

# Predict the Future By Designing It

## An Introduction to Design Thinking

Stanford d.school, April 18-19, 2017

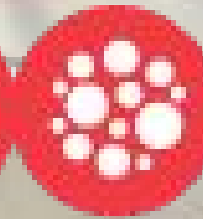
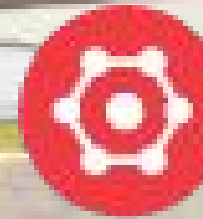


university  
innovation  
fellows



HASSO PLATTNER  
Institute of Design at Stanford 1

d.




HASSO PLATTNER

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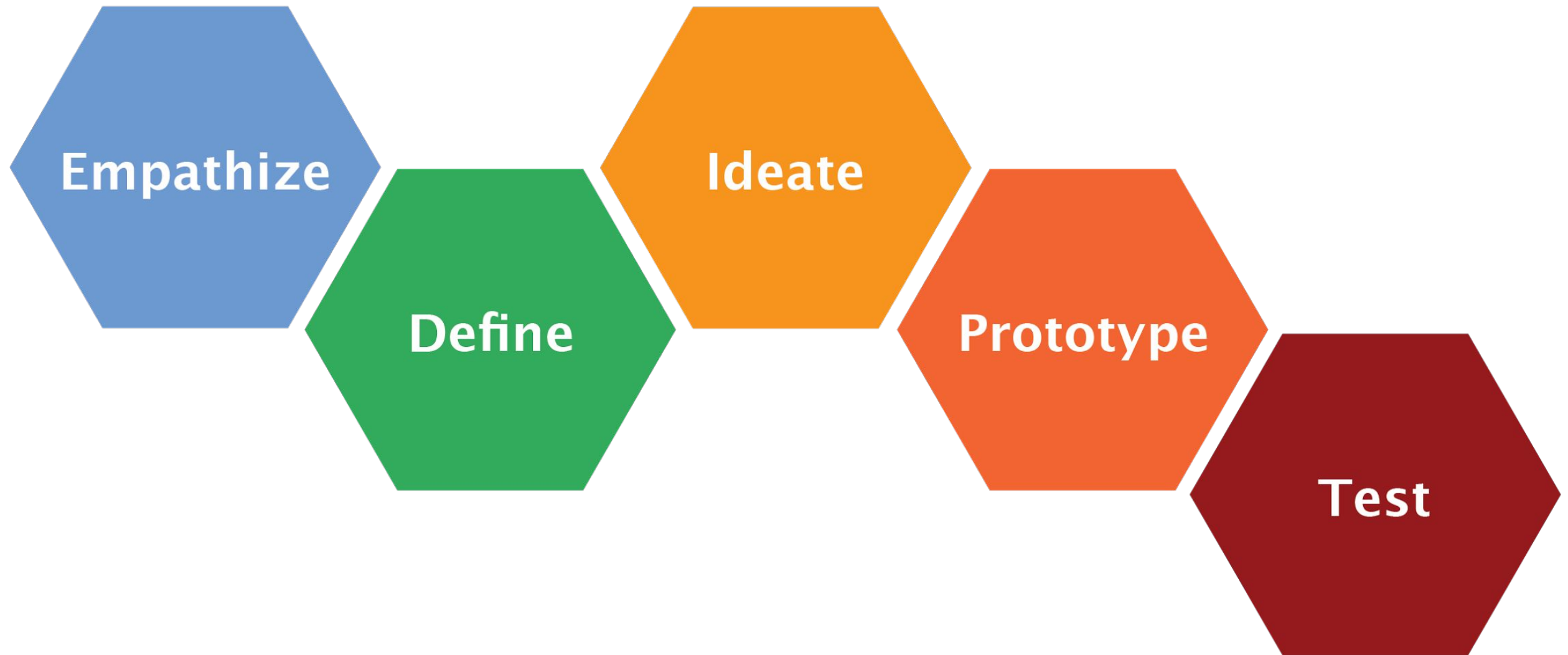


[dschool.stanford.edu](https://dschool.stanford.edu)





**“THE BEST WAY  
TO PREDICT  
THE FUTURE  
IS TO  
DESIGN IT”  
—BUCKMINSTER  
FULLER**



DO IT NOW

---

REFLECT

---

DO IT BETTER





# Redesign the Nametag





# Redesign the introduction experience



# 1// Interview your partner (4 min each)



Image by r8r on flickr (CC BY-NC 2.0)



## 2// Generate ideas

"The best way to have a good idea  
is to have **lots** of ideas."

Dr. Linus Pauling  
Chemistry and Peace  
Nobel Prize winner

**Individually, 5 min**

## **3// Share and get feedback (3 min each)**





# Roadmap







# Teams



# Project Aristotle (Google)

## Variables NOT significantly connected w/ team effectiveness

- Colocation of teammates (sitting together in the same office)
- Consensus-driven decision making
- Extroversion of team members
- Individual performance of team members
- Workload size
- Seniority
- Team size
- Tenure

# Project Aristotle (Google)

<https://rework.withgoogle.com/>





# How Might We Align Talent Development in Universities with the Needs of the Tech Industry?



# How Might We Align Talent Development in Universities with the Needs of the Tech Industry?

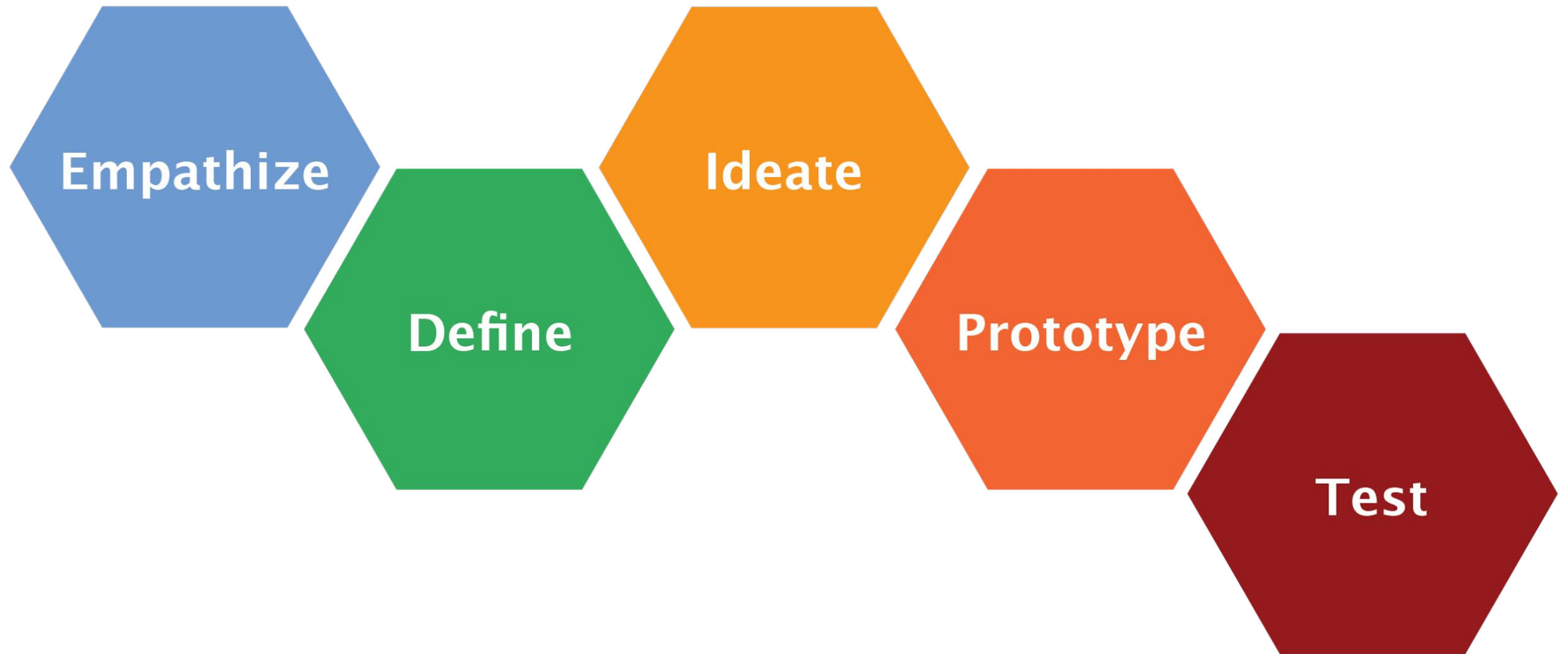
**96%** chief academic officers said they were doing a good job

