DELAWARE VALLEY SCIENCE FAIRS, INC.

JUDGING CRITERIA

What are we Judging?

You are judging the quality of work done on a student research project. The project must involve experimentation, laboratory, field or theoretical work, not only library research. The project should be compared with the other projects in the same category and Fair; not to an outside standard. There are different criteria when judging science experiments versus engineering, mathematics, computer science, or theoretical physics. As shown below, both criteria have five sections as well as suggested scoring for each section. Each section includes key items to consider for evaluation both before and after the interview. Judges should examine the student notebook and, if present, any special forms such as form 1C (Regulated Research Institution/Industrial Setting).

The interview provides the opportunity to interact with the student and evaluate their understanding of the project's basic science, interpretation and limitations of the results, and conclusions. It is very important to determine who did the work and how much the student was involved. However, do fall into the trap that a sophisticated project could not be the work of the student. Some of these students are quite capable and brilliant. That is why they are here!

- If the project was done at a research or industrial facility, you should determine the degree of independence of the student in conducting the project. See form 1C.
- If the project is a multi-year effort, the interview should focus ONLY on the current year's work. You should review form 7 (Continuation Projects) to clarify what progress was completed this year.
- All team members should demonstrate significant contributions to and an understanding of the project.

CRITERIA

Priority is to be given to the Research Question, Design and Methodology, Execution, Creativity, and Presentation. The following weights are given as a guide, but **your decisions will be by consensus of your panel of judges**.

Research Question.....10 pts
Design and Methodology.....20 pts
Execution.....20 pts
Creativity.....15 pts
Presentation:
Interview.....25 pts
Poster.....10 pts

(more)

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Judging Criteria for Engineering Projects

Research Problem:

- description of a practical need or problem to be solved
- definition of criteria for proposed solution
- explanation of constraints

Design and Methodology:

- exploration of alternatives to answer need or problem
- identification of a solution
- Is the solution workable?
- Is the solution economically feasible?
- development of a prototype/model

Execution: Construction and Testing
- Prototype demonstrates intended design
- prototype has been tested in multiple conditions/trials
- prototype demonstrates engineering skill and completeness

Creativity:
- in the use of instruments
- in the design or construction of new instruments
- project demonstrates significant creativity in one or more of the above criteria

Presentation:

a. Poster
- does it attract attention?
- logical organization of material
- clarity of graphics and legends
- supporting documentation displayed
- what parts of the display were created by the student? Were others involved?

b. Interview
- clear, concise, thoughtful responses to questions
- understanding of basic science relevant to project
- understanding interpretation and limitations of results and conclusions
- degree of independence in conduction project
- recognition of potential impact in science, society and/or economics
- quality of ideas for further research
- for team projects, contributions to and understanding of project by all members.