

### MSSEF Middle School Judging Rubric

The judging process focuses on what the student has learned about his or her chosen project, and the process used in completing the project. In addition the project is judged on the basis of the student's ability to discuss intelligently the overall scope and significant results of his or her work. Judging criteria for team and individual projects are identical.

<b>TOPICS FOR CONSIDERATION in JUDGING Middle School Students</b>	<b># Points to Assign</b>
<b>1. Scientific Approach (Possible 25 points)</b>	
A. Does the student start with a clearly stated hypothesis/question for experimentation or statement of an engineering goal?	<b>5 points</b>
a. How does the student form a research hypothesis/question or engineering goal?	
B. Does the student demonstrate knowledge of the scientific process in design and method? For engineering projects: Does the student have a clear objective and a tested solution?	<b>8 points</b>
a. Can the student explain why certain variables were chosen?	
b. Are enough trials performed? c. Are engineering projects subjected to re-design?	
C. Is the student's conclusions consistent with all the data he/she/they collected?	<b>7 points</b>
a. Is the student able to explain the data?	
b. Are collection methods sound? c. Can the student explain the results?	
D. Does the student learn any way to improve his/her scientific approach by doing the project?	<b>5 points</b>
<b>2. Knowledge of Project Area (Possible 20 points)</b>	
A. How effectively does the student conduct preliminary research using multiple valid scientific/engineering resources?	<b>5 points</b>
B. What is the extent of the student's knowledge of content area related to interpreting data and reaching conclusions?	<b>10 points</b>
C. Is the student aware of both the scope and limitations of the project?	<b>5 points</b>
<b>3. Thoroughness (Possible 20 points)</b>	
A. Does the student do sufficient research in the literature before starting the project?	<b>5 points</b>
B. Is sufficient data generated to produce valid results?	<b>5 points</b>
a. Are there enough trials? Are variables properly controlled? b. Is there any statistical analysis?	
C. Is thorough use made of all data/observations/ re-designing to reach a conclusion?	<b>10 points</b>
<b>4. Written Records and Reports (Possible 15 points)</b>	
A. Does the student keep an original handwritten, bound logbook with all plans, procedures, observations, and conclusions for failures as well as successes?	<b>10 points</b>
B. Does the student put together an accurate written report, complete with a bibliography?	<b>5 points</b>
<b>5. Ingenuity and Creativity (Possible 15 points)</b>	
A. Does the experimental question or engineering design show innovative thinking?	<b>5 points</b>
B. How effectively does the student use his or her materials in the solution of problems?	<b>3 points</b>
C. Is the explanation of the project clear and precise?	<b>2 points</b>
a. Does the explanation of the results and conclusions demonstrate critical thinking?	
D. Does the student identify any further questions or re-designs from the experiment or design outcomes?	<b>5 points</b>
<b>6. Visual Presentation (Possible 5 points)</b>	
A. Is the project displayed in a logical and organized manner, reflect the knowledge of the student and convey its message effectively?	<b>2 points</b>
B. Are charts and graphs of the data correct and used where needed?	<b>3 points</b>