*(Inside Higher Ed survey, 2014)*

**11%** of business leaders strongly agreed that graduates have necessary skills and competencies to succeed in the workplace

*(Gallup, 2014)*



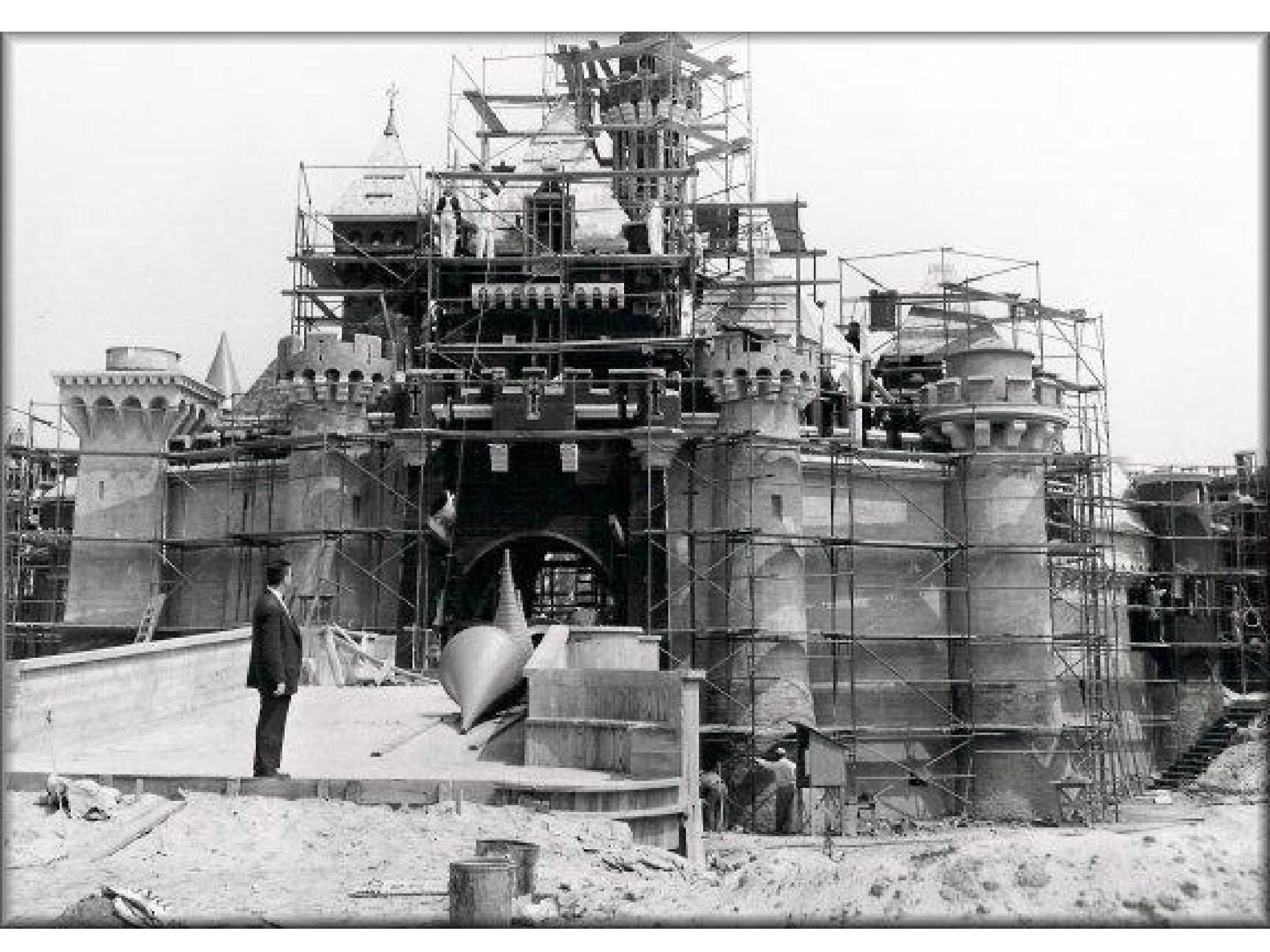








**Pair  
up**



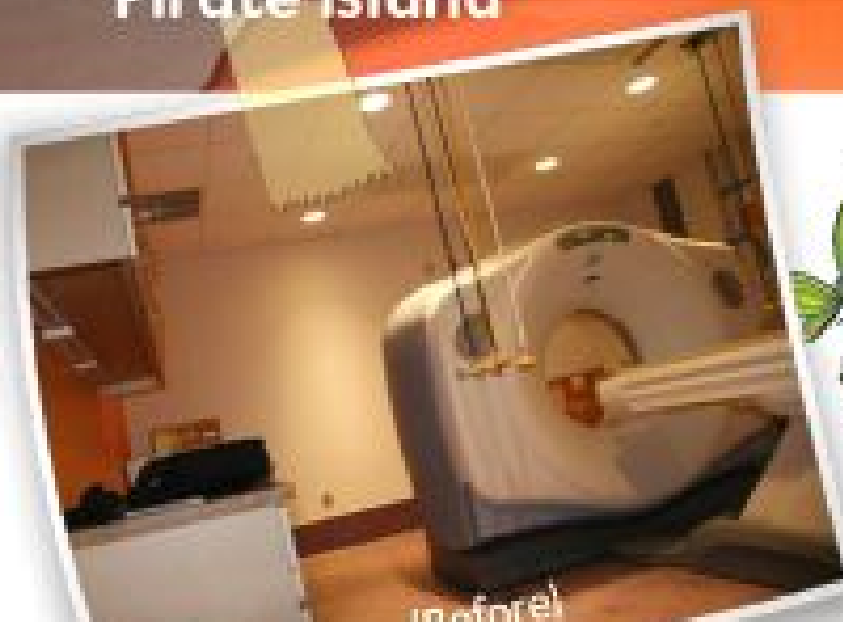
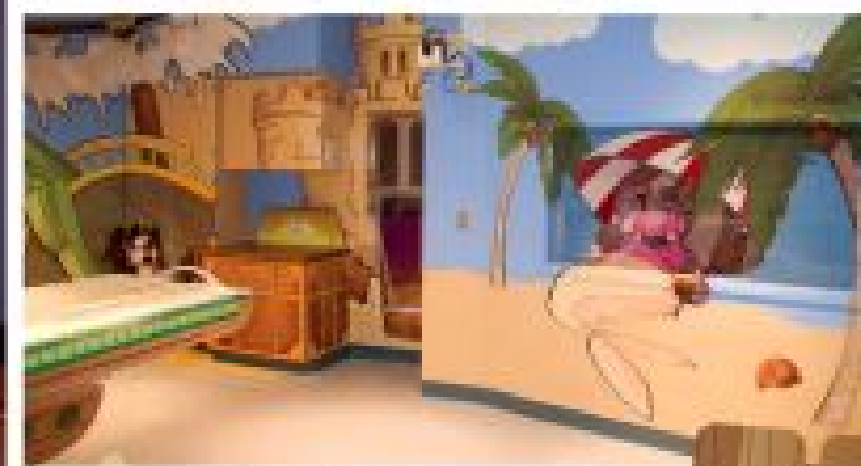
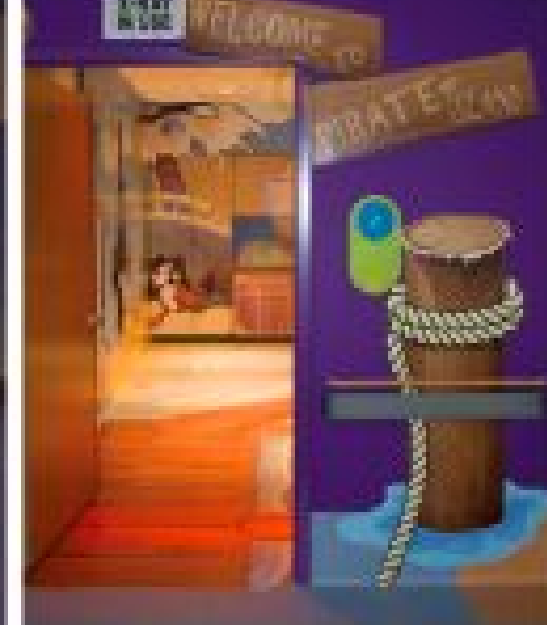








