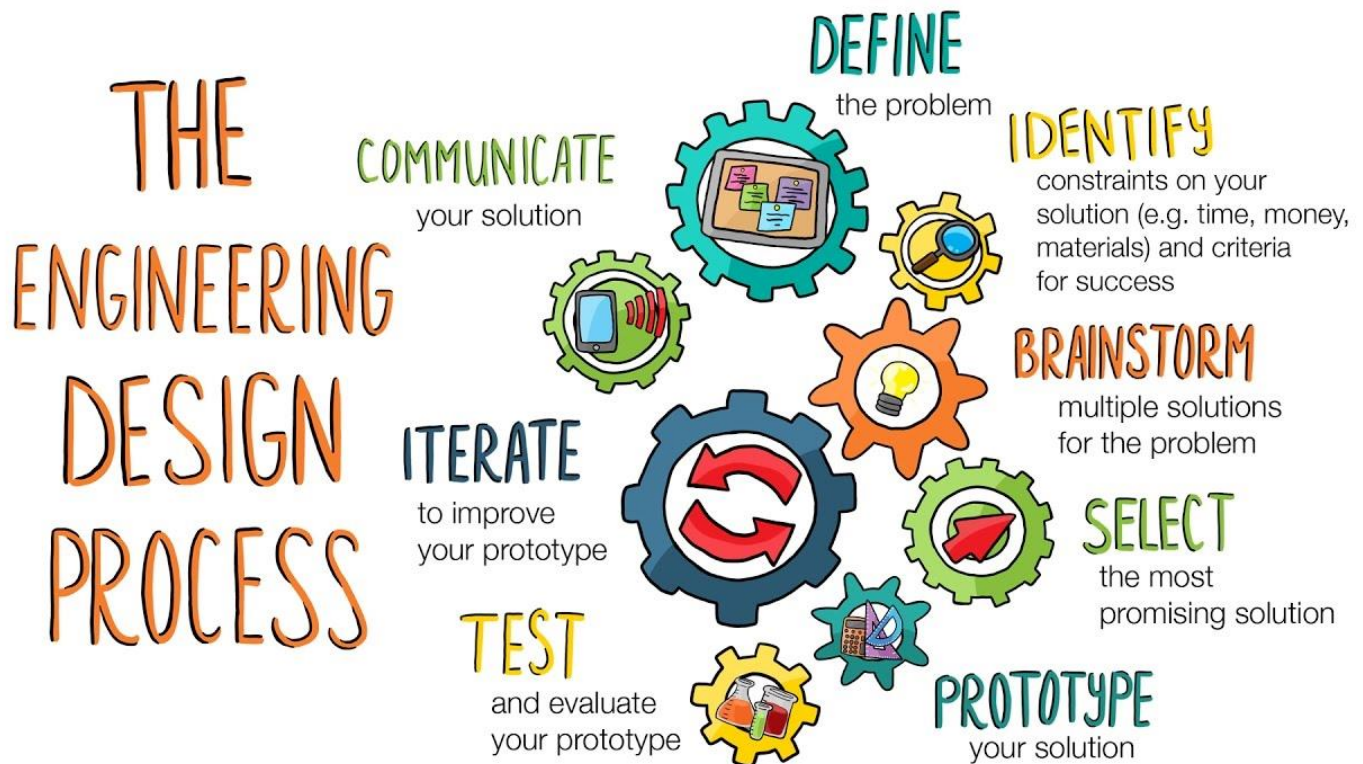


Engineering Guide

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If you get stuck or need some help you can email Ms. Baldwin at baldwia4@gcsnc.com.



*******This project needs to be approved by Ms. Baldwin. Please email her the problem, solution and materials being used. Be sure to include the child's name and teacher's name in the email. If a project is not preapproved, it will NOT be judged but will still be graded. *******

Judging/Grading

Engineering Plan ___/13

Display Board or Power Point ___/13

1. On Time
2. Title
3. Problem
4. Rational
5. Solution
6. Materials
7. Procedures
8. Data (Table)
9. Photos without faces
10. Results
11. Conclusion
12. Analysis
13. Name and homeroom teacher's name on the back

Judges also look for:

- *Creative Title
- *Neat
- *Correct spelling and grammar
- *Creative project or a project that helps solve a real world problem
- *Student can explain their project

Getting Started with Engineering

Where do I start?

A great place to start is to think about some problems you would like to solve.

For example: Your backyard has lots of leaves and you want an easier way to pick them up. Your dog likes to play fetch but is not good at bringing the ball back to you.

1. **Make a list of problems you would like to solve.**

I have made a list, now what?

- Look at that list and cross out anything that is not allowed.
- Is there anything your parents would not approve or allow you to do?
- What about time, money and materials? Will you have what you need to solve the problem?
- You are not allowed to do projects with Hazardous materials or dangerous tools.
- Building materials should be limited to kid friendly items. (Examples: Legos, tinker toys, recycled materials and tape....)
- If you are unsure, email Ms. Baldwin baldwia4@gcsnc.com.

2. **Choose a problem or challenge and brainstorm ways to solve the problem.**

Problem: _____

Solutions:

3. Choose the solution you like best and sketch it out.

*******This project needs to be approved by Ms. Baldwin. Please email her the problem, solution and materials being used. Be sure to include the child's name and teacher's name in the email. If a project is not preapproved, it will NOT be judged but will still be graded. *******

Engineering Plan

1. Problem to Solve: I want to _____

2. Research/Prior Knowledge : Things I already know about this problem.

3. Rationale: This project is important to science and engineering because: _____

4. Solution: I plan on making: _____

5. Materials: (Be specific!)

_____	_____
_____	_____
_____	_____
_____	_____

6. Procedures: (Tell me step by step how you made your solution.)

1. _____
2. _____
3. _____
4. _____

5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

7. Risk & Safety (Identify any potential safety issues.): _____

8. Testing It Out

a. Trial 1. Observation notes from Trial 1. _____

This is what I had to adjust or fix after Trial 1. . _____

b. Trial 2. Observation notes from Trial 2. _____

This is what I had to adjust or fix after Trial 2. _____

c. Trial 3. Observation notes from Trial 3. _____

This is what I had to adjust or fix after Trial 3. . _____

d. If needed, trial 4. Observation notes from Trial 4. _____

9. Results: Based on my Trials, I noticed that _____

10. Conclusion: _____

11. Analysis: If I were to do this project again, I would _____

12. Bibliography: These people helped me with my project _____

I also got information from _____

13.

Table Title: _____

Tests	Worked OR Not?	Adjustments made?
Test 1		
Test 2		
Test 3		
Optional 4		

Each project requires a display board *or* PowerPoint to show the engineering process. Your board/Power Point should be interesting, attractive, and neatly done.

Display Board Expectations

- 1. Your name should NOT be visible on the board. It should be on the back of the board.**
- 2. Photos cannot contain faces.**
- 3. Make your board neat and clear.**
- 4. Each step should have a heading.**
- 5. Boards with colorful backing do better than boards without.**
- 6. Handwritten boards are acceptable. If they turn out to be a winner, we will make improvements before the district competition.**
- 7. The board needs to be freestanding. A 3-sided board works best.**

(We have a limited supply if you need help purchasing a board.)

Power Point Expectations

- 1. The first page of the Power Point should have your title and a picture of your project.**
- 2. Each part of the project should be on a different slide.**
- 3. The last page should have your name and your homeroom teacher's name.**