



# Judging Guidelines

## Suggested Evaluation Criteria for Judging

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Judges scoring project entries are asked to use the Nebraska Junior Academy of Sciences Judge's Score Sheet, which is based on a 100 point system. Points are assigned accordingly to the four categories listed below, with points weighted as per the approved judge's score sheet. The following questions for each set of criteria can assist you in interviewing the students and aid in your evaluation of the top ten projects.

### **SCIENTIFIC METHOD OR ENGINEERING GOALS (60)**

#### *Scientific Method (60)*

1. Is the problem stated clearly and unambiguously? (1)
2. Was the problem sufficiently limited to allow plausible attack? Good scientists can identify important problems capable of solutions. (1)
3. Does the original hypothesis address the problem? Is it clearly defined? (2)
4. Does the hypothesis lend itself to measureable testing? (2)
5. Was there a procedural plan outlined aimed at obtaining a solution? (3)
6. Are variables recognized and defined? (3)
7. Are there appropriate corresponding controls? Does the student recognize their need and use them accordingly? (3)
8. Are there adequate data to support the conclusions? (4)
9. Does the student recognize the limitations of the data and ...
10. Does the student have an idea what further research is needed?(4)
11. How complete are the projects notes and/or logbook?(4)
12. Has the data been properly collected? (5)
13. Is the data complete? Disaggregated? Appropriately displayed?\* (5)
14. Is the conclusion logical, related to the original purpose, and supported by data?(6)
15. Does the student understand the project's ties to related research? (6)
16. Is the conclusion based on a single experiment or replication? (6)
17. Was the purpose carried out to completion within the scope of the original intent? (6)

\*See Communication Skills for more complete evaluation

Or:

### *Engineering Goals (60)*

1. Does the student project have a clear objective? (1)
2. Is the objective relevant to the potential user's needs? (2)
3. Is the solution: workable? Acceptable to the potential user? Economically feasible? (3)
4. Could the solution be utilized successfully in design or construction of an end product? (4)
5. Is the solution a significant improvement over previous alternatives or applications? (5)
6. Has the solution been tested for performance under the conditions of use? (6)

### **COMMUNICATION SKILLS (20)**

1. How clearly does the student discuss his/her/their project and explain the purpose, procedure and conclusions? Watch out for memorized speeches that reflect little understanding of principles. (1)
2. Does the written material correlate with and reflect the student's understandings of the research? (3)
3. Are the important phases of the project presented in an orderly manner?(2)
4. How clearly are the data represented? Are their charts, graphs, other visuals? (2)
5. How well does the physical display explain the project? Is it attractive, easy to read and otherwise accessible? (2)
6. Was the project presented in a forthright manner, without tricks or gadgets?
7. What about the bibliography; does the student cite scientific literature, or only popular literature? (4)
8. Does the bibliography seem to be shown in the student's work, or is it just a compilation of sources that the student doesn't seem to have really consulted? (4)

## **PERSONAL GROWTH and CREATIVITY (20)**

1. Does the project show creativity, ability and originality in the questions asked? (2)
2. Does the project show creativity and originality in the approach to solving problems? (2)
3. Is there enhanced mental discipline and order in the analysis and interpretation of data? Is there a sense of seriousness, rigor and humility as opposed to gadgeteering?(3,4)
4. Can the student tell you what he or she has learned from the project? (3)
5. If it is a group project, has each student contributed significantly to the project, at least in ways that reflect his or her skills and abilities? What part did each student play in the project? (4)
6. Was the project done independently, or are there indications of excessive outside help? (4)
7. Did the student show maturity and good judgment by organizing a project that is relevant and significant?(1)
8. Have the student's observational skills been enhanced? How? (3)

## **POTENTIAL MAXIMUM SCORE CHART**

<b>Scientific Method or Engineering Goal</b>	<b>60 points</b>
<b>Communications Skills</b>	<b>20 points</b>
<b>Personal Growth</b>	<b>20 points</b>
<b>Total Possible Score</b>	<b>100 points</b>