Pirate Island



“Can we come back tomorrow?”  
Actual patient, age 6





**Interview demo**



# ENGAGE

Ask questions about your partner's experience relevant to the challenge

# SEEK STORIES

Ask about a specific experience that was memorable

# NOTICE

Interesting answers, reactions, and body language

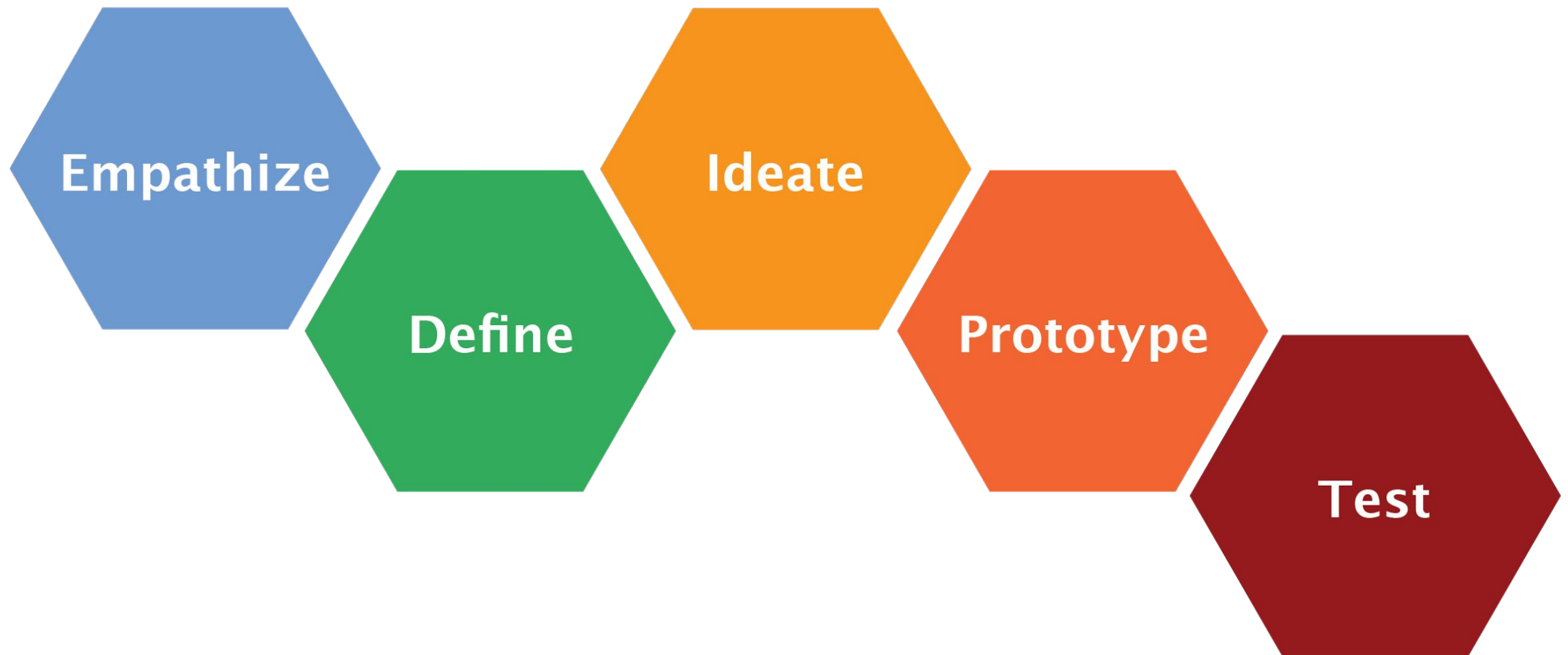
# FOLLOW-UP

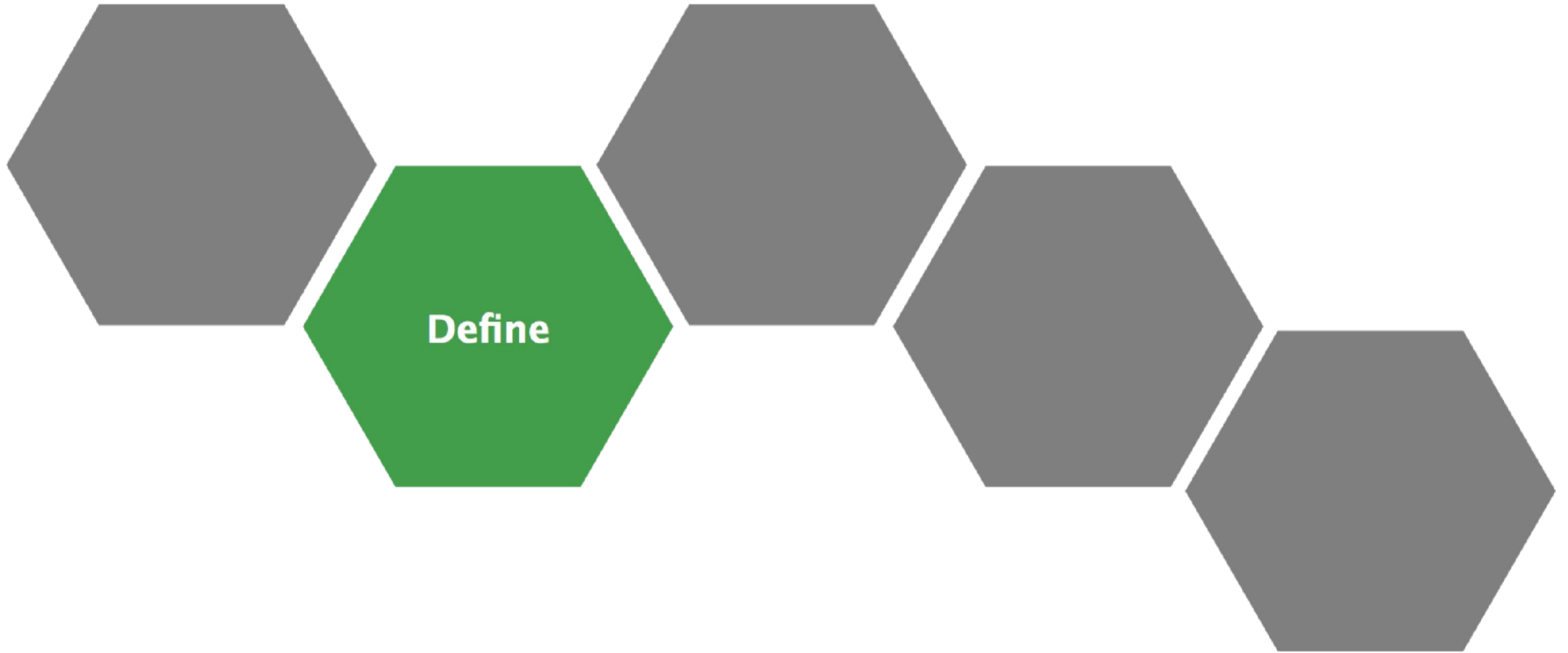
Ask why about the things you notice



**Now it's your turn!  
(two rounds)**







**WARM-UP: draw a VASE**







# **REALIZE NEW INSIGHTS**

**REFRAME THE PROBLEM.  
UNCOVER OPPORTUNITIES.**

