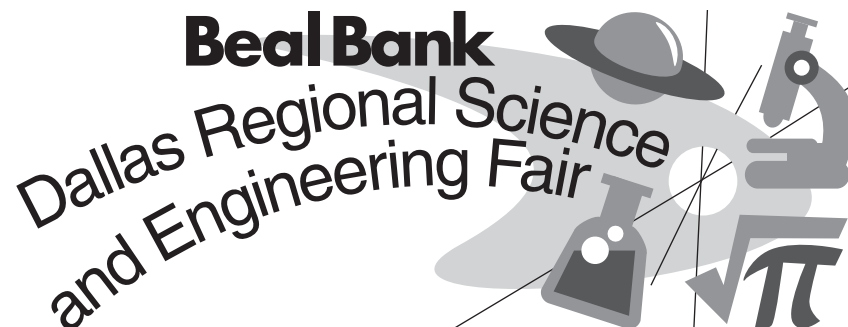


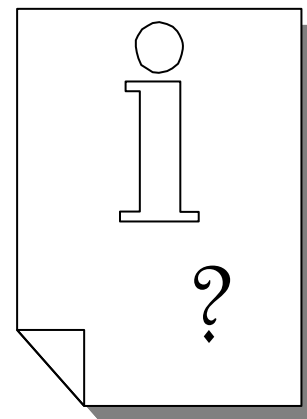
INTERVIEWS

- Examine the quality of the finalist's work, and how well the finalist understands his or her project and area of study. The physical display is secondary to the student's knowledge of the subject. Look for evidence of laboratory, field or theoretical work, not just library research or a facility with gadgets.
- Do not ask about the student's personal background – this should be irrelevant to the judging process.
- Students not present for interview can not win a 1st, 2nd, or 3rd place in Science Category; they can, however, receive Honorable Mentions.
- Judges should keep in mind that competing in a science fair is not only a competition, but an educational and motivating experience for the students. The high point of the fair experience for most of the students is their judging interviews.
- Judges represent professional authority to finalists. For this reason, judges should use an encouraging tone when asking questions, offering suggestions or giving constructive criticism. Judges should not criticize, treat lightly, or display boredom toward projects they personally consider unimportant or misleading.

And finally... please be discreet when discussing winners or making critical comments as students, relatives, or other judges might be offended. Results are confidential until officially announced and, as a general rule, the deliberations of your judge group should never be discussed with students or their relatives.



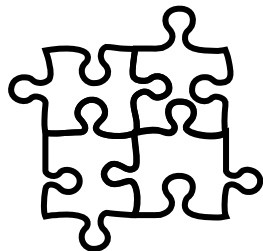
Judging Guidebook



CONTENTS

1. HOW IT FITS TOGETHER
2. SCORING CRITERIA
3. GUIDELINES FOR JUDGE CONDUCT

1. How It Fits Together



*You will be assigned to judge a specialized **Science Category** in either Junior or Senior division. We will try to match you with your preferences.*

Round 1 – As part of a Judge Group, by interviewing students one-on-one (or one-on-team) and then coming together as a group, you will decide the Top Three (TT) projects in your Judge Group. You can also recommend Projects for Honorable Mention (HM)

If there is only one Judge Group in your Science Category, you will rank the 1st-2nd-3rd winners and up to six Honorable Mentions.

Round 2 - If there is more than one Judge Group in your Science Category, the Captains from each group compare their respective Top Three projects in Rd 2 to decide on the 1st-2nd-3rd winners and HMs in the Science Category.

3. Guidelines for Judge Conduct

DISQUALIFICATION

- Projects with a green dot displayed are eligible for prizes, while those with a red dot have been disqualified by the Safety Committee due to a violation of the Rules and Guidelines. If you encounter any with red dots, please interview the student so that he/she can have a beneficial learning experience, but do not award the project.

EVALUATION

- Students may have worked on a research project for more than one year. However, for the purpose of judging, ONLY research conducted within the current year is to be evaluated.
- Compare projects only with those competing at this fair and not with projects seen in other competitions or scholastic events. Keep in mind that these are middle and high school students and not professionals.
- Avoid bias against projects that use sophisticated and expensive equipment, just because such resources are not available to all students – judge the student’s work, not their background.
- It is important in the evaluation of a project to determine how much guidance was provided to the student in the design and implementation of his or her research. When research is conducted in an industrial or institutional setting, the student should have documentation, most often the ISEF Form 1C, that provides a forum for the supervisor to discuss the project. Judges should review this information in detail.

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?

2. Scoring Criteria

The best projects you select will go on to compete at State and International Science & Engineering Fair (ISEF).

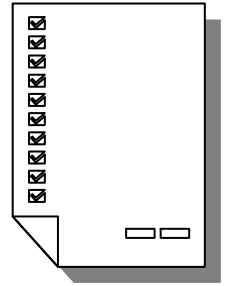
You are therefore encouraged to follow the ISEF scoring criteria and utilize the questions below. Scoring forms that follow these criteria are provided to help you select a '1-2-3' in your group.

Note: Scientific Thought and Engineering Goals are separated into IIa. and IIb. to be used appropriately by category.

There are also added questions for team projects.

I. Creative Ability (Individual = 30, Team = 25)

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.



II a. Scientific Thought
(Individual = 30, Team = 25)

If an engineering project, the more appropriate questions are those found in IIb. Engineering Goals.

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. Are the variables clearly recognized and defined?
4. If controls were necessary, did the student recognize their need and were they correctly used?
5. Are there adequate data to support the conclusions?
6. Does the finalist or team recognize the data's limitations?
7. Does the finalist/team understand the project's ties to related research?
8. Does the finalist/team have an idea of what further research is warranted?
9. Did the finalist/team cite scientific literature, or only popular literature (i.e., local newspapers, Reader's Digest).

II b. Engineering Goals

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 conditions of use?

III. 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?

IV. 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?