



## STEM REPORT RUBRIC

School:

Kart Number(s):

Component	Poss. Pts.	Score (%)	Score (pts.)	Comments
<b>Report Structure &amp; Format:</b> <b>Introduction:</b> There is an introduction that draws in the reader, highlights what will be discussed in the report, and excites the reader to read the report.  <b>Main Body:</b> The main body is well-organized, divided into logical sections, and easy to follow. The key points in each section are clear, intuitive, and connected to form a cohesive story within the section and the overall report.  <b>Conclusion:</b> There is a conclusion that summarizes the key points and leaves the reader energized to share the report with others.  <b>Pictures, diagrams, charts, graphs, and images:</b> used throughout the report in support of, or to substitute text to more effectively and efficiently convey information to the reader. Their placement is logical, their purpose is clear, and they are easy and intuitive to interpret and understand.	20		0	
<b>Design Process (Content of Main Body):</b> The team should explore 2 or more opportunities to improve their karts' performance. Areas may include, but are not limited to those listed below. The interaction/combination of variables should also be analyzed and understood - Power management (motor controller settings, motor efficiency, driving style, battery charging methods, battery capacity testing, etc.) - Chassis tuning (front & rear track width, weight distribution front to back and left to right, front end set-up, etc.) - Drivetrain tuning (gear ratio, motor RPM, etc.)  For each improvement area, teams should follow a logical design process: 1. <b>Define Requirements:</b> Describe the desired improvement (i.e. better acceleration during turn exit) 2. <b>Research &amp; Predictions:</b> Describe the variables that could create the desired improvement and calculate/estimate the expected impact they will have 3. <b>Test:</b> Design a credible experiment that isolates the tested variables as much as possible and has an accurate measurement system. Run the experiment, record the data, analyze and interpret the results, and describe how the result compared to your expected and desired outcome. 4. <b>Coorelation/Iteration:</b> Continue testing and iterating design variables until your calculated predicted performance aligns closely with actual test results. 5. <b>Results:</b> Summarize final achieved results in terms of kart performance.	60		0	
<b>Innovation/Creativity:</b> - The team explored a wide breadth of potential improvements, including unique changes to their kart that had potential to significantly improve its performance. - The team devised clever and creative ways to predict and test potential improvements within their known capabilities and constraints. - The team implemented an innovative change to their kart that significantly improved its performance.	20		0	