



# Quality Review Rubric

## for engineering content



Reviewer: \_\_\_\_\_ Date: \_\_\_\_\_

Unit/Lesson/Activity: \_\_\_\_\_ Grade Level: \_\_\_\_\_

Author: \_\_\_\_\_  Approved  Rejected

Category Assigned:  1. Relating Science to Engineering  2. Relating Math to Engineering  
 3. Engineering Analysis/Partial Design  4. Engineering Design

| Section A: Engineering Motivation  | Yes | Yes with Modification<br>(please explain) | No<br>(please explain) |
|--|-----|---|------------------------|
| a. Does this activity require students to relate the science concept to an authentic problem in everyday life in the <i>procedure</i> or <i>assessment</i> sections? ( <i>Relate</i> might include asking for examples of real-world applications or requiring that students solve a real-world problem using the concept) |     |   |                        |
| b. Does the author clearly convey in the <i>engineering connection</i> ways in which students might relate the science or math concept to a real world problem in the procedure or assessment sections?  |     |   |                        |

| Section B: Engineering Concepts   | Yes | Yes with Modification<br>(please explain) | No<br>(please explain) |
|---|-----|---|------------------------|
| a. Does the activity <i>include a systematic and detailed examination</i> that incorporates math skills to define problems, predict performance, determine economic feasibility, evaluate alternatives, analyze mathematical models, and/or investigate failures?       |     |   |                        |
| b. Does the activity require students to identify appropriate <i>materials and tools</i> for their design based on specific properties and characteristics?   |     |   |                        |
| c. Does the activity require students to determine the best possible solution to a technical problem while <i>balancing competing or conflicting factors</i> (specifications and constraints) and trade-offs?   |     |   |                        |
| d. Does the activity require students to examine the more <i>abstract impacts</i> of engineering products or processes on individuals, society and the environment? (May also include environmental, ethical, economical, social, and political realities and impacts.) |     |   |                        |

| Section C: Engineering Design Process   | Yes | Yes with Modification<br>(please explain) | No<br>(please explain) |
|---|-----|---|------------------------|
| a. Does the activity require students to <i>define the problem</i> and describe the performance standards by which a design is evaluated? (May include quantitative and qualitative requirements such as size, weight, time, cost, life cycle, function, vs. safety, color, etc.) |     |   |                        |

|  |  |  |  |
|--|--|--|--|
| <p>b. Does the activity require students to <i>gather and research information</i> to solve the problem? (May include web/library research, conducting experiments, examining scientific or math concepts to understand how to apply them, etc.)</p> |  |  |  |
| <p>c. Does the activity require students to evaluate each proposed solution to <i>determine which solution best meets the needs</i> and satisfies the criteria?</p>  |  |  |  |
| <p>d. Does the activity require students to <i>build and test a prototype</i> of all or part of the design? (May include a graphical, physical, or mathematical representation of the essential features of the design.)</p>                         |  |  |  |
| <p>e. Does the activity enable students to <i>revise and improve their design</i> based on the results of testing and analysis?</p>  |  |  |  |
| <p>f. Does the activity require students to <i>report (oral or written) the process and results</i> of their engineering design activity?</p>  |  |  |  |