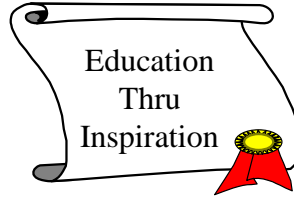


STUDENT/PARENT SCIENCE FAIR PACKAGE



STUDENT THINGS TO DO:

1. Choose science fair topic that interests you. Please visit Endeavour Center website, www.endeavours.org, click Programs, Science Fair Projects. Fill out Central Coast Science Fair entry form and send it in before 8 April 2011 (Friday).
2. Read the following enclosed science fair forms: Statement of Purpose, Project Guidelines, and Project Backboard Format.
3. Utilize the Science Fair Investigation - Student Check List. Don't wait until the last minute to complete Science Fair Project.
4. Have Fun!

PARENT THINGS TO DO:

1. Read and sign the Central Coast Science Fair entry form.
2. Read the Central Coast Science Fair 2011 Agenda and Science Fair Statement of Purpose. Encourage child to complete project.
3. Sign the Certification of Humane Treatment of Live Vertebrate Animals if your son/daughter science project involves animals.
4. We hope you can actively participate. Thank you.

ST&PARSF.ppt



Statement of Purpose

2011 Central Coast Science Fair

Written by Edmund Burke, Endeavour Center, Founder
www.endeavours.org

A note to the parents:

The 2011 Science Fair mission is to provide your son/daughter an experience into the world of creativity and thinking in science, engineering and mathematics. We hope they will consider a high-tech career in the future. Engineers, scientists and educators from the Endeavour Center, Vandenberg AFB and the community are donating their time to run a first class Science Fair.

We would appreciate your support by providing: 1). Positive assistance at home for the two month science project endeavor. A continuous effort (1 - 2 hours a week) is much better for your son/daughters growth than a last minute attempt. It's very important for you to keep the enthusiasm going at home with constant encouragement and help. One way to do this is to take your son/daughter on a weekend nature trip relating to their project (i.e. science museums, zoo, park, etc.). 2). Transportation to the Science Fair event at Endeavour Center, Vandenberg Middle School (just outside VAFB Main Gate). We strongly encouraged for you to participate (8-12 AM). Other Student Science Events will be going on in parallel with the Science Fair (Rocket Launches, etc.) in the time when the students are not being judged. The Science Fair will be held on Saturday, the 7 May 2010 (8-12 AM). Set up of the student science projects will be from 7:30 – 8:00 AM on the 7 May (Saturday) or 5 - 8 PM on the 6 May (Friday) at the Endeavour Center Auditorium at Vandenberg Middle School. An awards ceremony will be held on the evening of 7 May 2011, Saturday (7-8 PM).

A note to students:

Already you probably have many questions, such as "What is a science project supposed to look like?", "How is it to be put together?", "What am I supposed to choose as a topic?", "Who's going to help me?", "Once I choose a topic, then what?", "How is it going to be graded?". These questions, and others you may have, will be answered as you read through the attached pages and/or when your science teacher fully explains the exciting activity.

One thing is certain, however, and it is that a Science Project is an involved endeavor, one that should not be taken lightly. It will require a great deal of your time with planning, researching, experimenting, evaluating, writing and constructing. So try to put a few hours a week into your project. Don't wait until the last few weeks to begin working on the project.

2011 CENTRAL COAST SCIENCE FAIR AGENDA

Friday, May 6, 2011

5:00 p.m. - 8:00 p.m., Endeavour Center (www.endeavours.org), Vandenberg MS Auditorium

- Students will be able to check-in and display projects. Students will be assigned a table display area and specific time for judging. Students planning to be judged Friday evening are **required** to indicate so on Entry Form; **NO EXCEPTIONS**. Those students planning to be judged Friday evening, should be prepared for immediate judging upon display set-up.