OBSERVATION

INFER

INSIGHT/HUNCH

NOTICE  
SOMETHING

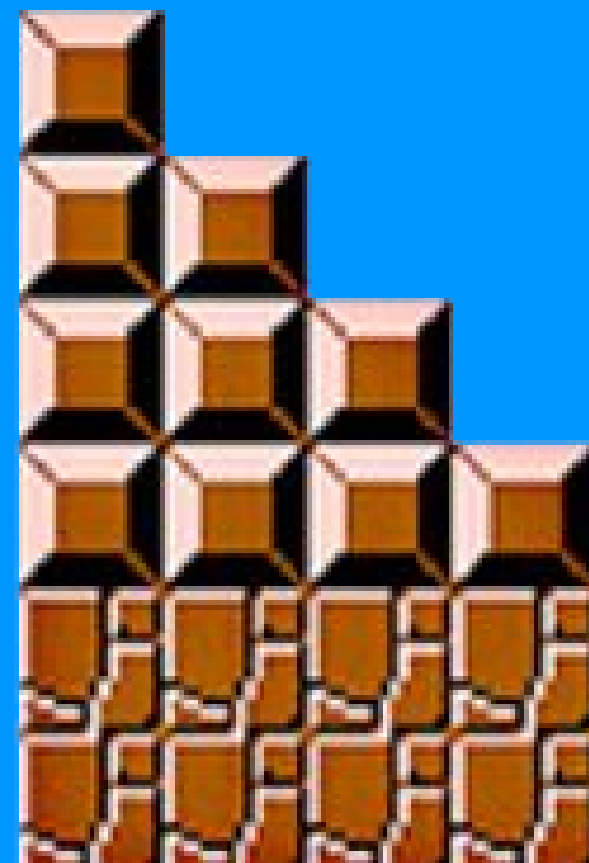
“I WONDER IF THIS  
MEANS . . .”

ACTIONABLE  
LEARNING  
ABOUT  
PEOPLE

OBSERVATION

INFER

INSIGHT/HUNCH





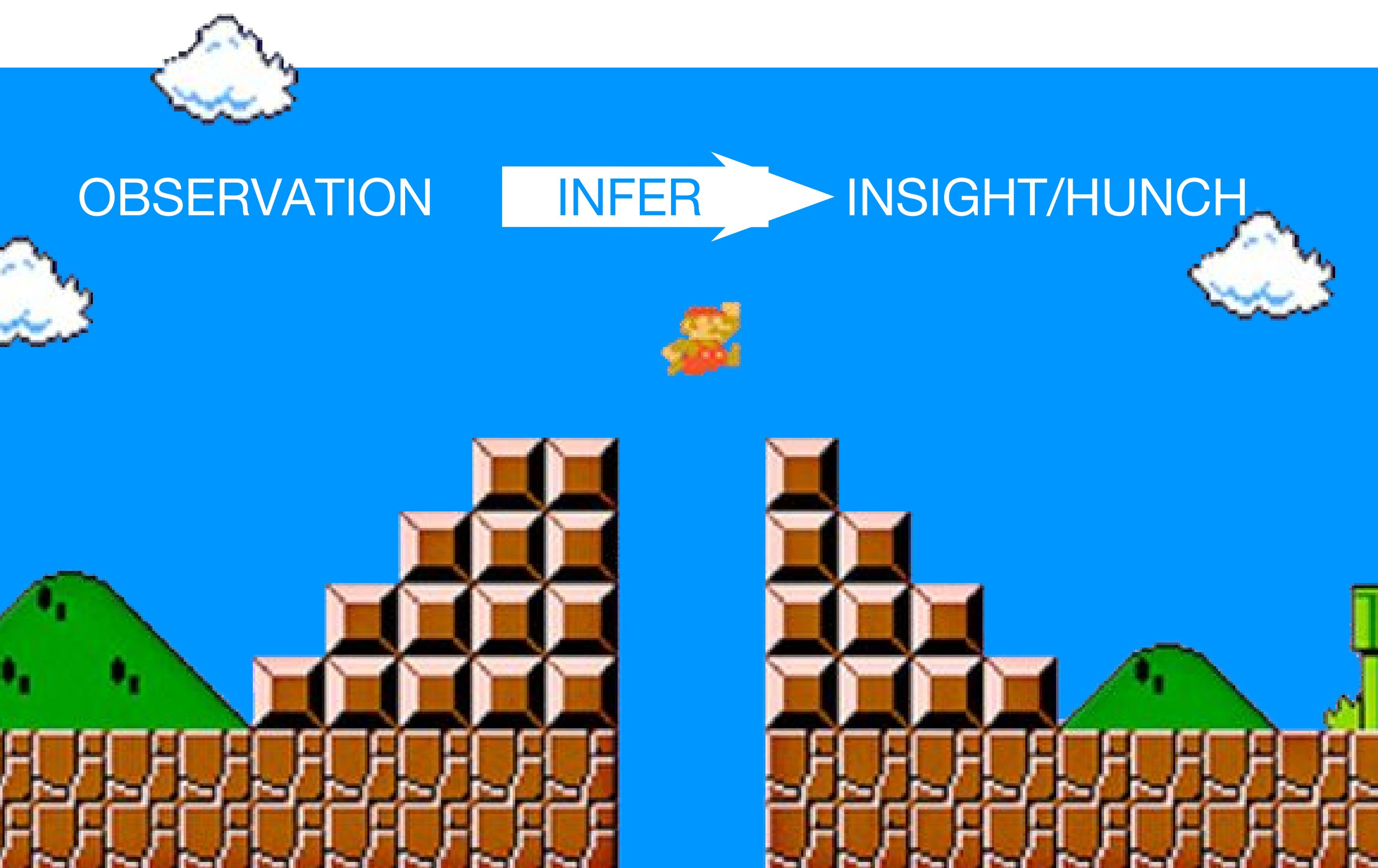




OBSERVATION

INFER

INSIGHT/HUNCH





# OBSERVATION

We heard:

“My brother gets to go to camp, but I can’t go”

We observed:

No trophies in the rooms of the sick children, unlike their siblings



# OBSERVATION

INFER

# INSIGHT/HUNCH

We heard:

“My brother gets to go to camp, but I can’t go”

We observed:

