Some Judging Guidelines for Science Fairs

Be familiar with the judging guidelines prior to arrival at the science fair. Ask for a copy of the rules from the Science Fair Director or see below.

Before you begin:

1. Introduce yourself to the student/s.
2. Encourage the student/s to shake your hand.
3. Sit in a chair or kneel down to bring your eye contact to the student's level or below. Many of the students are not as tall as you and could feel intimidated by having to look up at their judges. Please try to put the students at ease – they will ultimately give a better presentation.

A good start to the Interview is to ask students to summarize their projects. The students should:

- Specify the source of their ideas
- Clarify both the problem addressed and the basis for their Hypothesis or Engineering Goal
- Define the controlled and variable factors involved in their project
- Explain procedures used to answer their questions
- Detail how their data was collected and analyzed
- Summarize their findings and conclusion and explain the relevance behind them

(If this is a continuation project from the previous year, then he/she should summarize the previous year's work before concentrating on this year's research. If you are unfamiliar with some of the student's terminology, please feel free to ask him/her to clarify it for you.)

Please Note:
Please allot each student with an equal amount of time during the interview process.

After this initial presentation, and if time allows, you may request additional information:

- Background research
- Materials and assistance provided
- Information on the project board (ie: explanation or graphs or data)
- Planned continuation of the project, etc.

Please Note:

- Personal questions about the student's background, home and school life, must be avoided. Only questions related to the project are permissible.
- Please keep in mind that some students may be shy or speak English as a second language.
- While skill in oral presentation is part of what you are evaluating, your final score should be based primarily on creativity, scientific or engineering goals, thoroughness, and skill and clarity.
- Remember to put the students at ease in the beginning and compliment them on work done. Encourage them to expand their interests of research.
- Thank them.

Judges should look for:

- Knowledge gained
- Scientific Method or Engineering Goals
- Creativity
- Individual work
- Thoroughness
- Accuracy of conclusions
- Quality or written and visual presentations.

Questions You Might Ask
(Time Permitting)

- What is the most important thing that you want me to know about your project?
- How did you get the idea for your project?
- What are your control factors? What are your variables? What is the difference between your control group and experimental group(s)?
- What skills did you acquire to do this project?
- What help did you have from others? (It is OK for the student/s to have help, especially elementary and junior division. Just make sure the student understands what was done and why)
- Explain this graph (or table) to me
- What surprised you most about your experiment?
- If you were to continue this project next year, what changes would you make?
- What application could your project have in everyday life?
- What experimental errors did your encounter and how did you correct for them?

Other Helpful Hints

1. Be sure to ask questions of each student whose project you are judging. Don't be hesitant to provide constructive suggestions on their methods, conclusions, hypothesis, display, or presentation. Your input is value added to the student's education.
2. Be positive, enthusiastic, and supportive of the student's work and efforts. When you make comments on the student's project, be mindful of the ego involved and the need to provide a good role model for the student.
3. If you become aware of activities happening on the judging floor which are against the rules or improper in conduct by students, other judges, teachers, parents, or anyone else, notify the Science Fair Director immediately.
4. If you should decide almost immediately that a project is not a winner, but the student is sincere, please continue to talk to the student about the topic of his or her project and try to provide a learning experience for the student.
5. Try to make your interviews with the student presenter personal and devote your full attention to the student for the duration of the judging of his or her project.
6. Don't worry if you are not an expert in the area of science or technology related to the student's project. As a knowledgeable adult, you will be providing a valuable audience for the student's presentation and the student will have an opportunity to fully explain the question and background of the problem to you. Ideally, the projects should be presented in a fashion that is understandable to a "lay person".
7. Please ask the organizing committee or the Science Fair Director if you have difficulty locating a project you have been assigned to judge.
8. Be careful about any out loud comments about individual projects. Students and their adult escorts may overhear such comments and confidentiality of results may be impacted.
9. HAVE A GREAT TIME JUDGING YOUNG SCIENTISTS' WORK!

Evaluation Criteria for Category Judging

The criteria and questions below are suggested as a guide for your category judging. 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 a. Creative Ability (Individual - 30, Team - 25)

- 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?
- Creative research should support an investigation and help answer a question in an original way.
- 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. 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 only popular literature (i.e., local newspapers, Reader's Digest).

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

IV. Skill (Individual - 15, Team - 12)

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?

V. Clarity (Individual - 10, Team - 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'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 student/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?