2027 Central Coast STEM Expo
General Entry Rules and Requirements

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Central Coast STEM Expo is sponsored by

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AIR FORCE STEM

Revisions
March, 2015; November, 2015; October 2016

General Requirements

——Entries in **ALL** categories must meet these requirements to be considered for judging ——

1. Registration Directions

STEP 1: Review the General Rules & Requirements for entering a project contained herein. They can also be found online at: www.CCSTEMExpo.org. Read and discuss with your teacher and/or parent.

STEP 2: Choose a project. Go to website for ideas at: www.CCSTEMExpo.org, click STEM Expo link then **"Some Project Ideas"** link. Ask your teacher if the project you are considering is suitable.

STEP 3: Obtain from your teacher the **Introduction and Pre-Registration & Pledge forms** packet, or go to website at: www.CCSTEMExpo.org and print

- Read and complete the entire packet. Select a judging time, indicate on the entry form if you are working with a partner(s). Students and Parents sign and date
- Sign the **Humane Treatment of Vertebrate Animals** (if Vertebrate Animals will be part of your project).
- Return completed packet forms to your teacher before March 26, 2027.

STEP 4: Register online at www.CCSTEMExpo.org. using the information from the completed **Pre-Registration & Pledge form**

- Students fill out STEM Expo Google Entry Form at school with teacher's assistance or at home once registration is open on or about 09 November, 2026, but before April 16, 2027 deadline. Insure your selected judging time is coordinated with all team members
- Fill in all required/applicable fields (boxes)
- Be sure to click the "Submit" button at the bottom once all information is finalized
- Once you click "Submit", the form cannot be changed, so if you need to make changes, please contact your teacher.

2. Presentation Display

- Each entry must have a descriptive display to be placed on top of a table for the day of the Science, Technology Engineering and Mathematics (STEM) Expo event
- The Form of the required display is up to the entrant; it can be the common "tri-fold" type presentation board, PowerPoint (PPT) or Prezi electronic presentation or it can be something else that provides the same functionality
- The purpose of this display is to show the judge or reviewer the goal of the project entry and the various steps or conclusions that were involved
- See Attachments B and C for two examples of STEM Expo project display options.

2.1 Space limitations

- The space for the presentation display is limited to a maximum of 48" wide by 30" deep by 9' high (there is no minimum size specified)
- Exhibits should be durable and built to stand up without a wall for support
- The display will be placed on a table with other entries, and may hang off of the edge of the

table towards the floor; however, it cannot extend more than 1" in front of the table.

2.2 Additional space

- If additional space is needed, it can be provided as another 48" X 30" space next to the assigned spot
- If a floor space is used the student is responsible for providing a "link" notification to guide the viewers to the correct location; this link should include the entrant's name, entry title, and directions to the exhibit (which will be added on-site at the event)
- Please indicate the need for additional space on your entry form.

2.3 Judging and review of display

The presentation display will be evaluated as one of the aspects of judging for the category; at a minimum the following will be reviewed:

- Display (tri-fold board, electronic presentation or other) is neat, easy to read, has an accurate/informative title and the layout is in appropriate logical order
- If illustrations, photos, charts or graphs are used, they are appropriate, add to the understanding of the entry and appropriate credit is given to the owner/originator
- See the STEM Expo Judging Sheet (Attachment A) item 5 for further information on Display judging criteria.

3. Descriptive Document (Optional)

- Each entry may have a descriptive document that is separate from, but shown as part of, the project
- For most categories, this is an optional item for an entry, but it does show as a positive factor for review
- This document's purpose is to provide the viewers with additional insight into the processes, conclusions, details, etc. of the entry
- Examples: a log book showing progress and occurrences over time; a report including problem statement, findings and conclusions.

3.1 Size and Features

- There is no limit to the length of the document, however providing extensive extraneous information is not recommended
- This document should be grammatically correct, organized and free from spelling errors
- If illustrations, photos, charts or graphs are used, they are appropriate and add to the understanding of the entry
- If any visual images are used, appropriate credit must be given and any required copyright clearances must be provided
- Any visual aids should promote the understanding of the entry.