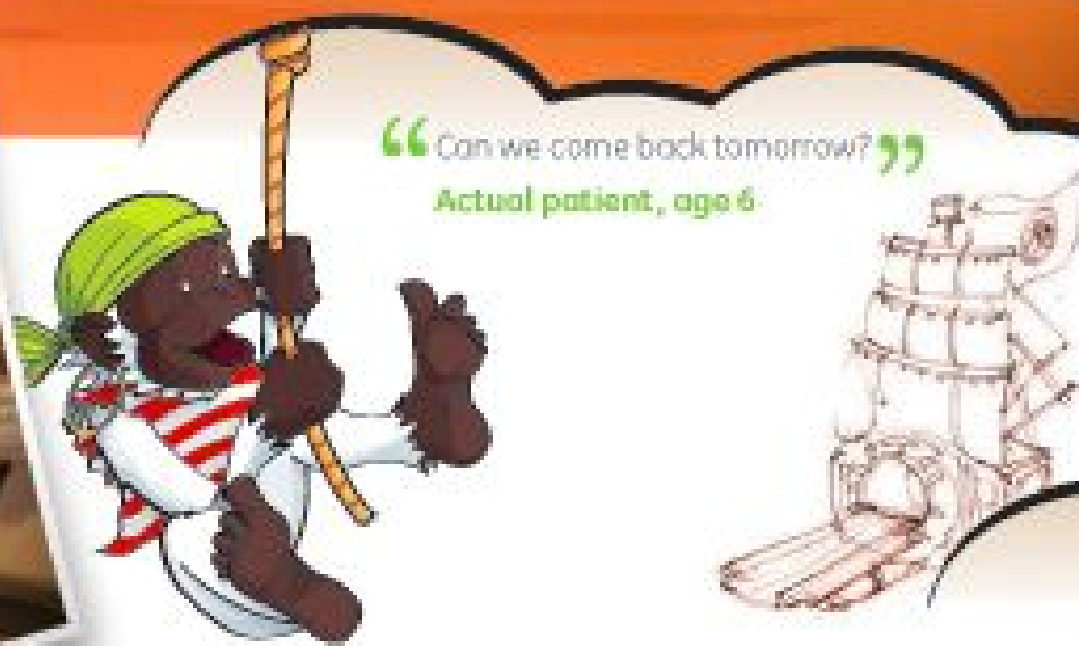
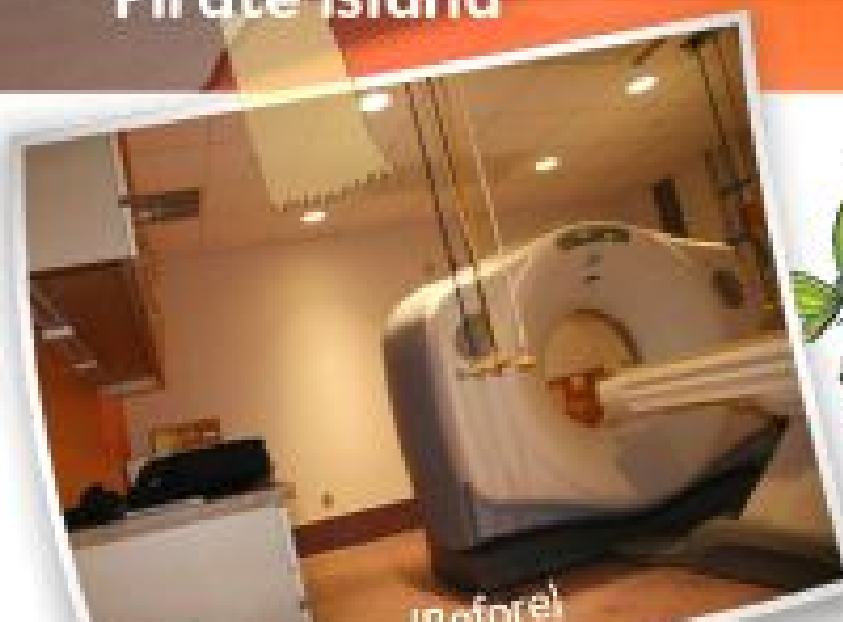
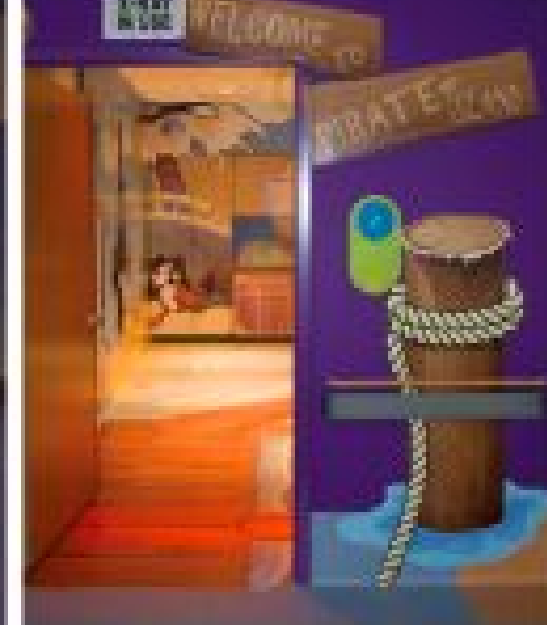
No trophies in the rooms of the sick children, unlike their siblings

Life-threatening illnesses suck all the *adventure* out of their lives





Pirate Island



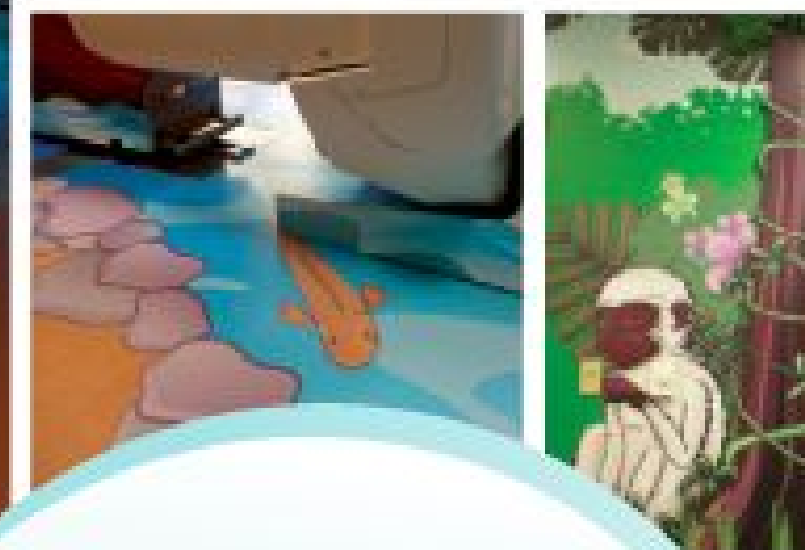




## Jungle Adventure



(Before)



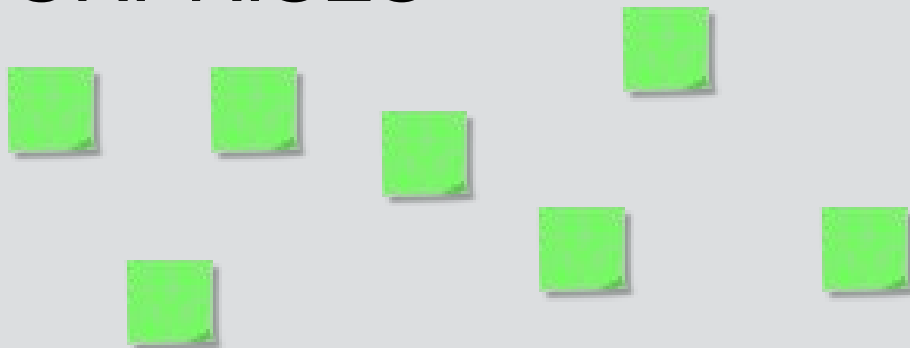
“The Nuclear Medicine room that was designed by GE is absolutely fantastic. That room is **exactly what a children's hospital should look like**, it is the epitome of what a pediatric imaging room should be, with all of the **lights, sounds, smells, and amazing decorations** on the walls, floor, and scanner. We are so excited and proud of this room in our department. In fact, the staff from several nursing units has expressed how jealous they are of what a **wonderful experience** this room will create for our patients and families.”

**Dana Etzel-Hardman, MSN, MBA, RN, CPN,  
Training and Education Specialist**

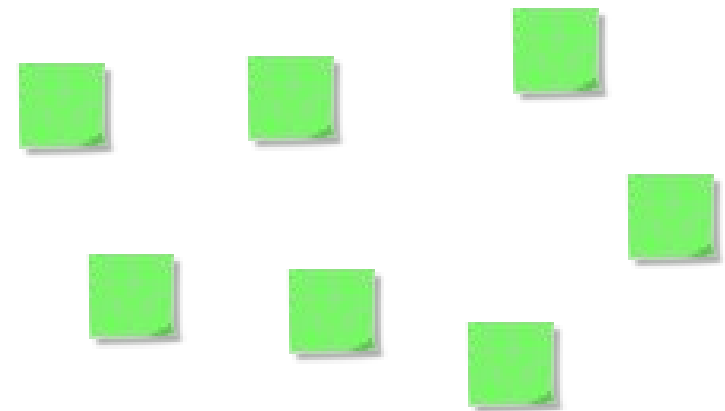


I wonder if this means . . .

