



STEM Expo 9 (2019)

Entry Rules and General Requirements

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Revisions

December 1, 2018 – Initial release

Note: Revisions for this year affecting understanding and/or entry qualification/judging are indicated with a Δ in the margin

Entry Rules and General Requirements

—An entry in **ANY** category must meet these requirements to be considered for judging. —

1. Registration, Event Entry, and Communications

1.1. Event registration

- All entries must be pre-registered using the online form at <http://www.stemexpo.org/IntentToParticipate>
- Registration is open from mid December until 11:59PM on the Monday five (5) days before the event. This Monday night is when registration is officially closed.
- Due to the expanded number of entries, no late or onsite registration will be allowed.
- Anyone entering more than 10 projects from the same organization should contact the judging and registration staff for entry assistance and confirmation of eligibility.

1.2. Pre-event communications

- All registrations must contain a valid email address that will be used to confirm registration and to disseminate information for entrants.
- A few days prior to the close of registration all entrants will receive an email reminding them of the event. At this time (or before) if the entrant has decided not to participate, we ask that they respond and inform us.
- Shortly after close of registration an email will be sent to all participants with their scheduled Entry Review/Interview time for the morning of the event. Note that even entries that are for evaluation only will have a review time assigned.

1.3. Check-In, Setup, and Tear-down

- Title/Space locators are ¼ page tent-cards that are provided to each competitor during check-in and setup. If an entry is in more than one category, there will be a locator for each category, even though only one space is assigned. All locators must be displayed at each entry.
- All entries must be checked in and receive their title/space locator indicator. Space numbers are assigned at close of registration and are set on a random basis.
- Check-in occurs on the Friday evening prior to the event and early on the Saturday morning of the event. Specific hours are posted on the website.
- Space numbers are locators for the public and for the judges. In general, the expectation is that the entries will be located within the categories, sequential by number. The exception is for entries in multiple categories, where the spaces will be assigned to only one of the categories, and the locators for the other categories will reflect that singular location. Note that there is no separation of grade levels within categories.
- All entries and displays must be picked up at the end of the event on the day of the event. There is no on-site storage to hold your display after the event. Any display items larger than a notebook (size based on event clean-up team discretion) will be discarded after the scheduled clean-up period in the hours after the event.
- Any small or personal items that are located after the event has closed will be collected and provided to the facility's "lost-and-found" collection. Return and dissemination of those items will be through the location's security office.

1.4. Post-event communications

- Certificates of participation and completed rubric forms will be available for pick-up at the end of the event.
- If there are any items (prizes, rubrics, documents) that need to be sent to the entrant after the event is over, it will be sent to the address supplied at the time of registration or check-in.

- A list of the prize winners and their associations will be posted on the STEM Expo website within a week of the event.
- Photos of each project entry will be taken and photos of the winning projects may be displayed on the STEM Expo website after the event.

2. Presentation Display

- Each entry must have a descriptive display for the day of the STEM Expo event.
- The form of the required display is up to the entrant. It can be the traditional “tri-fold” type presentation board or it can be something else that provides the functionality needed.
- Non-traditional displays will almost certainly gain a bonus in ranking during the judging for that category
- The purpose of this display is to show a visitor the goal of the entry and the various steps or conclusions that were involved.

2.1. Judging and review of display

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

- Display is attractive, easy to read, and the layout is in appropriate logical order.
- If illustrations, photos, charts or graphs are used, they are appropriate and add to the understanding of the entry.
- Any visual aids promote the understanding of the entry.
- Note that any entry exceeding space limitations (see next section) will be disqualified from receiving any judged award.
- See section 9 for further information on Judging

2.2. Visual Images (Photographs, Charts, Illustrations, Tables, etc.)

Visual images have the following limitations

- Images must not be offensive or inappropriate (which includes images showing animals of any kind in surgical, necrotizing or dissection situations) as determined by the Judging Team and/or the Executive/Local Organizing Committee.
- Images must have a credit line of origin (“Photograph taken by...” or “Image take from...” or “Graph/Chart/Table taken from...”). If all images were taken or created by the student or are from the same source, one credit line prominently displayed on the presentation is sufficient.
- Images must not provide any public disclosure or identifying information of human subjects, regardless of the method or modality of that public disclosure (i.e., pictures, videos, facial recognition, etc.).
- Any image requiring copyright approval must have an indicating line that such approval has been granted, and the approval letter, or methodology must be available for view by the judging team.