4. Discussion/Interview with Judges

- The Entrant must sign up for an interview time with the judges
- This verbal interview is mandatory and required of all student participants
- The interview gives the judges the opportunity to consider the depth of understanding by the entrant(s) and technical clarity of information that is in question
- Please indicate the desired day/time on your entry form
- See the STEM Expo Judging Sheet (Attachment A) item 5 for further information on Presentation Judging Criteria.

5. Individual Entries and Team Entries

- STEM Expo allows entries by both individuals and by teams
- There is a limit of four on a team, however other events (e.g. the California State Science Fair) limit team size to three students so a maximum of three students on a team is recommended
- Team entries and Individual entries will be judged with the same Judging Sheet, and there will not be a different award given for a team vs. an individual; however, judges will be aware of multiple participants for a given team project and team participants must all be present and all interviewed at a single judging session, it is up to you to schedule around participant conflicts
- If applicable, please indicate you are a member of a team and who the other members are on your entry form.

6. Judging and Entry Levels

6.1 Judging Sheets – See Attachment A for specific Judge's scoring criteria

- Creativity (20 Points)
- Asking Questions or Defining Problems (15 Points)
- Design and Methodology (20 Points)
- Collecting, Analyzing and Interpreting Data (20 Points)
- Display and Presentation (25 Points).

6.2. Grade Levels and Age Appropriate Ranking

- Each Category is initially divided into three age/grade level groups: for example 3rd–6th (elementary), 7th–8th (middle), 9th–12th (high), but varies depending upon ages registered.
- The judges are tasked to score student participants as appropriate for each grade level
- Within the grade level groups, entries are ranked the same. In other words, although a 3rd grade entry (elementary) is not expected to be at the same level as a 6th grade entry (elementary), 3rd and 6th grade entries might both be judged at the same level depending upon number of entries
- If there are not enough entries in a category to justify having three separate age groups, the Judging Director can combine ages as needed; however, the entries will still be judged based on age appropriate standards.

6.3. Judging and Category Evaluation Tasks

- The Judging Director will attempt to the best of his/her ability to ensure each project gets judged at least 3 times by separate judging teams (consisting of two judges), however the Judging Director may make a real-time decision to modify this plan depending upon the number of volunteer judges being available during a specific student participant judging timeframe
- Once Judging Sheets have been scored they are kept confidential and remain in the ownership of the Judging Director.

7. Creativity

- Although it is a subjective item, creativity is appreciated by the reviewer and is included into the overall judging score
- Creativity includes uniqueness or application to an old subject in a new or unique way, turn new and imaginative ideas into reality, showing extreme interest in subject, and/or has intriguing application for further investigation
- See the STEM Expo Judging Sheet (Attachment A) item 1 for further information on Creativity judging criteria.

8. Parental Involvement

- STEM Expo encourages students to work with their parents; however, the work done on any entry that is to be judged and evaluated for an award MUST be done only by the student(s)
- If a Student/Parent team wishes to enter into STEM Expo, they are welcome to do so in a "Presentation Only" state and will not be considered for the competitive awards
- In the case of a project which has been entered for competition where there is obvious parental involvement, the Judging Director will disqualify that entry for an award.

9. Safety Requirements

9.1 Limitations

- No hazardous substances or devices (e.g. poisons, drugs, firearms, weapons, ammunition, and reloading devices) are allowed
- No flames, explosives, highly flammable materials, or dangerous chemicals are allowed
- No human/animal parts or body fluids (for example blood, urine, etc.) are allowed
- Any inadequately insulated apparatus producing extreme temperatures that may cause physical burns is not allowed
- Any apparatus with unshielded belts, pulleys, chains, or moving parts with tension or pinch points must be inactive and for display only
- Project sounds, lights, odors, or any other display items must not be distracting. (Exceptions to this rule may be permitted for judging demonstrations. Approval must be given prior to judging)
- No live insects or live disease-causing organisms which are pathogenic to invertebrates
- No microbial cultures or fungi, live or dead, including unknown specimens
- No caustics, acids or dangerous chemicals
- No Combustible solids, fluids or gases (inert substitutes may be used for display)
- No tanks which have contained combustible gases, including butane and propane
- No operation of a class III or IV laser while at the fair.