Saturday, May 7, 2011

7:30 a.m. - 8:00 a.m. Endeavour Center (www.endeavours.org), Vandenberg MS Auditorium

- Students/parents will be able to check-in projects, receive table assignment area and judging time, and display projects. Students are asked to form a line at the appropriate table based upon grade level, 4th through 12th. Signs will be placed for direction. Parents and School Science Teachers who have volunteered to judge, supervise, or just plain participate are asked to arrive at 7:30 am.

8:00 a.m. - 12:00 noon Endeavour Center (www.endeavours.org), Vandenberg MS Auditorium

- Student project judging will commence. Students are invited to participate in our planned activities outside of the Auditorium. Please do not hinder or hang around other students while they are being judged. This is annoying and you will expect similar responsible behavior from others while you are being judged. When your time comes to be judged, be **prompt** and ready immediately as judges arrive; **NO EXCEPTIONS**. Realize judges will be on a tight schedule to complete activities within three hours, so be prepared. A well prepared and thought out presentation will be more pleasing to the judges when scoring points in the different areas. Planned activities include:
 - Model rocket build/launch competition (supervised outside)
 - Endeavor Center Open House

12:00 noon - 1:00 p.m. Auditorium

- Judging Team lunch hour

1:00 p.m. - 3:00 p.m. Auditorium

- Judging Team awards decision meeting (Closed Session). Supervisors of planned activities will be asked to complete activities by 2:00 pm. Students are asked to vacate Maple High School at 2:00 pm so that preparations may be made for this evening's Awards Reception.

3:00 p.m. - 6:30 p.m. Auditorium

- Auditorium will be closed to decorate projects with ribbons and prepare the auditorium for the Awards Reception. Student and parents are asked not to return early. We know all are excited to find out how they performed, but we must have this time to prepare.

6:30 p.m. Auditorium

- Auditorium will be opened for student/parents to arrive for the Awards Reception. Students are asked to keep project on display throughout the entire awards presentation. Please, informal attire is preferred. Individuals, parents, company representatives, or school administrators and faculty representatives presenting awards are asked to arrive at 6:30 pm to be briefed on order of presentation.

7:00 – 8:00 p.m. Auditorium

- Awards Reception commences. Student/parents are asked to remove their projects immediately following the conclusion of the reception. Any projects intentionally left will not be able to be returned after this evening.

CENTRAL COAST SCIENCE FAIR JUDGING SHEET

1. CREATIVITY (20 points)

- | | |
|--|---------------|
| a. Unique project or original approach to old problem. | 1 2 3 4 5 6 7 |
| b. Materials and processes applied ingeniously. | 1 2 3 4 5 6 7 |
| c. Student shows interest in project. | 1 2 3 |
| d. Objective is practical and intriguing. | 1 2 3 |

Total: _____

2. APPLICATION OF SCIENTIFIC PROCESS (55 points)

- | | |
|--|---------------|
| a. Hypothesis or goal clearly stated. | 1 2 3 4 5 |
| b. Depth of research. | 1 2 3 4 5 6 7 |
| c. Appropriate experiment or study designed to test hypothesis or satisfy goal. | 1 2 3 4 5 6 7 |
| d. Data collection techniques are precise, repeated, and appropriate to problem. | 1 2 3 4 5 6 7 |
| e. Orderly recording of procedures, experimental progress, and data. | 1 2 3 4 |
| f. Comprehensive and accurate analysis of data appropriate to age group. | 1 2 3 4 5 6 7 |
| g. Conclusions are logical, supported by data, and relevant to scope of project. | 1 2 3 4 5 6 7 |
| h. Demonstrates appreciation of relevant applications and further study. | 1 2 3 4 |
| i. General evidence of personally performing all project tasks. | 1 2 3 4 5 6 7 |

Total: _____

3. DISPLAY AND PRESENTATION (25 points)

- | | |
|--|---------------|
| a. Accurate and informative title. | 1 2 3 |
| b. Display clearly explains project and results. | 1 2 3 4 5 |
| c. Graphic appeal and pride of workmanship evident in display. | 1 2 3 4 5 |
| d. Technical clarity and thoroughness of oral presentation and discussion. | 1 2 3 4 5 6 7 |
| e. Demonstrated confidence and poise in speaking. | 1 2 3 4 5 |

Total: _____

Judge _____ Grand Total: _____

Entry # _____ Grade Level _____

Project Title _____

Please include constructive comments on back.

