Judging Guidelines & Evaluation Criteria

Points are assigned to creative ability, scientific thought or engineering goals (II a. and b. respectively), thoroughness, skill, and clarity. Team projects have a slightly different balance of points that includes points for teamwork. A chart of these point values is located at the end of these criteria for easy reference. Following is a list of questions for each set of criteria that can assist you in interviewing the Finalists and aid in your evaluation of the Finalists' projects.

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

1. Does the project show creative ability and originality in the questions asked?
    i. In the approach to solving the problem?
    ii. In the analysis of the data?
    iii. In the interpretation of the data?
    iv. In the use of equipment?
    v. In 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. Scientific & Engineering Goals:

A. Scientific Thought (Science Project -- Individual - 30, Team - 25)

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 used correctly?
6. Are there adequate data to support the conclusions?
7. Does the Finalist/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 (e.g, local newspapers, magazines)?

B. Engineering Goals (Engineering Project -- 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 or applications?
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 the 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 /Team worked?

V. Clarity (Individual - 10, Team - 10)

1. How clearly does the finalist or team discuss his/her/their 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 are the data presented?
5. How clearly are the results presented?
6. How well does the physical 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 of the project?
3. Does the final work reflect the coordinated efforts of all team members?

POTENTIAL MAXIMUM SCORE CHART	**Individual Project**	**Team Project**
Creative ability	30	25
Scientific Thought / Engineering Goals	30	25
Thoroughness	15	12
Skill	15	12
Clarity	10	10
Teamwork	--	16
TOTAL POSSIBLE SCORE	**100**	**100**

The maximum score a Finalist or Team can obtain is 100.