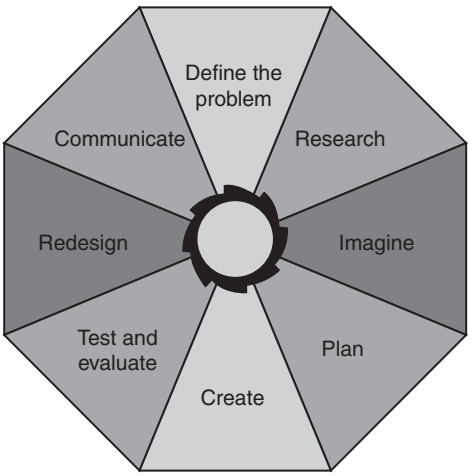
Design Tool 7.2: The Engineering Design Process for Student Teams

To student teams: This image of the engineering design process can show you a way engineers think through how to solve a problem and create a new technology. You will be using the same process they use. You do NOT have to follow these steps in this particular order. You might skip one step and come back to it. You might circle back to one or two steps several times.

You do not need to memorize this process and the definitions. Just be able to recognize what stage you are in as you work through your engineering challenge.



Engineering Design Process

Define the problem. This is the problem or engineering challenge that your team members will work on together.

Research. You will gather information about the problem that may be useful in helping you understand it or solve it.

Imagine. You will use what you learn in your research to brainstorm many possible solutions for this problem. Be creative!

Plan. You will choose a solution and plan how you will design and construct your prototype.

Create. Your team members will design the prototype you chose. Everyone should have a part in designing this device or system.

Test and evaluate. Your team will test your prototype to see if it successfully meets the criteria and accomplishes what it should. You will evaluate your prototype based on how well it meets the criteria and solves the problem.

Redesign. You will decide how to improve your prototype and redesign the device. You do not have to start at any particular place in the design process. You might go back to "Plan" or to "Create."

Communicate. Your team members will share with one another and with other teams during the lesson. When you complete your successful prototype, decide how to communicate this to people beyond your classroom.