

# Engineering Design Process

## Step 1: Identify the Problem

- Identify what needs to be accomplished
- Define constraints, criteria, and variables

## Step 2: Research the Problem

- Examine the current state of the issue and current solutions
- Explore other options via Internet, library or interviews

## Step 3: Develop Possible Solutions

- Brainstorm various solutions, using math and science concepts
- Explore the variables of the problem
- Refine these possible solutions

## Step 4: Select a Solution

- Choose a solution that best meets the constraints (absolute limitations that cannot be violated) and achieves the most important criteria (preferences that might or might not be achievable of the problem)
- Draw or Sketch the solution

## Step 5: Construct a Prototype

- Build the chosen solution

## Step 6: Test/Evaluate Solution

- Try out the solution, Identify missing design requirements
- Explore the behavior and capabilities of the materials
- Collect Data, Compare design results to problem statement

## Step 7: Share the Solution

- Discuss the chosen solution with others
- Explain how the solution was determined
- Gather feedback from others

## Step 8: Redesign the Solution

- Make necessary changes to the solution based on the data collected, feedback from others, additional research and any new understandings about constraints and criteria with relation to the problem statement

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