3. Space Limitations

- The space for the presentation display is limited to a maximum of 46” wide and 15” deep (there is no minimum size specified). Larger spaces are available on request (see section 3.1)
- There is no height limit, however the display must be safely self-supporting.
- 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 should not extend more than 1” in front of the table, and it should not touch the floor or provide a tripping hazard.
- If needed, the space underneath the table may be utilized to temporarily store additional supplies, replacement items, etc. However, this must be stored neatly and excessive clutter will not be allowed.

- Entries must fit within the spaces allowed. Non-compliance will mean disqualification from a judged award.

3.1. Larger or Additional space

- A limited number of larger floor spaces will be available. These spaces will be approximately 4' deep by 6' wide in size. The spaces will be against a wall with the other spaces beside them (allowing access on one 6' side).
- The participant is responsible for providing any desired table or structure within that space.
- Any entry in any category may request one of the larger spaces, however, they are limited in number and are available on a first-come, first-serve basis.
- If the number of requests exceed the number of available spaces, a waiting list will be available in case of cancellations.
- A request for a larger space should be made via an email to registration@stemexpo.org, no assumption of approval of the larger space request should be made until a response from the registration team is received when you will be notified that your request is accepted or that you have been added to the waiting list.

4. Descriptive Document

- Each entry may have a descriptive document that is separate from, but shown as part of, the display (See Item 2).
- For some 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.

4.1. 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 should be 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.

5. Evaluation Only

- At the entrant's request, a project may be entered at STEM Expo for evaluation only. It will not be possible for an entry of this type to win an award.
- Entries from out-of-area (see item 8) are automatically assumed to be Evaluation Only unless prior arrangements are made with the executive committee.
- Entries by teams that include parents or other individuals of post-High School ages will be Evaluation Only.
- Although an entry is for evaluation only, the review time (when an interview can occur) will still be assigned, and the entry will be reviewed in the same manner as any other entry.

6. Multiple Category Entry

- A project can (and should) be entered in more than one category, if appropriate for the entry.
- Projects that are entered in multiple categories will have multiple locators at the event, and all must be displayed at the entry location.

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7. Individual Entries and Team Entries

- STEM Expo allows entries by both individuals and by teams.
- There is no limit on size for a team, however other events (e.g. the California Science and Engineering Fair) limit team size to three students.
- Team entries and Individual entries will be judged with the same rubrics, and there will not be a different award given for a team vs. an individual. However, judges will be aware that teams are involved, and that item will be given consideration.

8. Out-of-area Entries

- An entry is out-of-area if the entrant (the individual or at least one team member) does not live, or go to school, in the county where the event takes place.
- STEM Expo does allow out-of-area entries by individuals or teams.
- Unless arrangements have been made with the STEM Expo executive board, entries from outside the area will be evaluated as "Evaluation Only" (see item 5).
- Per arrangement with the California Science and Engineering Fair, any entries advanced to that event will only be from the local county.

9. Judging

9.1. **Age Appropriate Ranking**

The judges are guided to rank the area on each rubric as appropriate for each grade level within the grouping they are assigned. If a judge group includes entries of all levels from 3rd to 12th the following would apply.

- Ranking levels are initially grouped into three age/grade level groups: elementary (typically 3rd–5th), Middle school (typically 6th–8th), and High School (typically 9th–12th).
- 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 (middle), 6th and 8th grade entries are both judged at the same level.
- If a team consists of students in different grade levels, the higher grade is used for evaluation.

