

Engineering Design Process Folio

Name		Group Members	
Date Started		Due Date	

Step 1: Defining a Problem

1. According to the Request for Proposal (RFP), what is the problem and/or the need that justifies the project?

2. Who is the target population

3. Who will benefit from the solution?

4. How will the result of this solution impact peoples' lives, the educational community and/or the world?

5. What do you need to learn before you begin generating ideas to solve the problem?

6. What questions do you have about the Request for proposal requirements of the challenge?

7. What do they do with the silt they pull out? This is called Beneficial Use.

8. Could it be used on the coastline near your home? Explain.

9. If so, how often would the silt need to be placed near your home to allow you to live there as long as you desire?

Step 2: Brainstorming

List your brainstorming ideas here (remember there is no right or wrong answer)

a) .

b) .

c) .

d) .



e) .

f) .

g) .

h) .

In the space provided, sketch four possible solutions to the given problem. Remember to be creative!



Step 3: Researching and Generating Ideas

On the table below, think about possible questions you need to answer to gather more information prior to committing to one of your ideas. What resources are available to assist you in answering your questions?

Resource List:

Possible Questions (generate a list of specific questions that need to be answered)
1. 2. 3. 4. 5. 6.

Possible Question starters:

1. Has this problem been solved previously?
2. Is there a similar product where components could apply to this solution?
3. What types of materials should the solution be made from? Is there information to help me choose the material for the product?
4. What data resources might be helpful when designing my solution?

Materials List



1. **2.** **3.** **4.** **5.** **6.** **7.** **8.** **9.**	**10.** **11.** **12** **13.** **14.** **15.**

Step 5: Exploring possibilities

Review your ideas from Brainstorming and Researching and Generating Ideas. Explore some of your ideas with more detail. Record your exploration in the space below. Possible explorations can reflect testing experiments, simulations, peer review, etc. Be sure to include any data collected.

Step 6: Selecting an Approach

Considering the original criteria and constraints, choose the design you think will work best. Then create a detailed drawing of your selected solution in the space below. Label all parts and add color. Include a brief explanation of why you selected the design. You can use Appleworks, Paint, or Word to create the drawing.



Step 7: Developing a Design Proposal

Now that you know your best solution, you need to develop a plan to see the final solution through to the end. Your design proposal must include the following components:

1. Cover Page (name of solution, group members, image representing your idea)
2. Work Plan (includes timeline for the rest of the project, key events, such as testing and refinement of solutions, and materials list)
3. Working Drawings (top, front and side scaled drawings of your proposed solution)

Your design proposal may be attached to this folio or inserted into the space below.

Step 8: Making a model or prototype

In the space below, document (pictures) your construction of the model/prototype. Be sure to include a picture of the final model/prototype.

Step 9: Testing and Evaluating the Design, using specifications

How will you test your prototype/model?

What data will you collect during testing?



In the space below, document the type of test you conducted and the results.

Description of Test Performed	Test Results

Step 10: Refining the Design

What changes were made to the prototype/model and what data from testing and evaluating drove the refinement?

Refinement/Modification Made	Data that drove the Refinement/Modification

Step 11: Creating or Making It

Explain in the space below, what further work would need to be done to prepare the product for the marketplace/actual implementation?

Step 12: Communicating processes and results

In addition to your presentation format outlined in the RFP, answer the following questions about your solution.

1. What were the best things about your design?



2. What were the weaknesses of your design?

