New York Performance Standards Consortium   Student_____
STEM rubric

Title of Design_____

Name of evaluator (please print)_____

Circle one: Teacher or External Evaluator   **Circle one: Written or Oral Defense**

Holistic evaluation (circle one): Outstanding   Good   Competent   Needs Revision

Signature_____   **Date**_____

06/14

Performance Indicator	Outstanding	Good	Competent	Needs Revision
Contextualize the Design Problem	--Engineering/design problem is clearly defined and explained in terms of the human needs that are to be solved or fulfilled. --Specific design constraints are clearly explained. --Specific criteria for success are clearly explained. --Background research on the project's content and context has been thoroughly conducted using relevant and credible resources.	--Engineering/design problem is defined and explained in terms of the human needs that are to be solved or fulfilled. --Specific design constraints are explained. --Specific criteria for success are explained. --Background research on the project's content and/or context has been conducted using relevant and credible resources.	--Engineering/design problem is defined but only partially explained in terms of the human needs that are to be solved or fulfilled. --Specific design constraints are mentioned but not fully explained. --Some criteria for success are explained but may not be specific. --Background research on the project's content and/or context has been conducted but uses few relevant and credible resources.	--Engineering/design problem is defined but not explained in terms of the human needs that are to be solved or fulfilled. --No or few specific design constraints are mentioned or explained. --Few criteria for success are explained. --Little or no background research on the project's content and/or context has been conducted.
Critique the Design Process	--Thoroughly describes the design phase including thoughtful evaluation of models (*e. g.*, diagrams, replicas, analogies, computer simulations, mathematical formulas) and design priorities. --Thoroughly justifies how the selected prototype will best	--Describes the design phase including evaluation of models (*e.g.* diagrams, replicas, analogies, computer simulations, mathematical formulas) and design priorities. --Justifies how the selected prototype will best satisfy	--Describes but does not sufficiently evaluate the design phase including models (*e. g.*, diagrams, replicas, analogies, computer simulations, mathematical formulas) and design priorities. --Only partially justifies how	--Describes but does not evaluate the design phase including models (*e. g.*, diagrams, replicas, analogies, computer simulations, mathematical formulas) or design priorities. --Does not justify how the selected prototype best

	satisfy all criteria for success. --Thoroughly justifies why all alternative prototypes were rejected. --Thoroughly identifies and describes all relevant variables including any appropriate controls.	some of the criteria for success. --Justifies why some of the alternative prototypes were rejected. --Identifies and describes most relevant variables including any appropriate controls.	the selected prototype best satisfies some of the criteria for success. --Only partially justifies why some of the alternative prototypes were rejected. --Identifies and describes some relevant variables including any appropriate controls.	satisfies some of the criteria for success. --Does not justify why some of the alternative prototypes were rejected. --Identifies but does not describe relevant variables including any appropriate controls.
Test the Design Prototype: Collect, Organize & Present Data	--Collects extensive relevant data in a reliable manner for the purpose of optimizing the design. --Thoroughly represents data appropriately in multiple ways (*e.g.,* tables, charts, graphs). --Conducts thorough mathematical analysis of the data.	--Collects relevant data in a reliable manner for the purpose of optimizing the design. --Represents data appropriately in multiple ways (*e. g.*, tables, charts, graphs). --Conducts mathematical analysis of the data.	--Collects sufficient and relevant data for the purpose of optimizing the design. --Represents data in multiple ways (*e. g.*, tables, charts, graphs). --Conducts analysis of the data.	-- Collects insufficient and/or irrelevant data. --Does not represent data appropriately. --Does not analyze the data.
Evaluate the Design (Prototype)	--Thoughtfully analyzes the extent to which prototype satisfies all criteria for success. --Thoughtfully explains how data were used in optimizing the design through multiple iterations. --Thoughtfully proposes effective and relevant revisions to the design.	--Analyzes the extent to which prototype satisfies some of the criteria for success. --Explains how some of the data were used in optimizing the design through multiple iterations. --Proposes some relevant revisions to the design.	--Describes but does not analyze the extent to which prototype satisfies some of the criteria for success. --Only partially explains how some of the data were used in optimizing the design through multiple iterations. --Proposes few relevant revisions to the design.	--Does not describe or analyze the extent to which prototype satisfies all criteria for success. --Does not explain how the data were used in optimizing the design through multiple iterations. --Does not propose any relevant revisions to the design.
Defense (for oral component only)	--Thoroughly answers questions relevant to the design and related topics.	--Adequately answers questions relevant to the design and related topics.	--Adequately answers questions relevant to the design.	--Does not adequately answers questions relevant to the design.