Teacher Answer Key

Engineering Design Rubric

	Does not meet expectation (1 point)	Approaches expectation (2 points)	Meets expectation (3 points)	Exceeds expectation (4 points)
Identifying the Problem	Relevance and context of problem is unmentioned. Scope and constraints are poorly defined resulting in unclear direction for investigation.	Relevance and context of the problem is included, but vaguely defined. Scope, criteria for success and constraints are included but only superficially.	Problem is specifically defined in a relevant way with context. Criteria for success are defined. Investigation considers relevant constraints.	Problem is specifically defined, as are root causes. Constraints are identified, specific, and testable.
Building a Model or Prototype	Constructs only one concept or solution to the problem.	Describes multiple solutions although without principles to guide how they address the problem at hand.	Multiple concepts or solutions are proposed with justification based within the constraints of the problem.	Multiple concepts or solutions are proposed with not only justification from constraints, but from external research.
Testing and Evaluating the Design	Evidence for design success is unsupported by testing.	Evidence for design success is weakly aligned to metrics that represent criteria and constraints.	Evidence for design success is well aligned to metrics that capture the criteria and constraints being explored.	Considers multiple metrics that align to several relevant criteria and constraints.
Optimizing the Design	Makes no iterative modifications to test changes in performance.	Makes changes to original model, but the changes are not iterative or are not guided by evidence from data.	Uses iterative modifications based on evidence from data.	Uses iterative modifications based on testing and justifies final design from data.
Sharing the Solution	Documentation of results does not cite references and lacks crucial information.	Documentation is organized but contains very little evidence and suggestions for further work.	Documentation communicates design strengths and weaknesses and makes recommendations for further work.	Documentation communicates design strengths and weaknesses. Evaluates tradeoffs between relevant constraints.
				Total / 20