

<b>Problem:</b>	<b>Solution:</b>	<b>RATE IT</b>
	➔	☹️ 😐 😊

<b>Problem:</b>	<b>Solution:</b>	<b>RATE IT</b>
	➔	☹️ 😐 😊

<b>Problem:</b>	<b>Solution:</b>	<b>RATE IT</b>
	➔	☹️ 😐 😊

<b>Problem:</b>	<b>Solution:</b>	<b>RATE IT</b>
	➔	☹️ 😐 😊

<b>Problem:</b>	<b>Solution:</b>	<b>RATE IT</b>
	➔	☹️ 😐 😊

Group Names: \_\_\_\_\_ Date: \_\_\_\_\_

Project: \_\_\_\_\_



# Engineering Logbook

When engineers solve a problem, their first solution is rarely their best. Instead, they try different ideas, learn from mistakes, and try again. The series of steps engineers use to arrive at a solution is called the *Design Process*.

**ITERATION:** a process in which a series of operations is repeated a number of times to improve the final design. As you work through a challenge, use the questions below to tie your work to specific steps of the *Design Process*.

### Brainstorming

- At this stage, all ideas are welcome, and criticism is not allowed. Be creative and think outside the box!
- What specific goal(s) are you trying to achieve?
- What are some ways you can start tackling today's challenge?

### Select Design

- Time to get realistic. Talk through the brainstormed ideas.
- What's really possible given your time, tools, and materials?
- It's not cheating to look at other kids' projects. What can you learn by looking at them?

### Building prototype, testing, evaluating, and redesigning- Iteration

- Does your design meet the criteria for success?
- What is the hardest problem to solve as you build your project?
- Why do you have to do something a few times before it works the way you want?

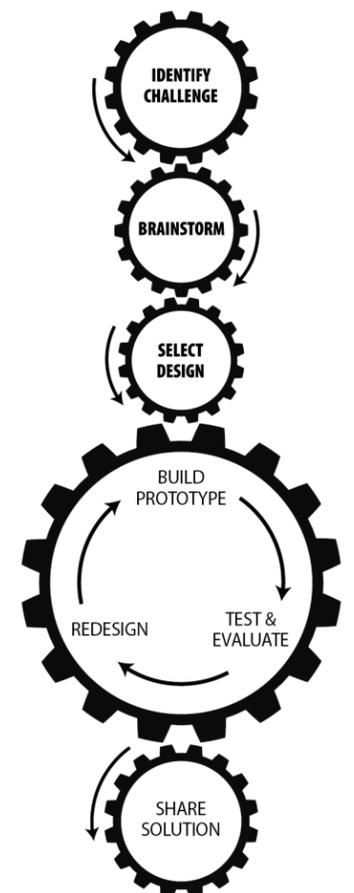
### Sharing solutions

- What do you think is the best feature of your design? Why?
- What are some things everyone's designs have in common?
- What would you do differently if you had more time?
- What were the different steps you had to do to get your project to work the way you wanted?

### Guides for: Parents, Educators, and Engineers

Adapted from: <http://pbskids.org/designsquad/parentseducators/guides/index.html>

### Engineering Design Process



## Challenge / Question:

## Brainstorming:



## Best Ideas:

Filter/criteria to use for selecting final design:

- Addresses the challenge/question or task
- Achievable with materials we have
- Achievable with the time we have
- Our final design is supported by the team



## Labeled Sketch / Drawing:

