MSEF Region II
Judging Guidelines, Rubric and Score Card

The Judging Process

Being a science fair judge is a challenging experience, but a rewarding one as well. Judges make a memorable impact on the lives of our future Science, Technology, Engineering and Mathematics professionals. Part of your job at the Science Fair is to be an ambassador for your profession.

As a judge, it is most important for you to show the students that you are both fair and knowledgeable. Your fairness is indicated by a few actions:

- Spend about the same amount of time (approximately 10 minutes) with each student.
- Listen to the student’s explanation of the project.
- Ask questions to find out more about the project and how it was done – not to embarrass or intimidate the student.
- Make eye contact with the student.
- Compliment the student whenever he or she presents a good idea or demonstrates anything you can compliment.
- Use a tone of voice that indicates interest or inquisitiveness, not skepticism or contempt.
- Examine the quality of the student’s work, and how well the student understands his or her project and area of study.
- Look for evidence of laboratory, field or theoretical work, not just library research or gadgeteering.
- Compare projects only with those competing at MSEF Region II and not with projects seen in other competitions or scholastic events.
- Keep in mind that Science Fair is not only a competition, but an educational and motivating experience for students.
- Do your best to make sure that all of the participants remember the Science Fair as a positive experience.
- Be discreet when discussing winners or making critical comments in elevators, restaurants, or elsewhere, as students or adult escorts might overhear. Results are confidential until announced at the awards ceremony.

Evaluation Criteria

Judging is conducted using a **100 point scale** with points assigned to creative ability, scientific thought or engineering goals, thoroughness, skill, and clarity. Students may have worked on a research project for more than one year. However, for the purpose of judging, ONLY research conducted since the last Science Fair is to be evaluated. Although the previous work is important, it is not to be considered as part of this year’s project.

The following list of questions for each criterion can assist you in interviewing the students and aid in your evaluation of the student projects.
Creative Ability (30)

1) Does the project show creative ability and originality in the questions asked?
   - the approach to solving the problem?, the analysis of the data?, the interpretation of the data?
   - the use of equipment?, 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.”

Scientific Thought (30)

(For engineering projects, the more appropriate questions are those found in the Engineering Goals.)

1) Is the problem stated clearly and unambiguously?
2) Was the problem sufficiently limited to allow plausible attack? 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 student or team recognize the data's limitations?
8) Does the student/team understand the project's ties to related research?
9) Does the student/team have an idea of what further research is warranted?
10) Did the student/team cite scientific literature, or any popular literature (i.e., local newspapers, Reader's Digest)?

Engineering Goals (30)

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?

Thoroughness (15)

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 student aware of other approaches or theories?
6) How much time did the student or team spend on the project?
7) Is the student familiar with scientific literature in the studied field?

**Skill (15)**

1) Does the student/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 student or team? Was it obtained on loan? Was it part of a laboratory where the student or team worked?

**Clarity (10)**

1) How clearly does the student 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 student understanding of the research?
3) Are the important phases of the project presented in an orderly manner?
4) How clearly are 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 student/team perform all the project work, or did someone help?

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<thead>
<tr>
<th>Criteria</th>
<th>Individual Projects</th>
<th>Team Projects</th>
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<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>
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<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>
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<td>10 points</td>
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<tr>
<td>Teamwork</td>
<td>16 points</td>
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<tr>
<td>TOTAL POSSIBLE SCORE</td>
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<td>100 Points</td>
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<tr>
<td>Class</td>
<td>Project #</td>
<td>Exhibitor/Project Title</td>
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