TENSIONS,  
CONTRADICTIONS,  
SURPRISES



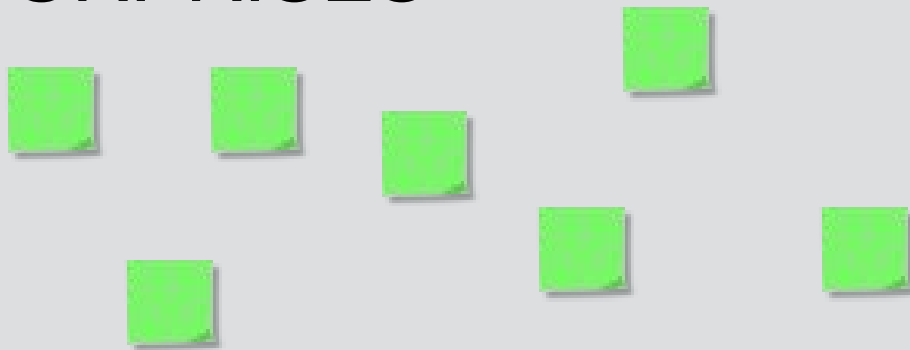
(POSSIBLE)  
INSIGHTS/HUNCHES



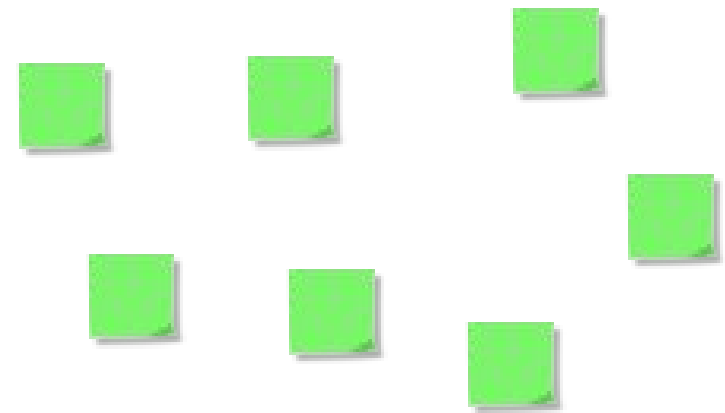
# Now it's your turn!

## I wonder if this means . . .

TENSIONS,  
CONTRADICTIONS,  
SURPRISES



(POSSIBLE)  
INSIGHTS/HUNCHES





**WE MET...**

(person you interviewed)

**WE WERE SURPRISED TO NOTICE...**

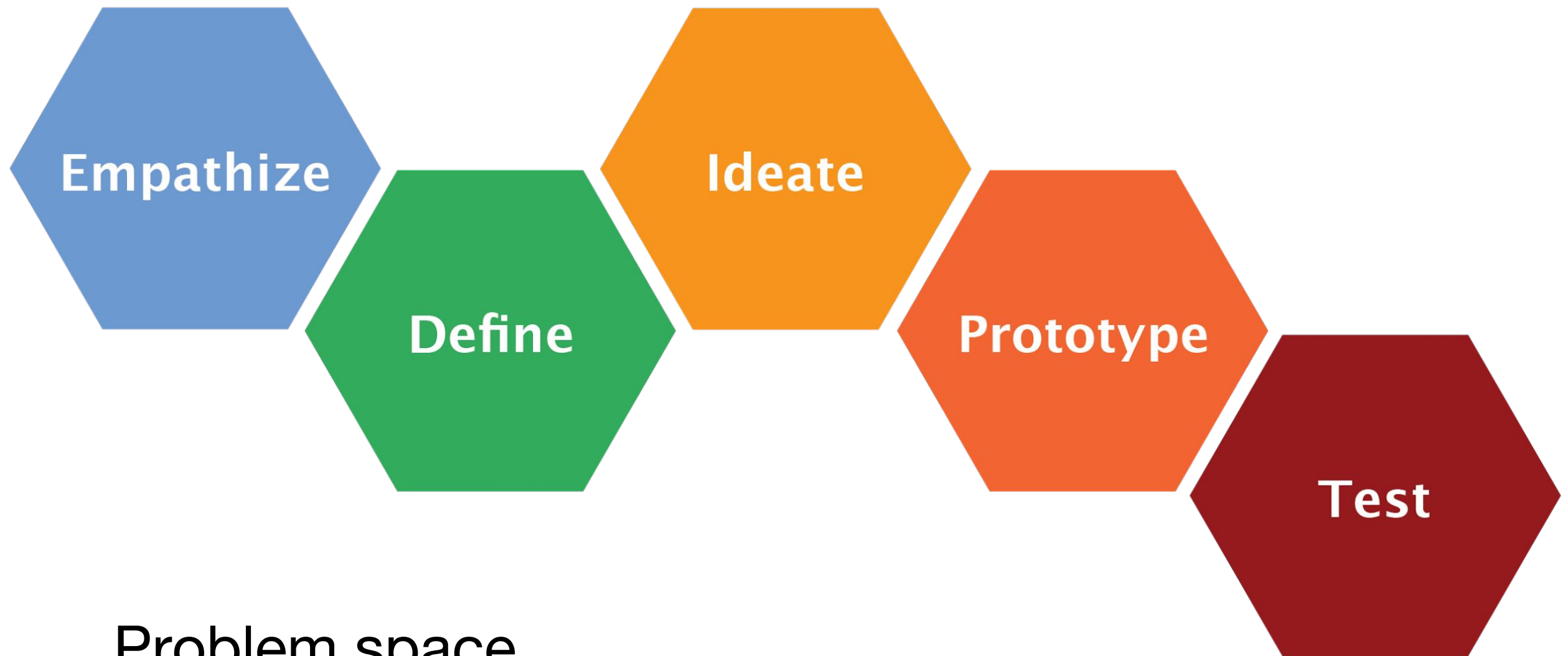
(tension, contradiction, surprise)

**WE WONDER IF THIS MEANS...**

(what did you infer?)

**HOW MIGHT WE...**

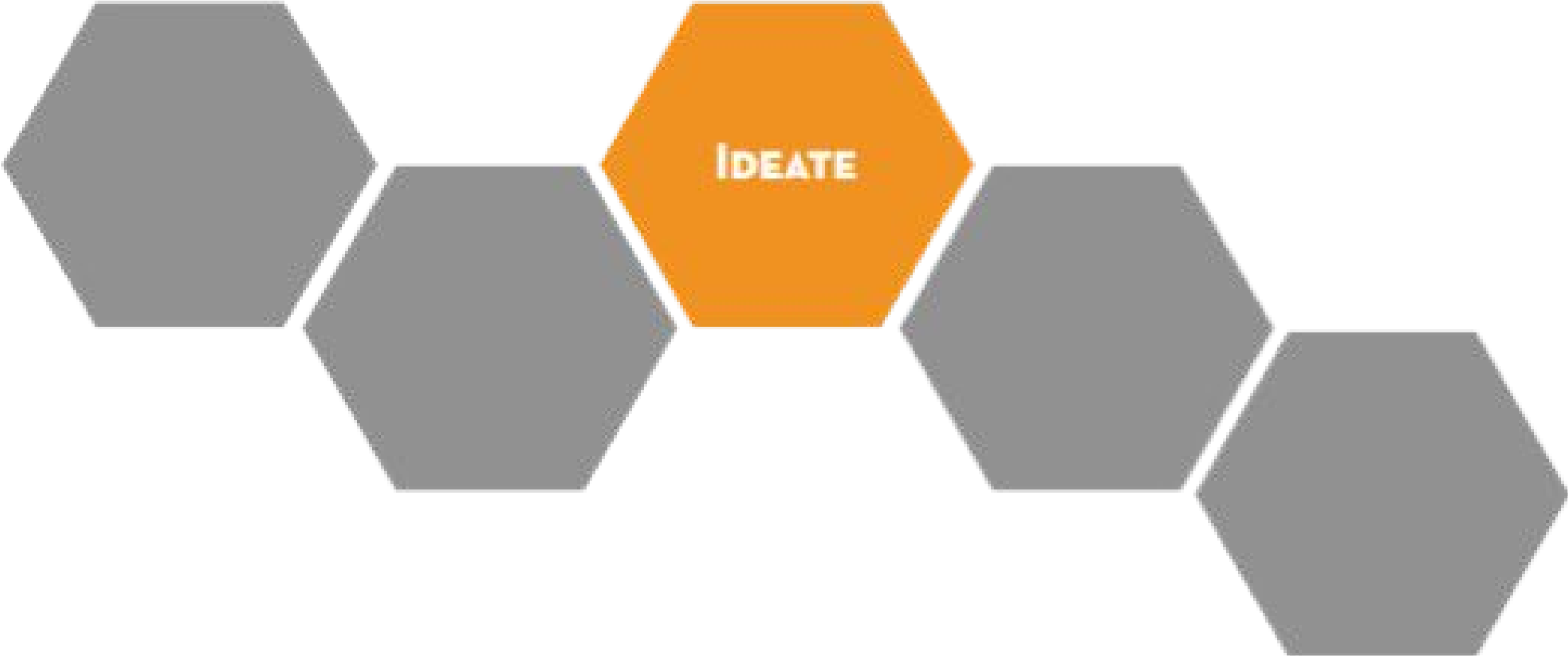
(frame a challenge that doesn't dictate a solution)