9.2 Electrical Power

- If electrical power for the exhibit is required, it can be provided if requested in advance; however, it must be used as part of the entry (power will not be provided just for lighting). The amperage available for each entry is very limited.
- If electrical power is needed, the entrant must provide a suitable extension cord that meets local code requirements. 120 VAC electric power will be provided upon request. Batteries may be used but must not contain open cells

- Please indicate the need for electrical power on your entry form
- High voltage (> 12V) equipment, large vacuum tubes or dangerous x-ray generating devices must be properly shielded
- High voltage (> 12V) wiring, switches and metal parts must be located out of reach of observers and designed with an adequate overload safety factor
- All wiring must be properly insulated; nails, tacks or non-insulated staples must not be used to fasten wiring
- Bare wiring and exposed knife switches may be used only on low voltage circuits (< 12V), otherwise standard enclosed switches are required
- Electrical connection in 120 VAC circuits must be soldered or fixed under approved connectors and connecting wires properly insulated
- Please refer to safety precautions for substances in the booklet, "Safety in Academic Chemistry Laboratories" published by the American Chemical Society (1155 16th Street, NW Washington D.C. 20036)

9.3 Live Animals

- Experiments with vertebrates are regulated by the International Science Fair Regulations
- Student must have clearly defined objectives requiring the use of animals to investigate a scientific problem
- Student must be under the supervision of a teacher, doctor, or other qualified adult
- Student must have the adult supervisor's signature on the Certificate of Humane Treatment of Live Vertebrate Animals along with the entry form verifying humane treatment and proper care of animals (see the Certificate of Humane Treatment of Live Vertebrate form to sign and submit on the Entry Website)
- Animals must be taken home immediately after judging unless a participant wants to stay with the animal to continue demonstration and remain for the duration of time the animal is there.

10. Authority

- The Science Fair and STEM Expo Chairman, and/or the Director of Judging reserve the right to remove any project for safety or objectionable material reasons or to protect the integrity of the Central Coast Science Fair and STEM Expo and its rules and regulations. The above listing is a guide which may or may not be all inclusive.

ATTACHMENT A

Entry # _____ Judge No: _____ Grade Level _____

Project Title _____

Street Address: _____

Student Name(s) _____

_____

_____

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 in a new or imaginative way. 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. ASKING QUESTIONS or DEFINING PROBLEMS (15 points)

a. **Goal/purpose** or practical need/problem clearly stated. 1 2 3 4
b. Appropriate depth of research or definition of proposed solution. 1 2 3 4 5
c. Testable using scientific methods or explanation of problem constraints. 1 2 3 4 5 6

Total: _____

3. DESIGN AND METHODOLOGY (20 points)

a. Data collection methods precise, repeated and appropriate to problem or exploration of alternatives to answer need and/or problem. 1 2 3 4 5 6 7 8 9 10
b. Variables /controls defined, appropriate and complete or investigating Identification of a solution and development of a prototype/model. 1 2 3 4 5 6 7 8 9 10

Total: _____

4. COLLECTING, ANALYZING AND INTERPRETING DATA (20 points)

a. Systematic data collection/analysis or prototype demonstrates intended design. 1 2 3 4
b. Demonstrates reproducibility of results or prototype has been tested in multiple conditions/trials. 1 2 3 4
c. Used appropriate application of mathematical and statistical methods. 1 2 3 4
d. Sufficient data collected to support interpretations and conclusions or prototype demonstrates engineering skills and completeness. 1 2 3 4
e. Conclusions are logical, supported by data, and relevant to scope of project. 1 2 3 4

Total: _____

5. DISPLAY AND PRESENTATION (25 points)

a. Accurate and informative title and illustrations give credit to originator. 1 2 3
b. Display clearly explains project and results. 1 2 3
c. Graphic appeal and pride of workmanship evident in display or electronic pres. 1 2 3 4
d. Technical clarity and thoroughness of oral presentation and discussion. 1 2 3 4 5 6
e. All team members demonstrated confidence and poise in speaking. 1 2 3
f. Demonstrates appreciation of relevant applications and further study. 1 2 3
g. General evidence of personally performing all project tasks. 1 2 3

