Judging Guidelines

Suggested Evaluation Criteria for Judging

While judges may deviate from the guidelines provided, all awards must be selected based on reasonable criteria for scientific merit. All scores must be submitted according to a 100-point scale. The following are suggested guidelines for point distribution:

I. Creative Ability (30 points)

1) Does the project show creative ability and originality in:
   a. the approach to problem-solving?
   b. analysis of the data?
   c. interpretation of the data?
   d. use of equipment, if applicable?
   e. construction or design of new equipment, if applicable?
2) Does the research support an investigation and help answer a question in an original and/or innovative way?
3) Does the project promote an efficient and reliable method for solving a problem? Distinguish between "gadgeteering" and ingenuity?

II a. Scientific Thought (30 points)

(For engineering projects, see IIb. Engineering Goals.)

1) Is the problem stated clearly and unambiguously?
2) Is the problem sufficiently limited to allow a plausible study?
3) Is there a procedural plan for obtaining a solution?
4) Are the variables clearly recognized and defined?
5) If controls are necessary, did the Finalist recognize this, and were they applied correctly?
6) Is there adequate data to support the conclusions?
7) Does the Finalist/Team recognize the limitation of the data?
8) Does the Finalist/Team understand the project's connection to related research?
9) Does the Finalist/Team have an idea of what might be important for further research?
10) Did the Finalist/Team cite scientific literature (vs. only popular literature, e.g, local newspapers, magazines)?

II b. Engineering Goals (30 points)

1) Does the project have a clear objective?
2) Is the objective relevant to the needs of the potential user?
3) Is the solution: workable? Acceptable to the potential user? Economically feasible?
4) Could the solution be utilized successfully in design and/or construction of an end-product?
5) Is the solution a significant improvement over current state-of-the-art or applications?
6) Has the solution been tested for performance under conditions of use?

III. Thoroughness (15 points)

1) Was the project carried to completion within the original scope?
2) How completely was the problem addressed?
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/Team spend on the project?
7) Is the Finalist/Team familiar with scientific literature in the relevant field?

IV. Skill (15 points)

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 (e.g., home, school laboratory, university laboratory)?

Did the student or team receive assistance from parents, teachers, scientists, or engineers? Was the project completed under adult supervision, or did the Finalist/Team work largely alone? 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?

3) If the work was performed in a "mentor-rich" environment, do(es) the Finalist(s) exhibit evidence of their independent contributions to the work?

V. Clarity (10 points)

1) How clearly does the Finalist or team discuss his/her/their project and explain the purpose, procedure and conclusions? Watch out for "canned" 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?

SUGGESTED SCORE CHART Points

Creative Ability 30
Scientific Thought / Engineering Goals 30
Thoroughness 15
Skill 15
Clarity 10

Total Possible Score 100