Central School Science (8)	Name
Engineering Scoring Guide:	Date / / Period
Title:	Page 1 of 4 Total Score

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➤ Note: The **lowest** score in each section is your score for that section.

	6 5 (Exceed)	4 (Pass)	3 2 ‹› 1 0	Yours:
(I) Identifying and Defining the Problem: ◄ Formulate a statement of a practical problem that can be addressed through engineering design.				**I___**
1. Problem	Detailed and to be solved through ED. Addresses a specific need identified from research.	To be solved through engineering design.	Unclear, or cannot be solved by engineering design.	
2. Background Information	Relevant; Uses science principles to identify viable solutions.	Relates to the problem.	Not related or only partially related to the problem.	
3. Criteria	Identifies criteria, constraints and/or limits based on science principles. Includes supporting rationale.	Identifies criteria and constraints for the solution.	Gives unrelated or unexplained criteria and constraints.	

Problem:

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Background

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Criteria and Constraints:

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(S) Generating Solutions: Describe solutions. Select a solution.. Design an investigation to test proposed solution. Provide attachments.				**S___**
	6 5 (Exceed)	**4 (Pass)**	**3 2 ‹› 1 0**	**Yours:**
4. Describe Solutions	Describe a variety of solutions that are distinctly different.	Describe possible solutions.	Description is of only one solution, or is incomplete.	
5. Evaluate Solutions	Use trade-offs to compare criteria, constraints and priorities of solutions.	Evaluates proposed solutions in terms of criteria, constraints and priorities.	Makes limited or no use of criteria, constraints and priorities.	
6. Select Solution	Select and defend a solution, based on review of design for criteria/constraints.	Select a solution. Explain the choice based on criteria and constraints.	Presents a solution with little reference to criteria, or uses unrelated criteria.	

Describe Solutions:

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Evaluate Solutions:

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Select and Defend a Solution:

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(T) **Testing Your Solution and Collecting Data:** Construct your solution. Test your solution by collecting, organizing and displaying data. Use labeled charts and graphs to facilitate analysis & interpretation.				T___
	6 5 (Exceed)	**4 (Pass)**	**3 2 ‹› 1 0**	**Yours:**
7. **Construct Solution**	Construction thoroughly addresses criteria, appropriate for testing. Design Modifications are	Construction addresses criteria and constraints & is appropriate to test.	Solution does not address criteria and/or constraints, and/or cannot be tested.	
8. **Observations and Data**	Collect accurate, relevant, detailed and complete data using advanced techniques.	Collect accurate data relevant to criteria. Uses appropriate testing techniques.	Data collection is not relevant and/or appropriate. Techniques not appropriate.	
9. **Organization and Display of Data.**	Display of data is thorough, planned and complete. Data facilitates a thorough evaluation.	Data is planned and complete. Data facilitates evaluation. Uses labels and correct units.	Display is incomplete, incorrect and/or does not facilitate evaluation.	

Observation Chart:

Display Graph:

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(A) Analyzing & Interpreting Results: Analyze dara. Evaluate solution in terms of criteria, constraints and trade-offs. Suggest improvements.				**A____**
	6 5 (Exceed)	4 (Pass)	3 2 ‹› 1 0	Yours:
10. Evaluate design and performance.	Uses scientific concepts; discusses relationships; identifies patterns; proposes some explanations.	Evaluate the tested solution in terms of design, performance criteria/constraints. Identify priorities & trade-offs.	Reports include errors; ‹› fails to show relationships; ‹› may fail to propose explanation(s).	
11. How well did you address the problem?	Thoroughly explain to what extent the solution addressed the criteria and constraints.	Describe to what extent the solution addressed the criteria and constraints.	Incompletely describes to what extent the solution addresses criteria and constraints.	
12. Identify Possible Improvements	Identifies & explains in technical detail possible design improvements. Uses trends in collected data.	Identifies and explains possible design improvements.	Identifies design improvements that are not needed or irrelevant.	

Evaluation:

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Address Criteria/Constraints:

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Improvements:

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