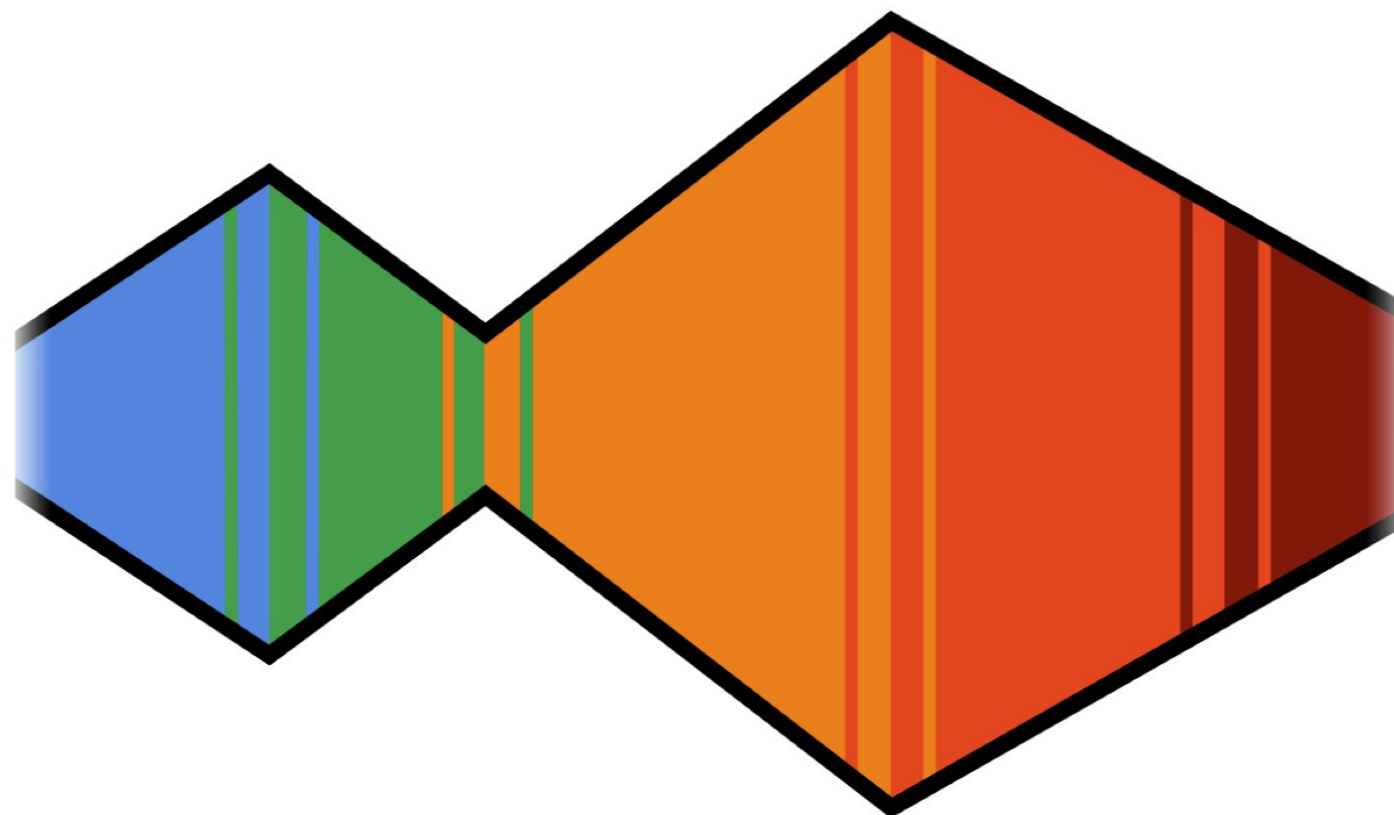
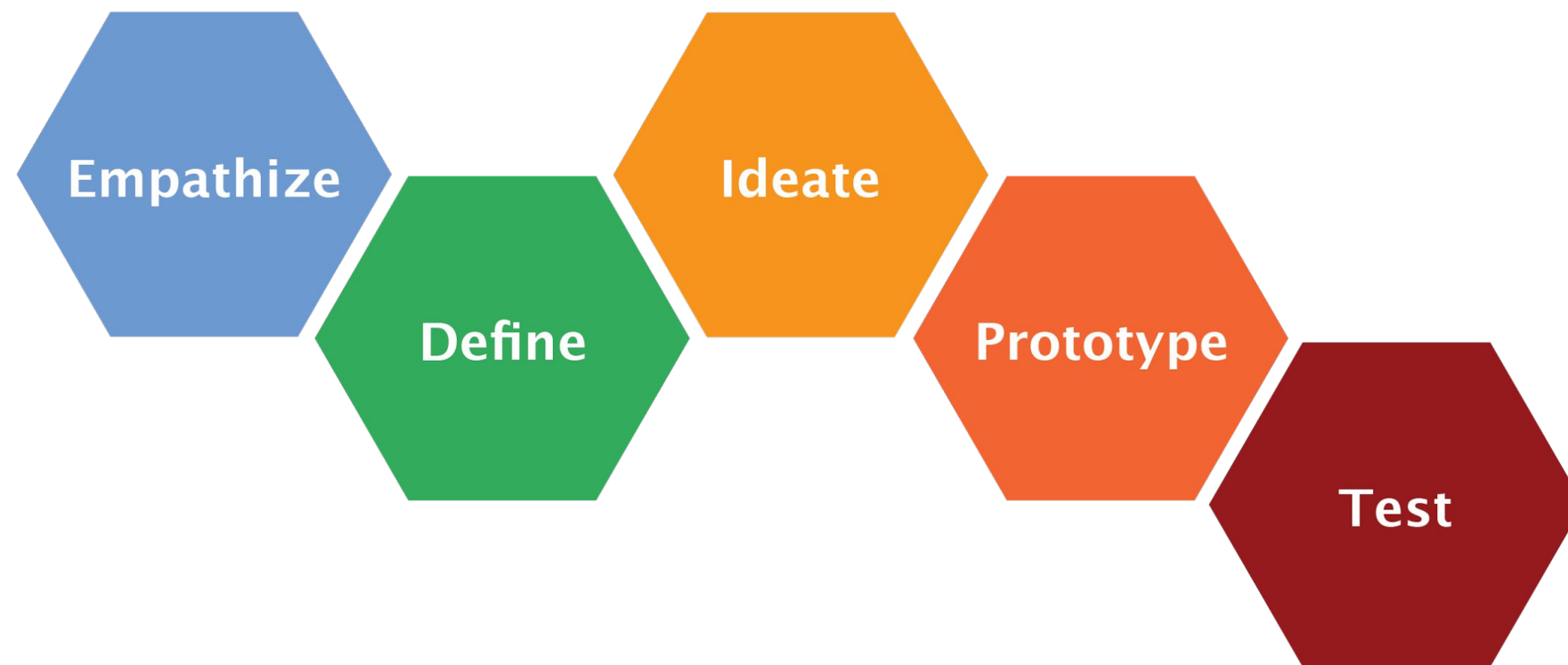
Problem space

