Figure 3.6: Engineering Design Process Rubric

	Exceeding Expectations	Meeting Expectations	Approaching Expectations	Developing
Define the problem. *MS-ETS1-1*	Shows a clear understanding of the problem to be solved. Rephrases the problem clearly and precisely.	Shows a basic understanding of the problem to be solved. Rephrases the problem clearly.	Shows limited understanding of the problem to be solved. Rephrases the problem with limited clarity.	Lacks understanding of the problem to be solved. Does not rephrase the problem.
Identify constraints and criteria. *MS-ETS1-1*	Identifies and clearly defines all the criteria. Specifies all the constraints with detail.	Identifies most of the criteria. Specifies most of the constraints.	Identifies minimal criteria. Identifies minimal constraints.	Identifies criteria that are irrelevant. Identifies constraints that are irrelevant.
Generate solutions. *MS-ETS1-2*	Generates an extensive list of possible solutions and thoroughly documents all ideas (list or diagrams).	Generates several possible solutions and documents ideas (list or diagrams).	Generates a single possible solution and documents the idea.	Generates an idea that is unreasonable or does not document ideas.
Develop a prototype and test. *MS-ETS1-3* *MS-ETS1-4*	Prototype meets the task criteria in insightful ways. The model or prototype is constructed with care, neat, attractive and follows plans accurately.	Prototype meets the task criteria. The model or prototype is constructed with care but may be missing details.	Prototype meets the task criteria to a limited extent. The model or prototype is messy or missing details.	Prototype does not meet the task criteria. The model or prototype is incomplete.

	Exceeding Expectations	Meeting Expectations	Approaching Expectations	Developing
Modify to optimize. *MS-ETS1-4*	Significant improvements are made to the design based on prototype testing and evaluation. Evidence of modification, testing, and optimization are thoroughly documented.	Some improvements are made to the design based on prototype testing and evaluation. Evidence of modification, testing, and optimization are documented.	Minor improvements are made to the design based on testing and evaluation results. Evidence of modification, testing, or optimization is incomplete.	Improvement based on testing and evaluation is not evident. Evidence of modification, testing, or optimization is missing.
Communicate results.	Provides thorough documentation for all steps of the EDP. Team presents a well thought out solution to the problem and includes a rationale for their solution. Teams shows a clear understanding of the related science concepts and design process.	Provides documentation for all steps of the EDP. Team presents a well thought out solution to the problem. Teams show a basic understanding of the related science concepts and design process.	Provides documentation for some steps of the EDP but does not include all steps. Team presents a single solution to the problem. Teams shows little understanding of the related science concepts and design process.	Provides little documentation for the steps of the EDP. Team presents a solution that does not solve the problem. Teams lacks understanding of the related science concepts and design process.

Source for standard: NGSS Lead States. (2013). Next Generation Science Standards: For states, by states. Washington, DC: The National Academies Press.