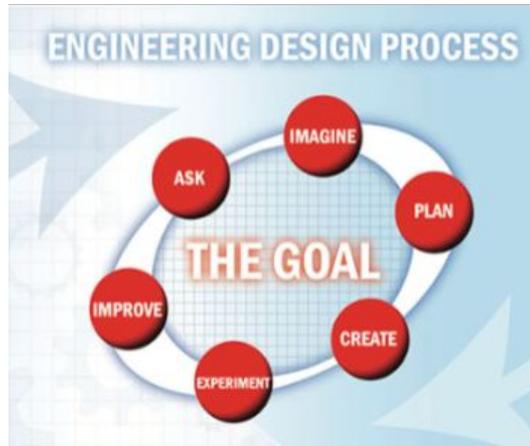


## Why Is Design Thinking Important?

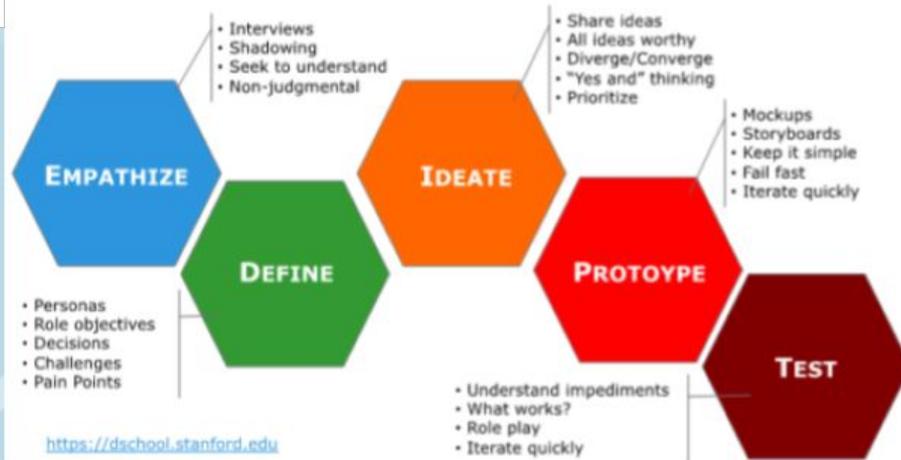
- It reduces the risk associated with launching new ideas.
- It helps organizations learn faster.
- It generates solutions that are innovative, not just incremental.

### 3 Essential Aspects of Design Thinking

1. Empathy (human-centered)
2. Ideation (generating a lot of ideas)
3. Experimentation



## Stanford d.school Design Thinking Process





*Inspire new thinking by discovering what people really need*



*Push past obvious solutions to get to breakthrough ideas*



*Build rough prototypes to learn how to make ideas better*



*Craft a human story to inspire others toward action*

### EMPATHISE

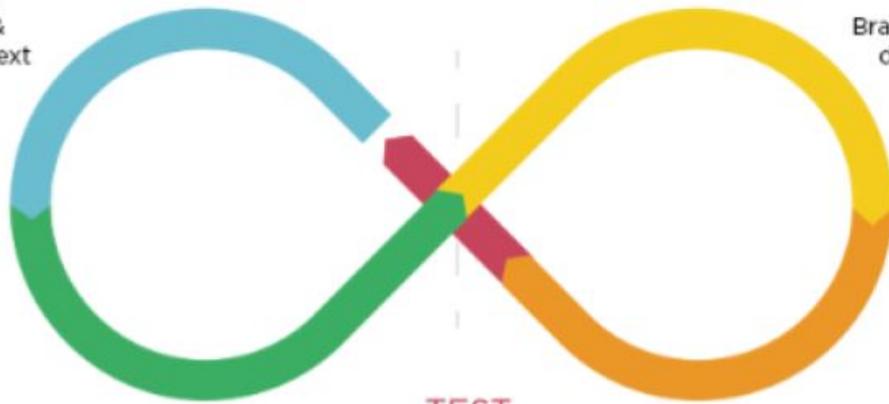
**What is the problem?**  
Define the challenge & explore the human context

CONTEXT

### IDEATE

**How do we solve it?**  
Brainstorm ideas good & bad, don't stop at the obvious

FORM



### DEFINE

**Why Is It Important?**  
Research, observe, understand & create a point of view

### TEST

**Does It work?**  
Implement the product, show & don't tell, start to refine the product

### PROTOTYPE

**How do we create it?**  
Start creating, experiment, fail cheap & fast

# Philip Simmons STEAM Wheel

## WHAT'S THE PROBLEM?

What is the challenge?  
What are the constraints?  
How can you solve it?

This is a design wheel that I use with students. I developed this based on the Stanford Design process. We have reflective exit tickets or discussions when we think we are ready to move to the next step. Sometimes it is document children type in, others times it is a reference point for teams to ensure they are keeping on the design path.

## EVALUATE

How could your idea be improved?  
What would you do different next time?  
How do you plan to make your learning public?

## TRY IT OUT

Did your solution work?  
Test your ideas.

## EXPLORE

What have others done to solve the challenge?  
What materials do you need?

## DESIGN

Brainstorm a lot of ideas!  
Pick one and make a plan, blueprint, drawing, or model.

## CREATE

Make a TO DO list and build/create your solution.