

# DARTMOUTH DESIGN

ENGINEERING MODEL

Define & restate the problem

Develop constraints, criteria, and specifications

Brainstorm ideas

Research & Analyze alternatives

Identify, research, and design potential solutions

Construct & Evaluate a prototype

Reiterate if necessary; simplify if possible

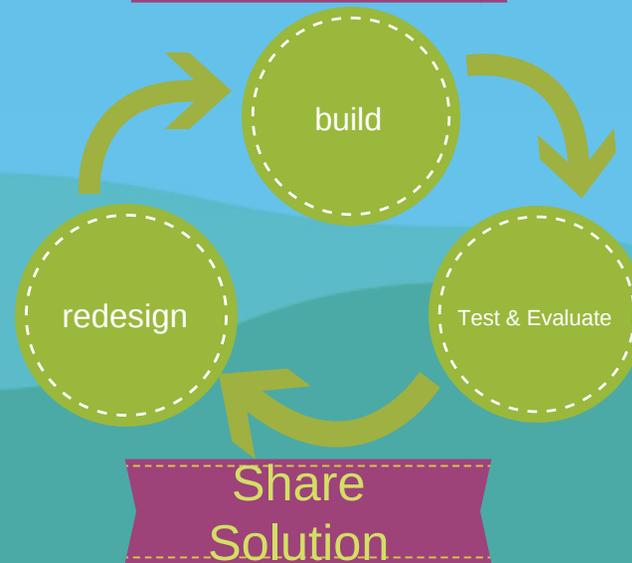
# NASA DESIGN

ENGINEERING MODEL

Identify the problem

Brainstorm

Design



# IDEO DESIGN

ENGINEERING MODEL

Observation

Brainstorming

Rapid Prototyping

Refine

Implementation

## A Detailed Approach

*The Dartmouth Engineering Design Method focuses on teamwork and the development of constraints within the design process. Simplicity is a goal within this approach.*

## Redesign

*The build, test and evaluate, and redesign steps of the NASA Design Model give space for students to pause and engage more thoroughly in the redesign portion of the process.*

## Empathy

*As IDEO is a design company, they focus on empathy throughout the design process. They interview and listen to the client, use unfocus groups, listen without judgment, and engage the client in the narrowing and choosing of solutions.*

# SYNTHESIS OF THREE LEADING MODELS OF DESIGN

1. BEGIN WITH EMPATHY
2. DEFINE THE PROBLEM
3. DEVELOP CONSTRAINTS
4. BRAINSTORM
5. DESIGN A SOLUTION
6. BUILD, TEST, AND REDESIGN
7. SIMPLIFY, IF POSSIBLE, AND SHARE THE SOLUTION

