

Engineering Design Process

Identify the Problem What is the challenge? What needs to be improved? What is the need?

Do Research What questions do I have? What observations can I make? What solutions to the problem exist? How can they be improved? What materials are available? What is my solution limited by?

Develop Possible Solutions What are different ways to solve the problem? What materials are available? How can I use the available materials? What is my solution limited by?

Choose One Solution What are the strengths and weaknesses of each solution? Which solution is most useful? Which solution is the least complicated? How will I develop my solution?

Design and Construct a Prototype What materials do I need? How do I build a functional model?
What are the specific characteristics, or specifications, of my model?

Test the Prototype Did it work? Did it accomplish what I wanted it to do? Did anything else happen during my test that I didn't expect?

Communicate Results How should I best communicate my results? Should I make a drawing and show people my prototype? How should I ask for others' feedback on my design?

Evaluate and Redesign Did my design work the best that it could? How could I make it better? Is it practical? Are the materials cheap and easy to find? Does my solution create new problems, or the need for another new product? Will others be able to use it equally as well?