9.2. **Rubrics (Evaluation Forms)**

- The judging rubric scale allows for a range of 1 to 5 for evaluation in each of the areas - and judges can mark on or between the following general values:
 1. Beginning
 2. Developing
 3. Acceptable
 4. Accomplished
 5. Advanced
- There are two additional indicators in the rubric:
 - NA Not Applicable - used to indicate that the ranking item does not apply to this entry
 - ND Not Demonstrated - Used to indicate that although the judge believes that this item applies to the entry, the information was not presented in the display or documentation.
- The rubrics and certificates of participation will be available for pick-up at the end of the event (after the awards ceremony). Any rubrics not picked up will be scanned and sent to the entrant by email (to the address provided at registration time or at check-in).
- Comments are intended to assist the entrant by pointing out both successes and possible areas of improvement.

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- Although there is space on the rubric for judges to enter comments, these are not required. Additionally, the entrant should realize that any comments on these forms are not related to rankings.

9.3. Judge Entry Review and Discussion/Interview

- All entries will be assigned a specific time for review by judges. The student(s) involved in the entry are invited to be there for a discussion and interview at that time.
- Parents and associated individuals are welcome to be present at or near the entry location during the interview time and photographs and/or videotaping are allowed. However, they are reminded that the interview is with the student(s), and the judges will take note of any interference or direction/assistance provided from external sources.
- The judging review/interview time is scheduled for a minimum of 5 minutes and is typically about 10 minutes in duration. The student should arrive at their entry 5 to 10 minutes before the appointed time. If the student arrives at their display more than 5 minutes past the scheduled start time, the interview may be considered cancelled, or may be re-scheduled with the judges or the judging director at a later point, at the judging team's discretion.
- The interview is voluntary for the student(s); however, it is also recommended. The interview gives the judges the opportunity to consider the depth of understanding by the entrant and clarify any information that is in question.
- Review times will be assigned after registration closes and the times will be sent to the participant when that occurs. All review times will be scheduled between 8:30AM and 11:30AM on the day of the event.
- Note that if there are specific time periods that are needed due to conflicting schedules with other events, please contact the judging director at least a week before the schedules are released and every attempt will be made to accommodate such a request – however this cannot be guaranteed.
- After the interview period is complete, at any time prior to the awards ceremony, judges may re-visit entries. If the student(s) are present they are welcome to discuss the project further with the judges. Numerous panels of judges for several different types of awards will be evaluating many factors throughout the day. However, if judges are viewing specific projects after the interview period, no assumptions should be made about any possible awards.

9.4. Judging and Category Evaluation

- The rubric's scale values do not, by themselves, provide a relative ranking between entries, nor is it a cumulative "score" that determines the winners.
- There is no actual point value assigned to any specific portion of the rubric. While the various sections are not necessarily weighted the same, an outstanding entry will do well in all of them.
- The judges will use all three core documents (Category Description, Rubric, and this document) when evaluating the entries.
- Each project will have areas of greater strength – Judges do not expect those areas to be the same. The intent is to recognize the successes in each project.
- Note that projects can be disqualified from receiving an award by non-compliance of these rules (including size limitations).

9.5. General Judging Criteria

In addition to the rubrics details and category descriptions, the judges will use general criteria to help evaluate entries. These are similar to criteria that are in use at other competitions. The following six general criteria points are adapted from the California Science and Engineering Fair's judging handbook.

- **Organization and Completeness** – The project should have a well-defined goal or objective. The materials, methods, and design should be sufficient to answer all the appropriate questions.

A second component of organization is thoroughness, which includes not only the issue of how well the original questions have been addressed, but also the issue of how fully questions arising during the project have been addressed.

