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Foundations of Technology
Unit 2 Learning Cycle 1: The Engineering Design Process
File 2.1.1: The Five-Step Engineering Design Process

As you progress through this unit, you will be introduced to two versions of the engineering design process. The concepts are the same in both; however, one is more detailed than the other. The first version you will look at is the five-step process, which is explained below.

1. You begin by defining the problem. What does it mean to define a problem? It involves identifying the problem you need to solve.
2. Once you have that information, you can start thinking about possible solutions for the problem. This is the brainstorming phase.
3. After you have thought of all possible solutions for the problem, you can begin exploring some of those solutions in detail to see if they are viable, given the guidelines and resources you have available.
4. Once you find the solution you want to use, you generate that solution, or create a design, model, or prototype to use.
5. The final step is to test and evaluate that solution. Did it work? Did it solve the problem? Do you have enough resources to use that solution? If it didn't/won't work, you can start over again. You are now armed with the information you need to either improve or change your solution to make it work!

The Five-Step Engineering Design Process



1. Define the Problem

2. Brainstorm Ideas

3. Explore Solutions

4. Generate a Solution

5. Test and Evaluation