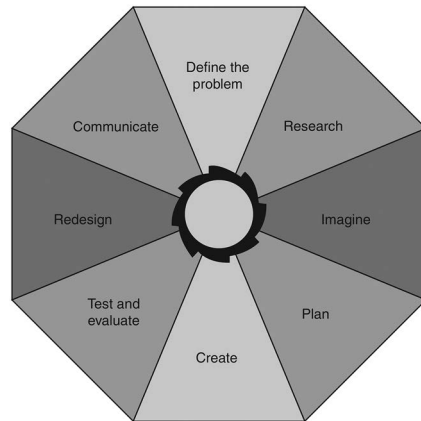




Design Tool 8.3: EDP Description for Teachers

To teachers: This describes the EDP in a nutshell. Steps do not have to occur in any particular order. A student team might skip one step and come back to it; or they might circle back to a step several times.



Define the Problem: This is the specific challenge that students will address. Introduce criteria and constraints at this time. Team members may help you decide on some.

Research: Team members gather needed information about the problem in a variety of different ways. Experiments and technology are often useful in their STEM research.

Imagine: Team members brainstorm informed ideas on how to solve the problem and come up with a number of possible solutions. Encourage creative and out-of-the-box ideas.

Plan: Team members choose the idea they think will work best and decide how to design their prototype. Teams might prepare sketches of their prototypes as a part of the planning step. Learning how to reach agreement may help with this stage.

Create: Team members design the prototype they selected. All team members play a role in the design process. At this point teams often discover that their design isn't workable, so they do more planning and redesign the device.

Test and Evaluate: Teams test their prototypes to see if they work according to the criteria established. They evaluate the prototypes based on how well they meet the criteria and the degree to which they solve the problem. Rubrics and checklists are useful for this stage.

Redesign: Teams decide how to improve the prototype and they redesign the device. This may not be the first time teams have redesigned. Redesign is an ongoing part of the EDP. In fact, an entire STEM project might actually focus on improving (redesigning) an existing device.

Communicate: Teams share specifics about the problem, their design solution, and the results with a variety of audiences, using a variety of communication approaches and methods.