Technical Report

Project 1 features the first technical report, which includes more detail than a project memo. The technical report is a group report and should cover all phases of the engineering design process.

The technical report is worth **8 points** and is graded using the rubric table shown on the following page.

The technical report should consist of four sections, in the given order: **Introduction**, **Methods**, **Results**, and **Conclusions**.

The **Introduction** section provides a summary of the rest of the report. Be sure to include the reason for doing the project as well as your top conclusion(s). As such, the Introduction section is usually the last part of the report you should write.

The **Methods** section documents the design from the *Ask* phase through the *Plan* phase of the engineering design process. This section deals heavily with how you framed the problem and made decisions towards a solution. Common information that is part of the Methods section includes:

- Design requirements, along with any background research used to uncover and improve the requirements
- The conceptual design (i.e. the design on paper) and the decisions made to choose this particular design
- The values of the design parameters along with the equations used to choose these particular values

The **Results** section documents the design through the *Create* and *Test* phases of the design process. This section focuses on what you did to bring the design to life and understand how it really works. Common information that is part of the Results section includes:

- The build of the design (e.g. a model and/or prototype)
- Raw test results displayed in a cohesive manner (i.e. a table or a figure)
- Analysis of the test results, including whether or not the design met the requirements

The **Conclusions** section documents the learning and planning done in the *Improve* phase. Most times in Studio, your team won't actually have the opportunity to continue working on the design. This section should be a bulleted list of key findings your team has learned through the design as well as the steps you would take to continue the design process given the time.

The technical report should also start with a cover page and additional information should be added to the end in an appendix.

Names: _____   _____

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	Exceeds Expectations (100%+)	**Project 1 Target** **Meets Expectations (100%)**	**Needs Improvement (75%)**	**Inadequate (0%)**
Formatting (1 point)	The report includes all required sections and has an effective Introduction section	The report has mislabeled sections or the Introduction is inadequate	The report is missing the cover page or a required section	The report formatting guidelines were not followed
Methods (2 points)	The report accurately and completely documents the *Ask*, *Imagine*, and *Plan* phases of the design process	The design methods have 1-2 minor errors or omissions	The design methods have 3-5 minor errors or omissions or have a major error or omission	The design methods have too many errors or omissions
Results (2 points)	The report accurately and completely documents the *Create* and *Test* phases of the design process	The design results have 1-2 minor errors or omissions	The design results have 3-5 minor errors or omissions or have a major error or omission	The design results have too many errors or omissions
Conclusions (2 points)	The report includes valid and insightful conclusions from the *Improve* phase of the design process	The design conclusions do not describe the next steps of the design process	The design conclusions are superficial or do not follow from the provided results	The design conclusions are not completed or are contrary to the results
Presentation (1 point)	The report is easy to read, spelling and grammar are correct, and figure, table, and equation labels are correct	The report includes minor spelling and grammar mistakes or incorrect labeling	The report includes repeated spelling and grammar mistakes or lacks labels entirely	The report is difficult to read