Through their projects, students will discover that science is found in every niche of the universe.

Further, science projects allow students to:

- Use the scientific method to develop an understanding of controls and variables.
- Take an open and creative approach to problem solving.
- Sharpen their writing skills.
- Gain skills in literary use.
- Learn that a successful outcome is based not on personal opinion but on scientific fact.
- Develop time management skills.
- Develop public speaking skills as they present projects to classmates and judges.
- Compete in a science fair where students are recognized for academic achievement. The judging process also provides students with the invaluable experience of developing poise and thinking on their feet.
- Have opportunities to win scholarships, awards, internships and other field experiences with local science providers. There are money prizes and trophies for grades 5-8.

Student Check List

- Pick a topic
- Ask the “big question”
- Get approval from teacher
- Research the topic
- Make the hypothesis
- Organize and Plan the experiment
- Conduct the experiment
- Keep track of data
- Do more than one trial
- Analyze the results
- Make conclusions
- Get the Project Data Book ready
- Write up summary report (optional)
- Create Display board
- Practice your presentation
- Bring to Fair: Display, Project Data Book,
Summary report

The Scientific Method

1. Research
2. Identify a Problem
3. Ask an Appropriate Question
4. Develop a Hypothesis
5. Conduct an Experiment (with 1 variable)
6. Keep a Record
7. Analyze the Result
8. Draw a Conclusion

Projects

Projects must fit within one of the following categories:

- Animal Science
- Behavioral & Social Science
- Cellular and Molecular Science
- Chemistry
- Computer Science
- Earth Science
- Engineering
- Materials and Bioengineering
- Electrical and Mechanical
- Energy and Transportation
- Environmental Science
- Medicine and Health Science
- Microbiology
- Physics and Astronomy
- Plant Science

For more detailed information visit www.sciserv.org/isef/categories.asp

Team Projects

Team projects are allowed. Teams may consist of up to 3 students.

Project Data Book

Each project needs to have its **project data book** in the display. The project data book will contain detailed notes about the process of the project. Data tables, information collected and observed will be recorded here. Make sure that entries in the data book are dated! This can be a handwritten section of a notebook. There should be lots of information in this project data book (ideas, amounts, steps, errors, results, dates, drawings, formulas etc.). This is also where students should place Informed Consent Forms for human test subjects.

Hints for Keeping a Project Data Book

A project data book is your most treasured piece of work. Accurate and detailed notes make a logical and winning project. Good notes show consistency and thoroughness to the judges and will help you when writing your research paper.

- Don't remove any pages. Simply put a line through errors.
- All pages should be numbered before any data is entered.
- All entries should be dated.
- Each new entry should begin on a separate page.
- Use more than one notebook if necessary.
- Don't put rough drafts of the research paper in the notebook.
- All entries must be legibly printed.

Contents of the Project Data Book

- List of potential science fair projects
- Project title
- Experimental design. Identification of variables etc.
- Data Tables (Raw and Summary Data)
- Regular observations (similar to a diary)
- Calculations
- Graphs
- Reading notes from literature pertaining to the project, including references and citations

Documentation: The proof that the experiment was completed

- Date all entries in the Project Data Book
- Photograph whenever possible. Photograph the progress in various stages when possible
- If scientific equipment is used (Spectrometer, HPLC, IR, NMR,) save all print outs from the machine
- If the project is to be a continuation from past years you must have all your old notebooks
- The burden of proof that the project was completed is on the student. To avoid any questions as to the validity of your experiment you should document everything

Display of Project

What is allowed in the display booth?

- Display board
- Project Data Book
- Summary Report (optional)

Display size: tri-fold display board (available in district warehouse)

Items Not Allowed in Display at the GSD or Regional or National fairs:

1. Living organisms, including plants
2. Taxidermy specimens or parts
3. Preserved vertebrate or invertebrate animals
4. Human or animal food
5. Human/animal parts or body fluids (for example, blood, urine)
6. Plant materials (living, dead, or preserved) that are in their raw, unprocessed, or non-manufactured state (Exception: manufactured construction materials used in building the project or display)
7. All chemicals including water
8. All hazardous substances or devices (for example, poisons, drugs, firearms, weapons, ammunition, reloading devices, and lasers)
9. Dry ice or other sublimating solids
10. Sharp items (for example, syringes, needles, pipettes, knives)
11. Flames or highly flammable materials
12. Batteries with open-top cells
13. Awards, medals, business cards, flags, endorsements and/or acknowledgments (graphic or written) unless the item(s) are an integral part of the project
14. Photographs or other visual presentations depicting vertebrate animals in surgical techniques, dissections, necropsies, or other lab procedures
15. Active Internet or e-mail connections as part of displaying or operating the project
16. Glass or glass objects

So what does this really mean? Bring the student, the display board and a project data book. Leave all the other stuff at home (bottles, samples, machines, plants, etc.). Take lots of good pictures and place them on the board and in the project data book instead.