SCIENCE FAIR

Project Guidelines

1. **Groups.** Students may work on projects in groups of one to a maximum of four.
2. **Dimensions.** The project display must fit within a space of 48 inches wide, 30 inches deep, and nine feet high. A table which is 30 inches high will be provided.
3. **Power.** Electricity (120 VAC) will be provided. Exhibitors must furnish 9 foot grounded extension cords. Batteries may be used as required.
4. **Display**
 - a. **Construction.** Construction must be durable and all parts must be firmly attached. No attachment to the table or the walls is allowed. Proper back support must be provided for each exhibit.
 - b. **Security.** Give careful thought to topic and type of display. Although precautions are taken, the AIAA and the schools are not responsible for theft or vandalism of project materials. Expensive, rare, fragile, or "tempting" objects are not suitable for display, unless you can devise proper security.
 - c. **Kits.** Purchased kits and models may not be used as the primary exhibit, but they may be included if they help explain or demonstrate a larger fact.
 - d. **Other written material.** A paper describing the research, notebooks, computer programs, or other relevant materials are encouraged and may be displayed.
5. **Animals.** Experiments with vertebrates are regulated by International Science Fair Regulations. The experiments must:
 - a. Have clearly defined **objectives** requiring the use of animals to investigate a scientific problem;
 - b. Be under the **supervision** of a teacher, doctor, or other qualified adult;
 - c. Have the adult supervisor's **signature** on the entry form verifying humane treatment and proper care of animals; and
 - d. Animals must be taken **home immediately** after judging.

No preserved animals or parts may be exhibited at the fair. Photographs are acceptable.
6. **Humans**
 - a. **Human Tissue.** The exhibition of human parts is prohibited except teeth, hair, nails, histological sections and liquid tissue slides properly acquired.
 - b. **Use of Human Subjects.** To avoid possible exposure to physical or psychological risks, students should be discouraged from undertaking research involving human subjects in either behavioral or biomedical studies.

