

# Mini Car Design Challenge Rubric

Elements	Weight	5 Points	4 Points	3 Points	2 Points	1-0 Points	Total
<b>Reverse Engineering</b>	<b>X2</b>	Functional and interoperability analysis of coins, paperclip, linking cube, and track were performed and include all appropriate sketches and annotation.	Functional and interoperability analysis of coins, paperclip, linking cube, and track were performed and include appropriate sketches and annotation.	Functional and interoperability analysis of coins, paperclip, linking cube, and track were performed and include appropriate sketches.	A poor unctional and interoperability analysis of coins, paperclip, linking cube, and track were performed and include appropriate sketches.	Functional and interoperability analysis of coins, paperclip, linking cube, and track were not performed.	
<b>Concept Sketching</b>		2 or more exceptional concept sketches were generated.	At least 2 concept sketches were generated.	One exceptional concept sketch was generated.	One concept sketch was generated.	No concept sketching was done for this activity.	
<b>Creativity</b>		Concept sketches show creativity in design and clear effort to create a toy for the target age group.	Concept sketches show creativity in design and effort to create a toy for the target age group.	Concept sketches show some creativity and effort to create a toy for the target age group.	Concept sketches show little creativity and effort to create a toy for the target age group.	Designs show no creativity.	
<b>Technical Sketching Quality</b>		Shows excellent line quality. Lines are straight, follow the orthographic grid paper and are of the correct line weight. Best front view chosen. All object, center, and hidden lines included.	Shows good line quality. Lines are fairly straight, follow the orthographic grid paper and of the correct line weight. Best front view chosen. Most object, center, and hidden lines included.	Shows fair line quality. Lines are fairly straight, stray from the orthographic grid paper and vary in thickness. Front view chosen is fair. Most object, center, and hidden lines included.	Shows fair line quality. Lines are not straight, stray from the orthographic grid paper and vary in thickness. Front view chosen is fair. Most object, center, and hidden lines included.	Lines are feathered; straight lines appear as curves. Lines converge. Wrong front view chosen .Some object, center, and hidden lines included.	
<b>Technical Sketching Annotation</b>		Sketches are well annotated with dimensions, drafter's notes, and general notes. Sketches show clear consideration for the modeling and manufacturing process.	Sketches are annotated with dimensions, drafter's notes, and general notes. Sketches show consideration for the modeling and manufacturing process.	Sketches are somewhat annotated with dimensions, drafter's notes, and general notes. Sketches show some consideration for the modeling and manufacturing process.	Sketches are poorly annotated and show little consideration for the modeling and manufacturing process.	Sketches include little to no annotation or consideration for the modeling and manufacturing process.	

Elements	Weight	5 Points	4 Points	3 Points	2 Points	1-0 Points	Total
<b>Part Model Generation</b>		All part and drawing files are accurately created and presented using the Inventor software.	Majority of part and drawing files are accurately created and presented using the Inventor software.	Some of the part and drawing files are accurately created and presented using the Inventor software.	Part and drawing files are not accurately created or presented using the Inventor software.	Part and drawing files are poorly created and presented.	
<b>Assembly and Exploded View Models</b>		Assembly and presentation files are accurately created and presented using the Inventor software.	Assembly and presentation files are accurately created and presented using the Inventor software.	Assembly and presentation files are created, but poorly presented using the Inventor software.	Assembly and presentation files are inaccurately created and poorly presented using the Inventor software.	Very poor or no assembly and presentation files are created using the Inventor software.	
<b>Dimensions and Annotation</b>	<b>X2</b>	Dimensions and annotates properly and clearly. BOM drawing accurately generated.	Supplies most dimensions and annotations. Locates most of them properly. BOM drawing accurately generated.	Supplies some dimensions and annotations. Locates some of them properly. BOM drawing generated.	Omits many dimensions or annotations. Some mislabeling. BOM drawing inaccurately generated.	Dimensions or annotations have not been added, BOM drawing not generated.	
<b>View Selection</b>		Locates all appropriate views properly and clearly. Uses appropriate number of views.	Locates most appropriate views properly and clearly. Number of views fair.	Does not locate all appropriate views clearly or properly	Omits views needed for clarity. Includes inappropriate views.	Incomplete drawing submitted.	
<b>Section Views</b>		Section views, including annotation, were accurately generated and placed on multi-view drawings for all appropriate parts.	Section views, including annotation, were generated for all appropriate parts.	At least one section view, including annotation, was generated for appropriate parts.	At least one section view was generated for appropriate parts.	One or no section view was generated, possibly for an unnecessary part.	
<b>Detail Views</b>		Detail views, including annotation, were accurately generated and placed on multi-view drawings for all appropriate parts.	Detail views, including annotation, were generated for all appropriate parts.	At least one detail view, including annotation, was generated for appropriate parts.	At least one detail view was generated for appropriate parts.	One or no detail view was generated, possibly for an unnecessary part.	

Elements	Weight	5 Points	4 Points	3 Points	2 Points	1-0 Points	Total
<b>Testing Data Collection</b>		Time trial data is collected accurately to include at least five timed attempts at 3 different weights.	Time trial data is collected to include at least five timed attempts at 3 different weights.	Time trial data is collected to include multiple timed attempts at different weights.	Time trial data is poorly collected and does not include multiple timed attempts or different weights.	Little to no time trial data was collected.	
<b>Data Analysis</b>		Complete analysis of time trial data including analysis and graphing described in Phase 5 & 6 document, as well as predictions using slope-intercept formula.	Analysis of time trial data including analysis and graphing described in Phase 5 & 6 document.	Analysis and graphing described in Phase 5 & 6 document in mostly completed as described.	Analysis and graphing from Phase 5 & 6 document is poorly performed.	Little to no analysis and/or graphing was performed on time trial data.	
<b>Notebook Organization &amp; Formatting</b>		Notebook is neatly organized and properly formatted. Phases of the design process are clearly and neatly separated with proper documentation accurately placed in each phase.	Notebook is neatly organized and properly formatted. Phases of the design process are separated with proper documentation placed in each phase.	Notebook shows some neatness and organization. Phases of the design process are somewhat separated with proper documentation placed in each phase.	Notebook shows poor organization and little neatness. Phases of the design process are crammed together.	Notebook is poorly organized and/or incomplete.	

Presentation							
Elements	Weight	5 Points	4 Points	3 Points	2 Points	1-0 Points	Total
<b>Presentation Delivery</b>		Presenters use appropriate volume, have good eye contact and speak to the audience.	Presenters use appropriate volume, eye contact and speak mostly to the audience.	Presenters use decent volume and eye contact, and speak mostly to the audience.	Presenters use decent volume and eye contact.	Presentation is poorly delivered or not presented at all.	
<b>Presentation Content</b>		Presentation is well organized, is easy to view, and includes all appropriate content outlined in Phase 5 & 6 document.	Presentation is organized, is easy to view, and includes all appropriate content outlined in Phase 5 & 6 document.	Presentation has some organization and includes all appropriate content outlined in Phase 5 & 6 document.	Presentation is poorly organized and does not include all appropriate content outlined in Phase 5 & 6 document.	Presentation has little to no organization and is incomplete.	

Total: \_\_\_\_\_ /90