SENIOR DIVISION

Science Fair Rules

Entry Form

Judging Criteria
SENIOR DIVISION SCIENCE FAIR RULES

1. One copy of the entry form, ISEF abstract form, and all required forms MUST BE RECEIVED on or before February 7th, 2017. Students must prepare a RESEARCH PLAN after adequate library research, before the experimentation is started. The research plan should clearly define the objective and demonstrate scientific principles.

2. Exhibits will be received Tuesday, March 7th, 2017, at 9:30 a.m. and must be in place by 11:00 a.m.

3. Senior Division 9-12 grade.

4. Entries must be declared in one of the following categories:

   - Behavioral and Social Sciences
   - Botany
   - Earth and Space Sciences
   - Environmental Science
   - Medicine and Health
   - Physics
   - Biochemistry
   - Chemistry
   - Engineering
   - Mathematics and Computer Sciences
   - Microbiology
   - Zoology

5. Please use great care in selecting the proper category for your research entry. It will be judged in that category with the following exceptions:

   a. If there are fewer than 3 entries in any category, this will be considered an insufficient number, and the entries will each be distributed into the most appropriate category based upon the title and the abstract, in the opinions of the Chief of Judges and the Director.

   b. If a judging team feels that a particular project is misclassified, it may be transferred to a more appropriate category with the approval of both judging teams concerned, the Chief of Judges and the Director.

6. All exhibits must be "Certified Approved" by the Inspection Committee and a signed certificate must be displayed prior and during judging. The Inspection Committee will ascertain that the exhibit conforms to all regulations (size, safety, etc.). All exhibits must be approved by the Regional Science Fair Scientific Review Committee.

7. Exhibits MUST NOT exceed 30 inches in depth (front to rear), 48 inches in width (side to side) and 108 inches in height (includes table). All switches and cords for 110 volts must be approved; if high voltage, it must have its own fuse.

8. A student may work on only one exhibit, individually or as a group member. All work must be done by the student. Teachers or parents may only advise.
9. No plants, animals, soils, chemicals, class 3 or 4 lasers, or explosives may be exhibited. Research involving the use of animals may display drawings, charts or graphs to illustrate the conditions, developments, and results of the investigations. Sealed insect collections will be permitted on display. Photographs and other presentations of surgical techniques, dissections, autopsies and/or other laboratory techniques depicting vertebrate animals in other than normal conditions, may not be displayed on the student’s exhibit, but may be contained in an accompanying notebook to be shown only during judging. Photographs of human subjects require signed consent before display. All display material on the display boards must be from the current year.

10. Every effort will be made to prevent damage or loss to exhibits. Security will be present during public viewing. However, Southeast Missouri State University, Drury Southwest, nor the Show Me Center will be responsible for loss or damage to any exhibit or part thereof.

11. All exhibits must remain until after the awards presentation at the close of the fair and all must be removed before 9:30 p.m. Any projects removed before the awards presentations are automatically disqualified for any award.

12. These rules conform to those of the International Science and Engineering Fair and must be followed.
Entry form is available at

http://www.semo.edu/sciencefair/senior-application.htm
**JUDGING CRITERIA**

**POTENTIAL MAXIMUM SCORE CHART**

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>INDIVIDUAL PROJECTS</th>
<th>TEAM PROJECTS</th>
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</thead>
<tbody>
<tr>
<td>Creative Ability</td>
<td>30 points</td>
<td>25 points</td>
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<tr>
<td>Scientific Thought/ Engineering Goals</td>
<td>30 points</td>
<td>25 points</td>
</tr>
<tr>
<td>Thoroughness</td>
<td>15 points</td>
<td>12 points</td>
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<tr>
<td>Skill</td>
<td>15 points</td>
<td>12 points</td>
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<tr>
<td>Clarity</td>
<td>10 points</td>
<td>10 points</td>
</tr>
<tr>
<td>Teamwork</td>
<td>--------</td>
<td>16 points</td>
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<td><strong>Total Possible Score</strong></td>
<td><strong>100 points</strong></td>
<td><strong>100 points</strong></td>
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I. **Creative Ability (Individual - 30, Team - 25)**

1. Does the project show creative ability and originality –
   a. in the question asked?
   b. the approach to solving the problem?
   c. the analysis of the data?
   d. the interpretation of the data?
   e. The use of equipment?
   f. The construction or design of new equipment?

2. Creative research should support an investigation and help answer a question in an original way.

3. A creative contribution promotes an efficient and reliable method for solving a problem. When evaluating projects, it is important to distinguish between gadgeteering and ingenuity.

IIa. **Scientific Thought (Individual - 30, Team - 25)**

1. Is the problem stated clearly and unambiguously?
2. Was the problem sufficiently limited to allow plausible approach? Good scientists can identify important problems capable of solutions.
3. Was there a procedural plan for obtaining a solution?
4. Are the variables clearly recognized and defined?
5. If controls were necessary, did the student recognize their need and were they correctly used?
6. Are there adequate data to support the conclusions?
7. Does the finalist or team recognize the data’s limitations?
8. Does the finalist/team understand the project’s ties to related research?
9. Does the finalist/team have an idea of what further research is warranted?
10. Did the finalist/team cite scientific literature, or only popular literature (i.e., local newspapers, Reader’s Digest).
IIb. Engineering Goals (Individual - 30, Team - 25)
1. Does the project have a clear objective?
2. Is the objective relevant to the potential user’s needs?
3. Is the solution workable? Acceptable to the potential user? Economically feasible?
4. Could the solution be utilized successfully in design or construction of an end product?
5. Is the solution a significant improvement over previous alternatives?
6. Has the solution been tested for performance under the conditions of use?

III. Thoroughness (Individual – 15, Team – 12)
1. Was the purpose carried out to completion within the scope of the original intent?
2. How completely was the problem covered?
3. Are the conclusions based on a single experiment or replication?
4. How complete are the project notes?
5. Is the finalist/team aware of other approaches or theories?
6. How much time did the finalist or team spend on the project?
7. Is the finalist/team familiar with scientific literature in the studied field?

IV. Skill (Individual - 15, Team - 12)
1. Does the finalist/team have the required laboratory, computation, observational and design skills to obtain supporting data?
2. Where was the project performed? (i.e., home, school laboratory, university laboratory) Did the student or team receive assistance from parents, teachers, scientists or engineers?
3. Was the project completed under adult supervision, or did the student/team work largely alone?
4. Where did the equipment come from? Was it built independently by the finalist or team? Was it obtained on loan? Was it part of a laboratory where the finalist or team worked?

V. Clarity (Individual - 10, Team - 10)
1. How clearly does the finalist discuss his/her project and explain the purpose, procedure, and conclusions? Watch out for memorized speeches that reflect little understanding of principles.
2. Does the written material reflect the finalist’s or team’s understanding of the research?
3. Are the important phases of the project presented in an orderly manner?
4. How clearly is the data presented?
5. How clearly are the results presented?
6. How well does the project display explain the project?
7. Was the presentation done in a forthright manner, without tricks or gadgets?
8. Did the finalist/team perform all the project work, or did someone help?

VI. Teamwork (Team Projects only- 16)
1. Are the tasks and contributions of each team member clearly outlined?
2. Was each team member fully involved with the project, and is each member familiar with all aspects?
3. Does the final work reflect the coordinated efforts of all team members?