SCIENCE FAIR

Project Guidelines

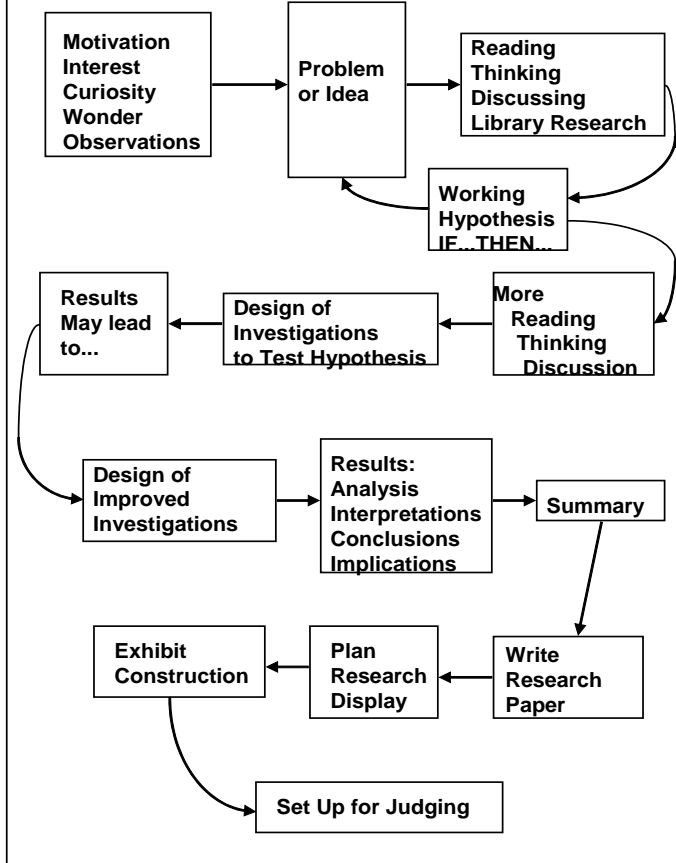
7. Safety

- a. Anything that could be hazardous to display in public is prohibited. This includes:**
- o Live insects, or live disease-causing organisms which are pathogenic to invertebrates.
 - o Microbial cultures or fungi, live or dead, including unknown specimens.
 - o Food, either human or animal.
 - o Chemicals or substances included on the Federal list restricted to experimentation at the college level or above.
 - o Flames, open or concealed, or flammable display materials.
 - o Caustics, acids, or dangerous chemicals.
 - o Combustible solids, fluids, or gases (inert substitutes may be used for display).
 - o Tanks which have contained combustible gases, including butane and propane.
 - o Syringes, pipettes, and similar devices.
 - o Operation of a class III or IV laser.
- b. Operating exhibits must comply with the following:**
- o Exhibits producing temperatures exceeding 100 degrees Celsius or 212 degrees Fahrenheit must be adequately insulated.
 - o Batteries with open cells are not permitted.
 - o High voltage equipment, large vacuum tubes, or dangerous x-ray generating devices must be properly shielded.
 - o High voltage wiring, switches, and metal parts must be located out of reach of observers and designed with an adequate overload safety factor.
 - o All wiring must be properly insulated. Nails, tacks, or non -insulated staples must not be used to fasten wiring.
 - o Bare wire and exposed knife switches may be used only on circuits of 12 volts or less; otherwise, standard enclosed switches are required.
 - o Electrical connections in 120 volt circuits must be soldered or fixed under approved connectors and connecting wires properly insulated.
 - o Please see safety precautions for substances in the booklet "Safety in Academic Chemistry Laboratories" published by the American Chemical Society (1155 16th Street NW. Washington DC 20036).
- c. Science Fair officials reserve the right to remove any exhibit that is deemed objectionable or hazardous, whether or not the objectionable or hazardous feature is listed above. The above listing is a guide which may not be all inclusive.**

Science Fair Investigation - Student Check List

- 1. Select your topic or problem.
- 2. Fill out the entry form.
- 3. Obtain signatures for the entry form. All projects require Teacher-Supervisor Certification.
- 4. Prepare your time schedule. Plan to work on your project at least 3 times per week.
- 5. Conduct research in the library.
- 6. Write a statement of your problem or idea.
- 7. Make a preliminary outline.
- 8. Search the literature.
- 9. Read and take notes.
- 10. Revise the outline.
- 11. Refine the statement of your problem.
- 12. Develop your working hypothesis (IF...THEN...).
- 13. Design your investigations, experiments, and/or observations.
- 14. Obtain necessary supplies and equipment.
- 15. Control variables.
- 16. Record your results (data).
- 17. Organize your data (graphs, charts, tables).
- 18. Analyze your data.
- 19. Interpret your data. What does it mean?
- 20. Formulate your conclusion by reviewing your results.
- 21. Summarize your work.
- 22. Send in your Science Fair application.
- 23. Refine or redesign your investigation.
- 24. Design and build your Science Fair display.

