Oak Hills 2027 STEM Expo
Innovation/Engineering Project Scoring Rubric

Grade: _____ Project Number: _____
Project Name: _____

	4	3	2	1
Design Process	• Design aims to solve a real world problem • Need for the original or improved design is compelling • Prototype successfully functions	• Design aims to solve a problem • Need for the original or improved design serves a purpose • Prototype adequately functions	• Problem the design aims to solve is not clear • Need for the original or improved design lacks purpose • Prototype functions but has limitations	• Design is for entertainment or amusement • There is no compelling purpose for the original or improved design • Prototype does not function
Research	• Student clearly understands real world problem • Student clearly articulates criteria for a successful design • Student anticipates improvements of prototype and has researched ideas	• Student understands all facets of the problem • Student articulates basic criteria for a successful design • Student anticipates the need for improvement and has brainstormed ideas	• Student research to identify a solvable problem is weak • Student articulates some criteria for a successful design while ignoring other criteria • Student acknowledges need for improvement but has no ideas	• Student research to identify a problem is absent • Student is not able to articulate which design components are successful, or how they solve a problem • Prototype is presented without addressing improvements
Procedure	• Design process was followed • Multiple iterations of a design solution were defined • Criteria for design choice is clear • Prototype was rebuilt to make improvements during the process • Materials used were clearly communicated	• Design process was present • Multiple iterations of a design solution were identified • Criteria for chosen design is not clear • Some prototype improvements were made during the process • Materials used were adequately communicated	• Elements of the design process were missing • Iterations of possible design solution were brainstormed but not formalized • Improvements to the prototype were minimal during the process • Materials used were not clearly communicated	• Design process was not followed • Single design solution was defined • Improvements to the prototype were absent or not evidenced during the process • Materials list not included
Presentation of Solution	• The prototype solves the problem • Properties of chosen materials were thoughtfully considered • Notebook to record design process was used with fidelity	• The prototype partially solves the problem • Properties of chosen materials were considered • Notebook to record design process was used	• The prototype minimally solves the problem • Properties of chosen materials were minimally considered • Notebook to record design process was used sporadically	• The prototype does not solve a problem • Properties of chosen materials were not considered • Notebook to record design process was not used or is not present
Student Understanding	• Student clearly communicates how or why the revisions to their design worked and didn't work during the process • Student successfully articulates how improvements would allow their prototype to function better • Depth of understanding is present	• Student partially communicates how or why revisions to their design worked and didn't work during the process • Student articulates how improvements would allow their prototype to function better but may have flawed reasoning • Student demonstrates understanding	• Student has difficulty discussing design revisions because they may have been minimally present • Student can discuss with prompting from judges how design improvements would allow their prototype to function better • Student may have difficulty demonstrating understanding	• Student is unable to discuss design revisions because they may not have been present • Student is unable to discuss with prompting from judges how design improvements would allow their prototype to function better • Student does not demonstrate understanding
Additional comments:				**Total points:**