

5th Grade Engineering Final – Design Process

The engineering design process helps engineers and other problem-solvers come up with creative solutions. You are an engineer. You will choose YOUR OWN engineering problem in which you would like to create a solution. For example: You are going on vacation for a month and can't find anyone to water your plants while you're gone. You need a device that will give your plants the right amount of water – not too much and not too little. (Do NOT use this example.)

You will follow the design process to achieve your goal. Please note that you will NOT be physically creating your solution and you will NOT be designing or creating a Rube Goldberg mechanism.

Create an email to msatovich@kiheicharter.org with the subject, **Engineering Final**, and copy and paste the following directions into the body of an email and then write an answer below them using proper grammar, spelling and sentence structure.

1. Define the problem you intend to solve; be very specific.

2. Research (if necessary)

If a similar product exists, describe how it is used and how it addresses the problem. Compare and contrast ways that your product will be better.

If a similar product DOES NOT exist, explain why you would like to address your problem.

3. Brainstorm

What are ways to solve the problem? List several possible solutions.

4. List the requirements for your solution (criteria and constraints).

5. Develop a Solution

Who are the target users for your solution? Who will benefit from your solution?

6. Choose one idea

Create a drawing of your solution to include detail of parts, mechanisms and how it works. Attach the picture to the email. If you cannot attach a picture, please let me know in your email and show me your design in class.

7. Evaluate Solution - Redesign

Where do you think you will run into problems with your solution such as availability of materials, cost of materials, ease of production, etc.?

8. Present Solution

How would you best communicate your design problem and solution to the public (be specific)?