

## **Identify problem**

- \* I described the exact problem clearly, including a need and a client or market.
- \* My description of the problem is not biased toward any one solution.
- \* My description of the problem includes information about the background, context, or setting for the problem.

## **Understand**

- \* I listed a set of design requirements (measurable things that a design would have to accomplish in order to be seen as a real solution).
- \* I indicated the date on which each design requirement was added to the list.
- \* I described the research that I conducted for each design requirement. For example, this might include background research or market research.
- \* I included a source for each design requirement, such as a client, user, background research, or test results.

## **Ideate**

- \* I sketched multiple potential solutions.
- \* My sketches provided sufficient detail to communicate each design. (e.g.: defining main features such as functions and materials)

## **Evaluate**

- \* I evaluated each of my possible solutions with respect to the design requirements.
- \* I described the strengths and weaknesses of each design.
- \* I used a decision tool to rate the designs.
- \* I described the solution that I decided to test, and described why I thought it was the best one to try based on the requirements.

## **Prototype and Testing**

- \* I created detailed technical drawings for my solution.
- \* Where possible, I created mathematical and computer models for the solution.
- \* I built a physical model of my solution.
- \* I showed that my design meets all of the design requirements.

## **Iteration**

- \* I made clear improvements to my project through an iterative design process.
- \* I wrote a reflection about my design process for this problem.
- \* My reflection describes the decisions I made and why I made them.
- \* My reflection describes what I would do differently if I tried to address the problem again, or advice that I would give to someone else who was trying to address the problem.

## **Progression**

- \* My portfolio includes relevant documentation of each stage of the design process.
- \* My portfolio provides enough detail to guide someone else in following my procedure.
- \* My portfolio indicates that I followed a true engineering design process driven by customer needs and requirements, and that multiple solution candidates were considered and improved throughout the process.

## **Communicate your Solution**

- \* My presentation communicates the topic in a clear way.
- \* My presentation is interesting and convincing.
- \* My presentation showcases my expertise in using the software, hardware, or materials that my group used to make our solution.