- **Clarity** – Written and oral communication skills are very important in all STEM fields. Ideas should be clearly presented and easy to understand. Projects should have well-defined goals or purposes which indicate clear understanding. A well-written presentation, easy to follow visual aids, and clear and concise answers all add to the quality of a project.
- **Comprehension** – Comprehension is the understanding and appropriate use of concepts, terms, techniques, and methodologies. Students should have a depth of knowledge about the principles and practices involved, which can be shown by the ability to extrapolate what was learned from the project to the subject in general. Depth includes understanding basic STEM concepts behind the project topic, comprehension at a finer level of detail, and awareness of the influence that the project has on related material in the subject topic.
- **Originality / Innovation** – Original ideas and the creative use of resources are usually impressive. This originality may be in the general concept, a new approach to solve an old problem, or a new interpretation of data. However, an original project must be well executed. Original projects are those that go beyond the books and explore new ground and innovative techniques.
- **Effort and Motivation** – The amount of time a student has spent doing the actual project and the amount of time the student has spent reading and learning the subject should both be considered. While motivation and effort are not the same, the amount of effort that goes into a project is usually an indication of a student's motivation. It is important to know if a student enjoyed the experience and is interested in learning more.
- **Elegance and Artistry** – Elegant and artistic project displays provide the same information as those without these aspects, but do so with a certain stylistic element that sets the work apart from others. An elegant project presents the data with an aesthetic that is pleasing to the viewer. Artistry draws the viewers in and keeps them interested in the display.

10. Award Quantity and Grade Level Groups

Evaluation and Award groupings are arranged as per the number of entries (as counted when registration closes), to provide an appropriate base of entries for the awards.

- There will be at least one first place award presented in each category.
- Assuming there are at least 6 entries in a category, there will be at least one second place award.
- Assuming there are at least 8 entries in a category, there will be at least one third place award.
- If there are at least 16 entries in a category, that category may be split into grade level groupings as follows:
 - There will be no more than 3 grade groups per category.
 - Groupings by grade level will be based on the ability to assign so that there are at least 6 entries per grade group.
 - Groups will be leveled so that each group will be as large as possible.
 - Examples:

<ul style="list-style-type: none"> • 36 Entries - by grade: <table border="0" style="display: inline-table; vertical-align: top;"> <tr> <td style="padding-right: 20px;">3rd:3 entries,</td> <td style="padding-right: 20px;">4th: 18 entries,</td> <td>5th: 2 entries,</td> </tr> <tr> <td>6th: 12 entries,</td> <td>7th: 1 entry</td> <td></td> </tr> </table> 	3rd:3 entries,	4th: 18 entries,	5th: 2 entries,	6th: 12 entries,	7th: 1 entry		<ul style="list-style-type: none"> • 58 Entries - by grade: <table border="0" style="display: inline-table; vertical-align: top;"> <tr> <td style="padding-right: 20px;">3rd:2 entries,</td> <td style="padding-right: 20px;">4th: 3 entries,</td> <td>5th: 8 entries,</td> </tr> <tr> <td>6th: 25 entries,</td> <td>7th: 4 entries,</td> <td>8th: 11 entries,</td> </tr> <tr> <td>9th: 2 entries,</td> <td>11th: 3 entries</td> <td></td> </tr> </table> 	3rd:2 entries,	4th: 3 entries,	5th: 8 entries,	6th: 25 entries,	7th: 4 entries,	8th: 11 entries,	9th: 2 entries,	11th: 3 entries		<ul style="list-style-type: none"> • 92 Entries - by grade: <table border="0" style="display: inline-table; vertical-align: top;"> <tr> <td style="padding-right: 20px;">5th: 7 entries,</td> <td style="padding-right: 20px;">6th: 65 entries,</td> <td>7th: 4 entries,</td> </tr> <tr> <td>8th: 11 entries,</td> <td>9th: 2 entries,</td> <td>11th: 3 entries</td> </tr> </table> 	5th: 7 entries,	6th: 65 entries,	7th: 4 entries,	8th: 11 entries,	9th: 2 entries,	11th: 3 entries
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<p>Result: 2 groups - 3rd-4th (21 entries), 5th-7th (15 entries)</p> <p>Result: 3 groups – 3rd-5th (13 entries), and 6th (25 entries) and 7th-11th (20 entries)</p> <p>Result: 2 groups – 5th-6th (72 entries) and 7th-11th (20 entries)</p>																							
- Regardless of the number or arrangement of Grade Level Groupings entries will still be judged based on age appropriate standards (see section 9.1).

