

### 1.3.2 Solar Hydrogen Vehicle Rubric



Score: \_\_\_\_\_/108 points

#### Documentation [44 points]

Topics/Multiplier		4 points	3 points	2 points	1 point
<b>Professional Appearance</b>	1 x	Includes all required sections, has page numbers and appropriate headings for the different sections.	Includes most required sections, has page numbers and appropriate headings for the different sections.	Does not include all required sections, has page numbers, but headings for the different sections should have been titled better.	Is missing several required sections, has page numbers, but headings for the different sections should have been titled better.
<b>Title Page</b>	1 x	Includes all components required for a complete title page.	Includes 80% or more of the necessary components for a complete title page.	Includes 60% or more of the necessary components for a complete title page.	Includes 50% or more of the necessary components for a complete title page.
<b>Table of Contents</b>	1 x	Includes all major and sub headings and the corresponding page numbers.	Is missing some major and sub headings and the corresponding page numbers.	Is missing many major and sub headings and the corresponding page numbers.	Is missing most major and sub headings and the corresponding page numbers.
<b>Design Brief</b>	1 x	Includes all parts of a design brief organized into one page. Clearly details the design problem and constraints.	Includes all parts of a design brief organized into one page.	Includes most parts of a design brief organized into one page.	Includes some parts of a design brief organized into one page.
<b>Initial Design Solution</b>	1 x	Produces a detailed sketch of initial design concept along with a descriptive paragraph of idea. Sketches are neat and labeled for clear understanding. Major modifications for refinement are clearly explained.	Produces a somewhat detailed description of initial design solution. Includes sketch and paragraph. Sketches are labeled.	A sketch and paragraph description of the initial design concept is included.	A sketch of initial design concept is included.
<b>Testing Summary Content</b>	2 x	All needed items included in the testing summary - photo of vehicle & modifications, voltage, current, weight, speed, electrical power, mechanical power, efficiency.	Most necessary items included in summary table.	Some necessary items included in summary table.	Few necessary items included in summary table.
<b>Testing Summary Neatness &amp; Organization</b>	2 x	All necessary items organized neatly in document which demonstrates a logical and clear way to identify and compare values. Photos are labeled properly and include enough views to clearly describe power configuration.	All necessary items organized neatly to easily identify and compare values. Photos are labeled properly.	All necessary items organized into tables. Photos are labeled.	Most items are missing or highly disorganized, making it difficult to understand the information for comparison.
<b>Power Source Evaluation</b>	2 x	Paragraph(s) evaluation is well-written and fully describes conclusions obtained by testing. A power source is recommended and justified using the testing results. Includes thoughtful discussion about how the power source would be scaled for normal vehicle use. Paragraph(s) is organized and written with no grammar or spelling errors.	Paragraph(s) evaluation fully describes conclusions obtained by testing. A power source is recommended and justified. Includes discussion about how the power source would be scaled for normal vehicle use. Paragraph(s) is written with few grammar or spelling errors.	Paragraph(s) evaluation describes conclusions obtained by testing. A power source is recommended and justified. Paragraph(s) is written with many grammar or spelling errors.	Paragraph(s) evaluation describes conclusions obtained by testing. Paragraph(s) is written with many grammar or spelling errors.

### Individual Deliverables [40 points]

Topics/Multiplier		4 points	3 points	2 points	1 point
<b>Design Brief Notes &amp; Team Norms</b>	1 x	A section titled neatly for this project with notes about the key points in design brief clearly included. Team norms recorded neatly.	A section titled neatly for this project with notes about the key points in design brief included. Team norms recorded neatly.	A section titled for this project with notes about the key points in design brief included. Team norms recorded.	A section titled for this project but missing design brief notes or team norms.
<b>Brainstorming Ideas</b>	1 x	Produces a detailed sketch of at least TWO viable brainstorming ideas. All sketches include labels and descriptions for clear understanding; sketches are neat, signed and dated.	Produces a sketch of at least TWO viable brainstorming ideas. All sketches include labels, are neatly drawn, signed and dated.	Produces sketches of at least one viable brainstorming ideas. Sketch(es) may be difficult to understand from lack of detail or neatness.	Produces sketches of at least one viable brainstorming ideas. Sketch(es) are difficult to understand from lack of detail or neatness.
<b>Project Log</b>	2 x	Provides a neat and accurate description of tasks completed each day with specific <b>details</b> about <b>personal contributions</b> to the project. Complete sentences used.	Provides an accurate description of tasks completed each day with specific details about personal contributions to the project.	Provides a description of tasks completed each day.	Provides a description of tasks completed in the project.
<b>Table of Measurements</b>	2 x	All <b>five</b> measurements (F, d, t, V, I) are recorded precisely, neatly for each power source, and in an organized & easy to read manner. All measurements have correct metric units.	All measurements are recorded and have correct units.	Over half of the measurements are recorded and have correct units.	Less than half of the measurements are recorded.
<b>Calculations</b>	2 x	The <b>four</b> calculations of Speed, Mechanical Output Power, Electrical Input Power, and Efficiency are accurately calculated for each power source. Each calculation clearly & neatly shows the equation used, the work done, and the answer circled/highlighted.	Calculations are accurately completed. Not all work is shown and/or the work in not neatly written.	At least 2 of the calculations are accurately completed. Not all work is shown and/or the work in not neatly written.	Only 1 calculation is completed, work is missing, and/or difficult to read.
<b>Conclusion</b>	2 x	All <b>four</b> questions answered thoroughly and thoughtfully with full explanation demonstrating mastery of concepts learned.	All questions answered fully with explanation demonstrating concepts learned.	All questions answered but incorrectly and/or lacking explanation demonstrating concepts learned.	Not all questions answered.

### Teamwork [16 points]

<b>Group Responsibilities</b>	2 x	Group Responsibilities Form completed. Gantt chart created neatly and organized for ease of use. Team responsibilities are <b>DIVIDED EQUALLY &amp; FAIRLY</b> , representing accurately each person's role in the project. Gantt Chart updated to reflect actual work done each day.	Group Responsibilities Form completed. Gantt chart created neatly. Team responsibilities represent accurately each person's role in the project. Gantt Chart updated to reflect actual work done each day.	Group Responsibilities Form completed. Gantt chart created. Gantt Chart updated to reflect actual work done each day.	Group Responsibilities Form completed. Gantt chart created.
<b>Group Interaction</b>	2 x	All members are on task at all times and contribute in a positive manner. Members settle disputes productively and respect each other at all times.	Most members are on task at all times and contribute in a positive manner. Members settle disputes productively.	Most members are on task some times and contribute in a mostly positive manner. Members are able to settle disputes.	Some members are off task and do not contribute in a positive manner. Members are unable to settle disputes productively disrespectful at all times.

### Solution Performance [8 points]

<b>Requirements</b>	1 x	Fully meets design requirements.	Meets most design requirements and supports the design function.	Meets some requirements but not enough to support the design function.	Does not meet design requirements.
<b>Overall Quality</b>	1 x	Mechanisms are well built, and the chosen parts are appropriate.	Mechanism functions most of the time, and the chosen parts are appropriate.	Mechanism sometimes functions, and the parts are not chosen appropriately.	Mechanism rarely functions, and the parts are not chosen appropriately.