Communicate

Did you document your results? What data suggest your design is best? What science concepts explain your results? How can others use your information to create a the design again?

Identify Need and Define

Problem

What is the problem? is the client? Who is the end user? What are the constraints? What is the criteria?

Brainstorm

1st to eliminate fixation Sketch ideas and share ideas. Whiteboard work and discussion.

Benchmark

What solutions exist for this problem? What are the limits to these designs? How can your design be better? How can science inform the design?

Communicate (Report Out)





Engineering Analysis and optimization

Redesign

What was the result of the tests? Are the limitations of the design? What would you do differently if you rebuilt the prototype?

Redesign as needed



Test and Evaluate



Build model or prototype

Analysis

How can you test your design ideas? What science inquiry investigations are needed? What data will you collect? What mathematical predictions will you make? **Optimization** How will you know your solution is best?

Test

What investigations will ensure your design works? What data will be needed? **Evaluation** Is this the best design solution?

How could it be better?

Prototype

Does your solution meet the clients needs? What materials are needed? What tools are needed?