

Learning Targets / Success Criteria:

Unit: Engineering

Data Team: 8th science

Priority Standard:	<p>MS-ETS1-1. Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.</p> <p>MS-ETS1-2. Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.</p> <p>MS-ETS1-3. Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.</p> <p>MS-ETS1-4. Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.</p>
Overarching Skills:	<p>Define Criteria and Constraints of problem</p> <p>Systematically evaluate competing design solutions</p> <p>Analyzing data to compare designs</p> <p>Redesign a model based on recommendations from data</p>
WALT:	We are learning the purpose of engineering and design process
Success Criteria:	<p>I can understand that design process is a set of procedures for solving a problem</p> <p>I can understand that engineering is a process to develop a prototype/solution for a problem.</p>
WALT:	We are learning to understand a problem
Success Criteria:	<p>I can determine problem criteria</p> <p>I can determine problem constraints (limitations)</p> <p>I can ask relevant questions to further understand the problem</p> <p>I can investigate using various sources to answer questions about the problem (audience, experts, etc)</p>

WALT:	We are learning to investigate a problem
Success Criteria:	I can ask relevant questions I can find answers for my relevant questions
WALT:	We are learning to brainstorm solutions to our problem
Success Criteria:	I can generate more than one potential solution to a problem I can identify the important features of each potential design I can explain the reasoning/purpose of features on potential solutions I can seek feedback/suggestions from another person on potential solutions
WALT:	We are learning to evaluate potential solutions
Success Criteria:	I can evaluate each design against the criteria and constraints I can identify how all criteria and constraints are not met I can provide suggestions for improvement/changes to the designs to meet remaining criteria and constraints if needed I can determine which solution should be prototyped I can justify why this solution should be prototyped
WALT:	We are learning to revise potential solutions based on data
Success Criteria:	I can create a prototype of the chosen solution I can test a prototype and collect data on its performance I can evaluate test data to determine what works and what needs improvement I can revise my design based on test results to improve the solution I can explain the most recent design and justifies how it best meets criteria and constraints.