



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
<u>Presentation:</u>	
Interview.....	25 pts
Poster.....	10 pts

(more)

Research Question:

- clear and focused purpose
- was the question sufficiently limited to allow plausible attack?
- testable using scientific methods
- student use of scientific literature or popular literature
- is the student aware of other approaches or theories concerning the project?

Design and Methodology:

- well designed plan and data collection methods
- variables and controls defined, appropriate and complete

Execution: Data Collection, Analysis and Interpretation

- Systematic data collection and analysis
- were there adequate data to support the conclusions?
- reproducibility of results
- appropriate application of mathematical and statistical methods
- sufficient data collected to support interpretation and conclusions

Creativity:

- in the question asked
- the use of instruments
- project demonstrates significant creativity in one or more of the above criteria

Presentation:

A. Poster

- does it attract attention?
- logical organization of materials
- 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
- understand of basic science relevant to project
- understanding interpretation and limitations of results and conclusions
- Does the student have the required laboratory, computational, observational and design skills to obtain supporting data?
- degree of independence in conducting 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