

Criteria	What to Look for While Judging – Scientific Research Projects	Points
Scientific Thought	Scientific Thought: 1. Question or problem was stated clearly and unambiguously 2. The procedure/methods were well thought out and organized 3. Data and results were presented using quantifiable numbers and statistical analysis 4. Lab notebook/logbook is complete with original data, dates, & notes 5. Variables & Controls are clearly recognized and used appropriately 6. The student/team understands their project's tie to related research 7. Measurements were made with as much accuracy as possible	30
Creative Ability	1. The project showed creative ability and originality in: <ul style="list-style-type: none"> • The question asked • The approach to the problem • The interpretation of the data 2. The display was creative and pleasing to look at	25
Thoroughness	1. Adequate data were collected to support the conclusions 2. Conclusions are based upon multiple trials, replications and/or test subjects 3. The student/team is aware of other theories or approaches 4. Conclusions and/or data analysis describe possible errors or flaws 5. Background research is related to the project and summarized by the student 6. References are identified 7. The student/students allowed themselves enough time to perform a thorough investigation 8. TEAMS ONLY: Each member of the team has made a clear, outlined contribution to the project and is familiar with all aspects of the project	20
Skill	1. The student/team demonstrated that they have the required laboratory, computation, observational and design skills necessary to have completed their project 2. The student/team may have received help and assistance but the completed project reflects their work and understanding 3. The written material reflects the student/team's understanding and research	15
Clarity	1. The important phases of the project are presented in an orderly manner 2. There are few or no spelling and grammatical errors 3. Data and results are presented clearly 4. Graphs and charts are understandable and labeled correctly with measurable units	10
Total Points Possible		100

Criteria	What to Look for While Judging – Engineering Projects	Points
Problem Identification	<ol style="list-style-type: none"> 1. Several questions are asked that help define the problem 2. Specifications and Constraints have been identified 3. Research has identified previous solutions to the stated problem 4. Criteria for a successful solution have been clearly identified 	20
Planning	<ol style="list-style-type: none"> 1. Several sketches of possible solutions are present 2. The design process shows an iterative and systematic approach that is clear and logical 3. A final drawing of a prototype is present that includes: multiple views, dimensions, parts list, and tools 4. Assembly instructions are present 5. Operating instructions are present 	25
Prototyping	<ol style="list-style-type: none"> 1. Evidence (photos, video, etc.) of a prototype built from the final plans is present 2. The prototype closely matches the plans 3. Prototype has been used to test the feasibility of the proposed solution 4. The prototype has been tested under the intended working conditions 	20
Analysis	<ol style="list-style-type: none"> 1. Data is present and has been used to support or dispute the effectiveness of the prototype as a solution to the stated problem 2. Graphs or charts are present that show the collected data 3. Data is used to propose improvements or changes to the prototype 4. Improvements to the prototype have been suggested that reflect the data obtained while testing 	20
Communication	<ol style="list-style-type: none"> 1. The design process has been documented in a journal or notebook and that documentation is present 2. Data has been used to provide evidence that the solution to the problem has satisfied the set criteria and specifications 3. Evidence is used to support the merits of the design solution 4. All information is presented in a clear, concise, and neat format 5. Student is able to engage in effective conversation regarding their design process 6. TEAMS ONLY: Each member of the team has made a clear, outlined contribution to the project and is familiar with all aspects of the project 	15
Total Points Possible		100

Judge Number: _____

Science Criterion	Points Possible													Points Possible	Engineering Criterion
Project #	→													←	Project #
Scientific Thought	30													20	Problem Identification
Creative Ability	25													25	Planning
Thoroughness	20													20	Prototyping
Skill	15													20	Analysis
Clarity	10													15	Communication
Total	100													100	Total
Notes (Optional)															Notes (Optional)

Possible Questions a Judge May Ask

Please prepare a written response to each of these questions in your project journal.

1. Explain your project.
2. What was your question/problem?
3. What was your hypothesis?
4. What was your control?
5. What was your variable/variables?
6. How did you test your hypothesis?
7. How many times did you test your hypothesis?
8. Show me your data/logbook.
9. What were the results of your tests?
10. How did others help you with your project?
11. What is your conclusion?
12. Could you have come up with another conclusion?
13. Could anyone repeat your experiment and come up with the same results?
14. Did you run into any problems?
15. How would you do your project differently if you did it again?
16. What are your unanswered questions?
17. What did you learn from your project?
18. Did you have fun doing your project?
19. Would you like to continue your project in the future?
20. If you continue your project, how would you proceed?
21. How did you come up with your project?
22. How does your project relate to other research?
23. Do your project/results have practical applications?