Total: _____

Judge's Name: _____ **Grand Total:** _____

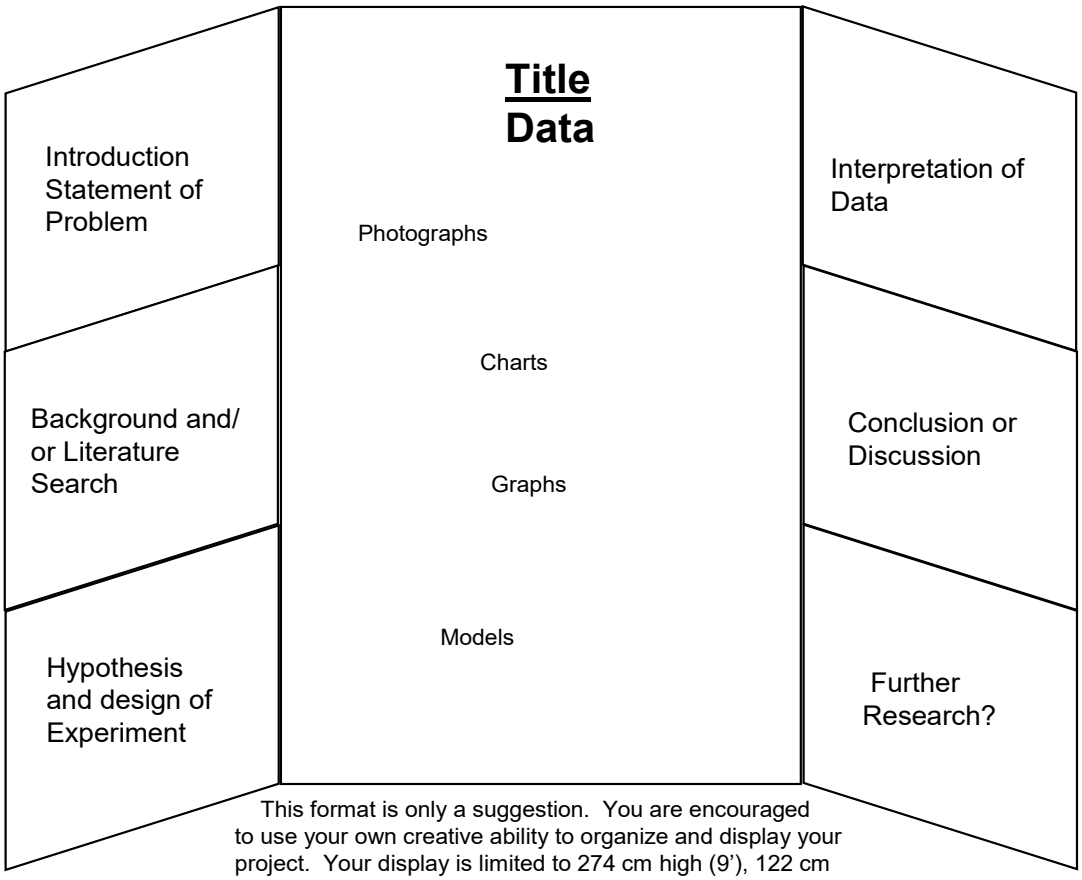
Please include constructive comments on back.

ATTACHMENT B

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").

ATTACHMENT C

Any Engineering Demonstration Project

Suggested presentation guideline for Engineering Demonstration Project to be judged:

1). Notebook and/or Microsoft Power Point (PPT) presentation (or equivalent), or display board for an Engineering Demonstration project should include the following information:

a). Engineering Project introduction (1 slide)
b). List Engineering project design requirements (1 slide)
b). Engineering project photos during the manufacturing and construction process (1-2 slides)
c). Design Drawing and/or Sketches (1-2 slides)
d). Test Data (voltages, current, temperature, force, etc.) if required for the Engineering project (1-3 slides)
e). Lessons learned during manufacturing and testing of your Engineering project (1 slide)
f). Conclusion (1 slide)