- In the case where the judges are unable to determine a clear ranking between two entries, ties are allowed.

11. Additional Category Awards

- STEM Expo may present awards in additional/special categories beyond the eight standard ones.
- STEM Expo may elect to include or exclude any or all of these award categories on the day of the event.
- Entrants are automatically entered into these additional categories when they enter the primary category: no separate entry for the special category is required.
- There are no rubrics specific to these categories.
- During the course of judging, the judges may elect to nominate entries into these areas, then a special individual judge or panel of judges will determine the category award after reviewing all the entries.
- Additional categories are listed in the Category Descriptions and Recommendations document.

12. Artistry

- Although it is a subjective item, artistry is appreciated by the reviewers and is included into the overall rankings.
- Artistry may include “Art” but it may also be an entry (or a portion of an entry) that reaches beyond an “advanced” level.
- The Creative Arts Special Award category is used to recognize an entry that has distinguished itself in that field.

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13. Ethics and Original Work

- Ethics Statement
Scientific fraud and misconduct are not condoned at any level of research or competition. This includes plagiarism, forgery, use or presentation of another researcher’s work as one’s own and fabrication of data. Fraudulent projects will fail to qualify for competition in any STEM Expo and/or any subsequent follow-up event. STEM Expo, Inc. reserves the right to revoke recognition of a project subsequently found to have been fraudulent.
- All projects should have an original or innovative aspect to the work at least in either concept or approach. If a pre-existing project is modified or continued from a previous year, the initial work should be credited and the expanded or innovative portions clarified or explained and documented.

14. 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 a project in STEM Expo, they are welcome to do so in an “Evaluation Only” state.
- In the case where a project which has been entered for competition where there is obvious parental involvement, the Judging Director will disqualify that entry for an award.

15. Electrical Power

- The majority of entry spaces for the student projects do NOT have power available. The exception is the Robotics and Computation category where 120VAC power is provided underneath the display tables automatically.
- If electrical power is needed for the exhibit, it must be requested in advance by a comment in the entry form or via an email to registration@stemexpo.org.
- Any power that is provided by STEM Expo must be used as part of the entry (power will not be provided for lighting or decorative purposes).
- The amperage available for each entry is very limited. One single 20 Amp service will be used for up to 12 entries.

- If electrical power is needed, the entrant must provide a suitable extension cord that meets local code requirements – Power will be provided via a ‘power strip’ under one end of the display table, which could be up to 12’ from the entry space.

16. Safety Limitations and Rules

These safety limitations are intended to provide a positive environment for all attendees, and are minimum requirements. If there are any questions about what is acceptable, or if special considerations are required for a project, please contact the judge coordinator prior to the event to work out a solution.

- 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 live animals (of any kind), insects, 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.)

17. Authority

- All participants (students or adults) must have a signed Consent and Release form to be at the event as a participant. This form is available on the website at http://www.stemexpo.org/participant_info
- The STEM Expo Executive Board, and/or the Director of Judging reserve the right to remove any project for safety reasons or to protect the integrity of STEM Expo and its rules and regulations.



18. Major changes since last year

- Addition of the ‘Things’ category (not part of this document)
- Defined title/space locators and their use at the event, especially for multi-category entries (Section 1.3, Section 6)
- Added emphasis on non-traditional displays (Section 2)
- Revised delivery of rubrics to via scanning and email (Section 9.2)
- Adjustment Grade Level group sizes modified to six from eight (Section 10)
- Added Ethics and Original Work section (Section 13)
- Revised name of California Science and Engineering Fair (several places in document)