2019-20 ELEMENTARY SCHOOL STEM FAIR
ENGINEERING DESIGN JUDGING SHEET

Name(s) _____ _____
Judge Number

_____

School _____

Project Title _____ #_____

Journal/Log	**Please Write Comments**	**Score**
Title Page Title, name, school, date.		**/4**
Table of Contents All steps of the engineering design process listed: Need, Research, Design Requirements, Design Plan and Methodology, Construction and Testing, and Reflection and Conclusion.		**/6**
Engineering Design Process **Define a Need** A practical need or a problem to be solved is clearly defined.		**/3**
Research Well-written research notes, in their own words, comprehensive, and contributes to field of study.		**/10**
At least three cited references.		**/3**
Design Requirements Explanation of the criteria for a proposed solution (what you want the prototype to do).		**/4**
Explanation of the constraints (the limitations of the prototype).		**/4**
Design Plan and Methodology Exploration of alternative designs shown to answer the need; shows beginning and progressive designs drawn and labeled.		**/6**
Identification of a final solution and labeled for the construction of the prototype to meet the criteria and constraints.		**/5**
Step-by-step instructions are detailed, clear, and complete.		**/5**
Materials' list is detailed, clear, and complete.		**/5**
Data gathering plan is well designed, systematic, and organized.		**/5**
Construction and Testing of the Prototype After construction, first testing of the prototype shows sufficient data gathering with written analysis.		**/5**
Follow up redesigning and testing of the prototype in multiple conditions with sufficient data gatherings with written analysis.		**/5**
Construction demonstrates engineering skills and completeness showing the criteria and constraints of the prototype.		**/5**
Reflection and Conclusion Student writing describes a detailed account of the process involved in creating the prototype.		**/5**
Shows strong, reasonable conclusions.		**/5**
Shows strong application to real-world ideas.		**/5**
Student learning is evident in the writing.		**/5**
Overall Journal Presentation Neat, organized, easy to follow, and complete.		**/5**
Make sure you look at each point value before you score it.	**Side One Total**	**/100**

2019-20 ELEMENTARY SCHOOL STEM FAIR
ENGINEERING DESIGN JUDGING SHEET
(Continued)

#_____

Score	Display, Interview, and Project Design	Please Write Comments
/5	**The Display** Engineering Design Processes is neat, edited, and physically sound.	
/10	Engineering Design Process is displayed: Need, Design Requirements, Design Plan and Methodology, Construction and Testing, and Reflection and Conclusion. **Research need not be on the board.**	
/10	Engineering Design Process shows clarity of words, graphics, legends, is self-explanatory, and flows in a logical order. **Supportive documentation cited on the board.**	
/5	Board design demonstrates exceptional and significant thought out creativity.	
/10	**Interview** Student shows a basic knowledge of field studied closely relevant to the project.	
/10	Student is able to clearly explain the Engineering Design Process with the results of the project and its potential impact on engineering.	
/10	Student gives thoughtful responses to questions and understands the interpretation and limitations of the results.	
/5	Student shows interest, enthusiasm, and a passion toward the project and has quality ideas for further research.	
/10	**Project Design Follow Through** Significant innovative, creative and procedural approach with ingenious use of materials and equipment to solve the practical need equal to at least a $5^{th}/6^{th}$ grade level thinking.	
/10	Project shows exceptionally strong, in-depth thought and work to design and build a prototype with excellent follow through to solve the need.	
/5	Student shows a large degree of independence in developing and conducting the project.	
/10	Student shows recognition of potential implications in engineering and society, demonstrating strong, interpretive conclusions with useful connections to the real world.	
/100 **Side 2 Total**	**Each line has different point values. Please make sure you look at each point value before you give a score.**	
/100 **Side 1 Total**		
/200 **Total Score**		