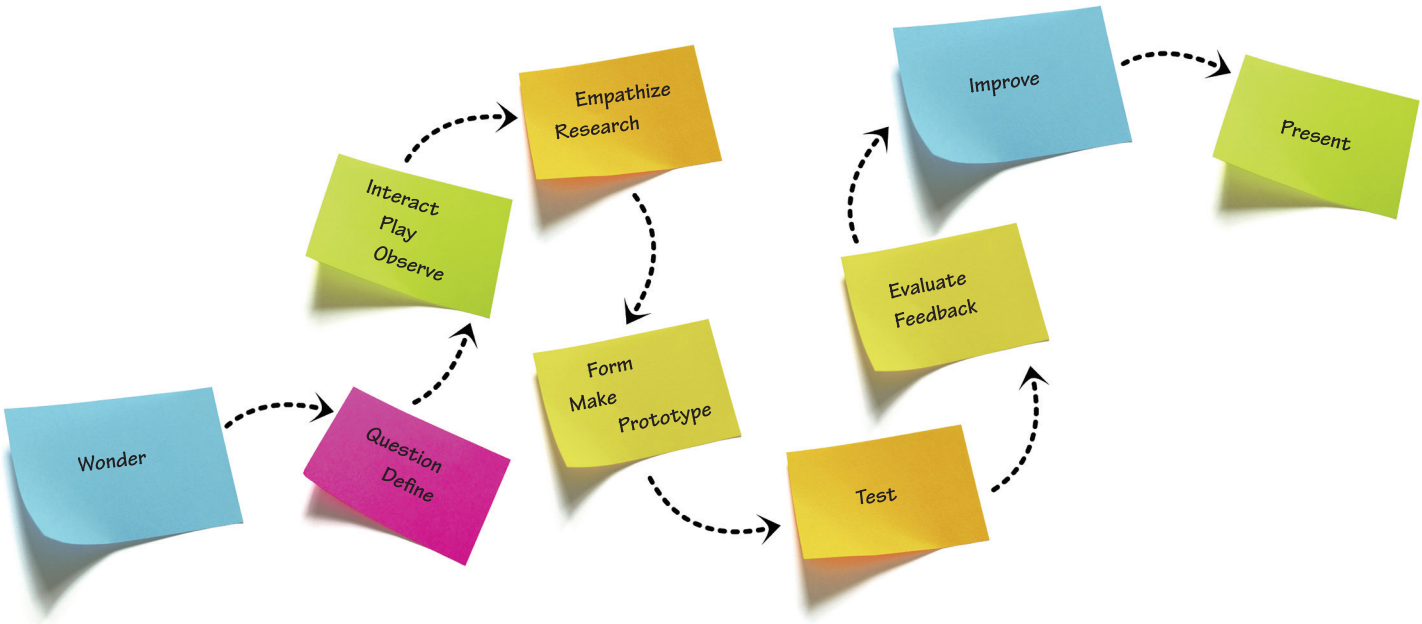
DESIGN THINKING

How to Begin a Design Project



1. Start with a Design Brief and an Essential Design Question
   Design challenges should begin with a design brief that outlines the scope of the problem and the general constraints of time, materials, size, or function to be considered. These limitations provide a framework by which to benchmark progress and guide thinking. The purpose of the design brief is to provide structure but not a script. The brief does not advise or suggest a particular course of action. Begin the design brief with an essential design question.

- What kind of sail best moves a desert wind racer?
- What design and engineering elements can be incorporated into a one-meter structure so that the structure withstands three different types of earthquakes?
- How may solar panels improve life and productivity in Haiti?

2. Provide a working template for students to capture sketches, goals, strategies, and ideas.
   This template becomes part of the project portfolio.

3. Create Design Teams
   Design projects require small, focused, and broad-minded interdisciplinary thinking. Teams may be randomly assigned or organized to consider the potential strengths and vulnerabilities of each team member. Some projects are best completed on an individual level.

4. Set Ground Rules
   Since the design process requires such a significant level of trust and collaboration, students need mindful ways for establishing respectful listening, ground rules for idea generation, and fair evaluation of ideas. Establishment of guidelines for sharing ideas, material management, and individual responsibility helps invigorate the trust and momentum of the group.

5. Incorporate Research and Content
   The design process requires the ability to create new ideas from fragmented parts, and to empathize with the needs of people both similar and different from us. These skills require real research into the opinions, attitudes, and realities surrounding the design challenge. Underestimating the work of existing ideas and the accumulated work in a given field of study can result in flawed designs.

6. Plan for the Mess
   Students need to have the greatest access to different materials during the design process, meaning that the materials need to be efficiently organized. Whether it is with project bins or trays, clear expectations for the organization will help groups control the mess and materials.

7. Make a Capstone Presentation