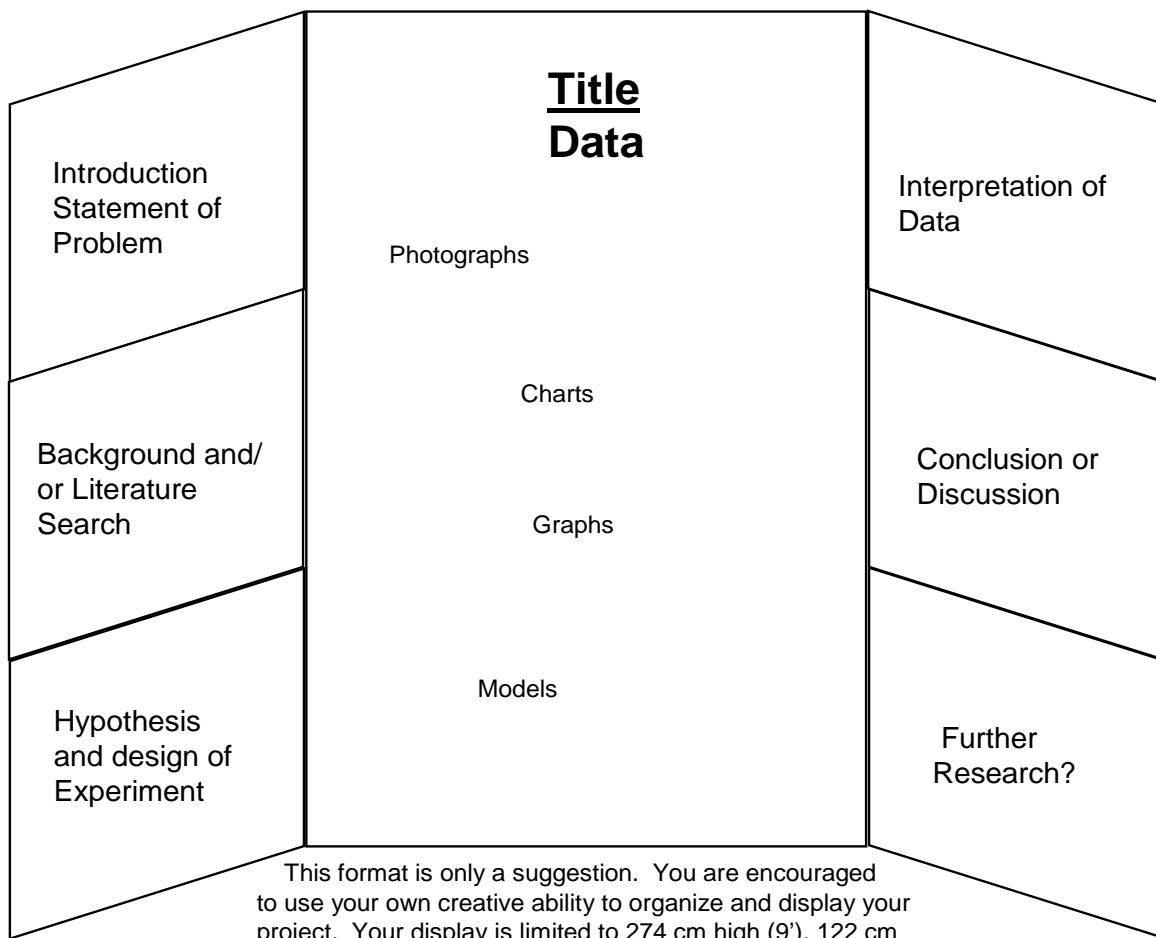
Overview of Science Fair Research Project



SCIENCE FAIR

SUGGESTED BACKBOARD FORMAT FOR PROJECTS

exhibits should be durable and built to stand up without a wall for support

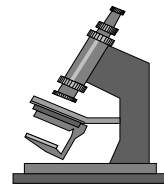
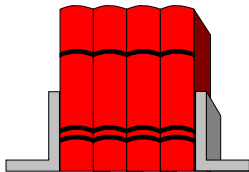


This format is only a suggestion. You are encouraged to use your own creative ability to organize and display your project. Your display is limited to 274 cm high (9'), 122 cm wide (48"), and 76 cm deep (30").

Who can help? (“Help” doesn’t mean “do it”)

With ideas and Information: Cal Poly, AHC and UCSB Libraries and professors, Lompoc and Santa Maria Libraries, Internet, science books, parents, pet shops, pharmacist, camera shop, teachers, Radio Shack, Seed Co., flower shops, pet store, etc.

With Project Display: Parents, older sibling, uncle, neighbors, teachers, etc.



BKBOARD.PPT



ENDEAVOUR CENTER MAP
www.endeavours.org

