

Judging Rubric

Invention Name: _____ Grade Level: _____

Team _____

Members: _____

	Points Available	Points Earned
Engineering Design Process	55	
Problem <ul style="list-style-type: none"> Students should identify a real-world problem to solve with an invention. Students should describe the problem in detail* (where it exists, what needs to be solved, and any other important details). <i>*Younger students can describe the problem in less detail.</i>	5	
Research <p>Students should research and answer the following questions:</p> <ol style="list-style-type: none"> Who or what is affected by this problem? What solutions/inventions already solve this problem? How could the problem be solved better or differently? 	10	
Requirements <ul style="list-style-type: none"> Students should identify and list the requirements* for their solution (ex. size, weight, strength, time, cost, etc.). <i>*Requirements are the things any potential solution must do or fulfill to successfully solve the problem.</i>	10	



<p>Solution</p> <ul style="list-style-type: none"> • Students should identify potential solutions* and compare these with their requirements to choose the best solution. <i>*K-2 only needs to record the chosen solution.</i> • Students should research the originality* of their solution using sources such as the internet, stores, and books. <i>*K-2 is not required to research originality.</i> 	10	
<p>Prototype</p> <ul style="list-style-type: none"> • Students should decide how their solution will work, what materials they will use, and what it will look like. • Students should draw and describe their solution in as much detail as possible. • Students should document their work throughout the build process.* • The prototype is a model of the team’s design. It does <u>not</u> need to be fully functional or be made of costly materials. <i>*K-2 is only required to document the design, not the build process.</i> 	10	
<p>Testing & Improvement</p> <ul style="list-style-type: none"> • Students should test their prototype to see how well it works. • Students should describe the test(s) they performed and the results/outcome.* • If the prototype needs improvement, students should return to previous steps, make changes, and document those changes. <i>*Older students should record numerical results if relevant.</i> 	10	
Teamwork 10		
<p>Teams should consist of 3-4 students.* <i>*In some cases, a team of 2 may be necessary.</i></p> <ul style="list-style-type: none"> • 10 points if the team has 2-4 students • 5 points if the team has 5 students • 0 points if only one student or a team of more than 5 	10	



Communication		30
Logbook <ul style="list-style-type: none"> • Team info should be recorded on the cover or first page. • Originality statement should be signed by all team members. • The Logbook should document the students' work for each step of the engineering design process. • The Logbook should show the students' design journey (decisions, revisions, difficulties, outcome, etc.) rather than just the final result. 	10	
Tri-Fold Board <ul style="list-style-type: none"> • The tri-fold board should be neat and attractive. • The board should summarize each step of the engineering design process and the final result. 	5	
Verbal Presentation <ul style="list-style-type: none"> • All team members should participate equally and take turns explaining their project. • Students should explain the problem, the steps they took to solve it, the challenges they faced, final conclusions, and the project outcome. • The invention should be demonstrated if possible. • Students should speak loudly, clearly, with good eye contact, and with minimal fidgeting. 	10	
Prototype/Model <ul style="list-style-type: none"> • The prototype should clearly communicate the purpose and function of the invention design. • The prototype is a model of the team's design. It does <u>not</u> need to be fully functional or be made of costly materials. • At a minimum, the prototype should illustrate how the invention is intended to operate or be used. 	5	
Biblical Connection		5
The team should select and briefly describe* a biblical principle, story, or character that relates to their project. <i>*K-2 is only required to select a spiritual lesson, not describe it.</i>	5	
Total		100