Solution space









# Brainstorming Demo

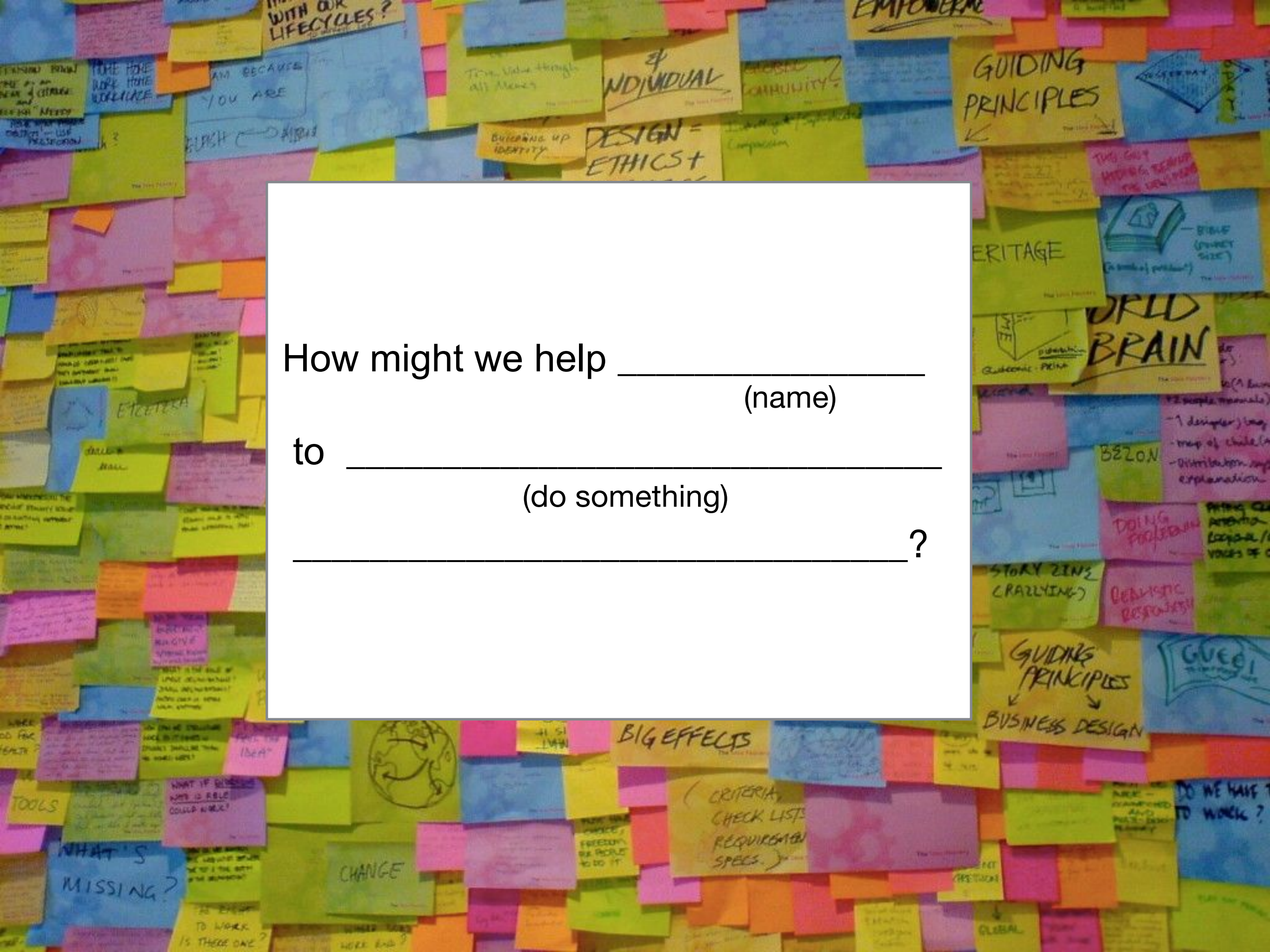




**warm-up**

Pic: CorVos/PezCyclingNews

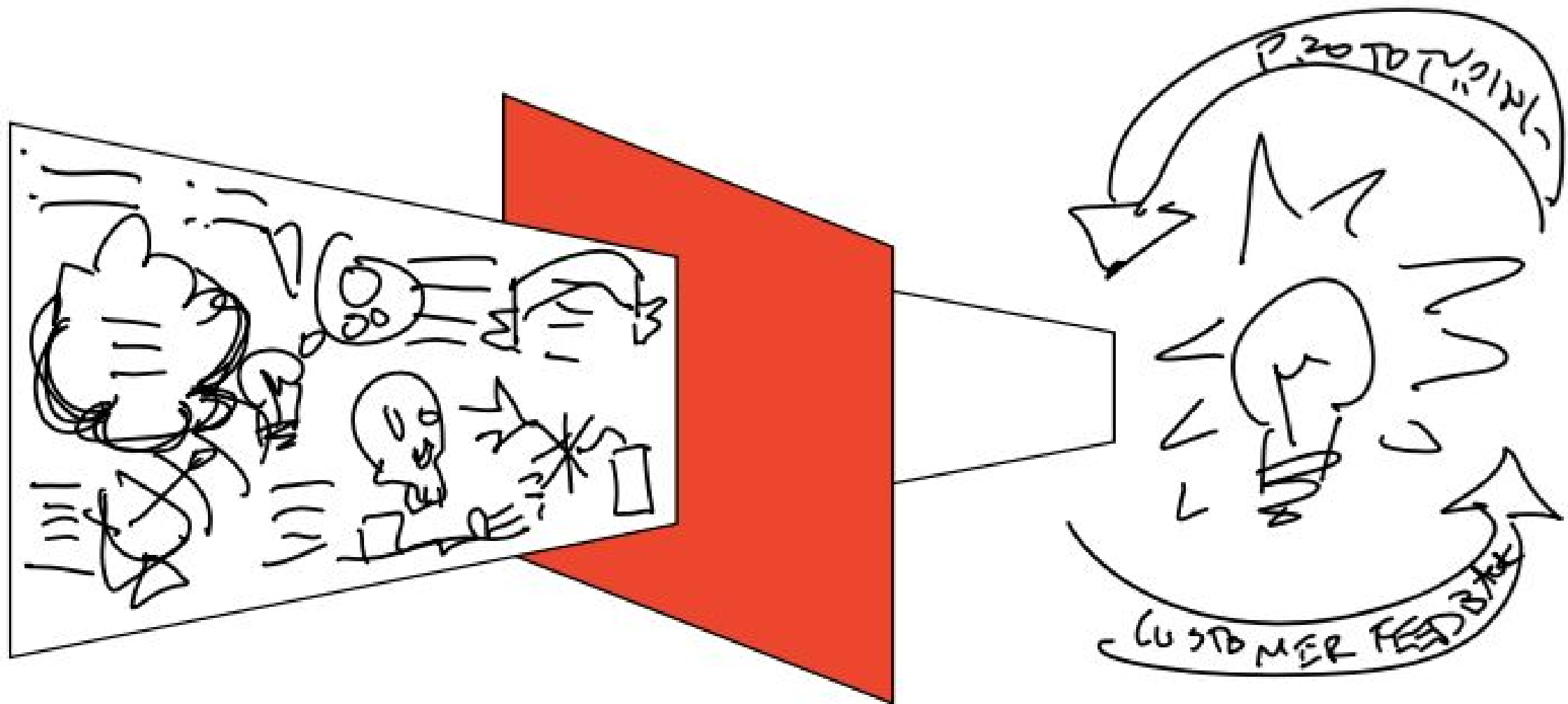




How might we help \_\_\_\_\_  
(name)  
to \_\_\_\_\_  
(do something)  
\_\_\_\_\_?



# Select ideas, retaining the *innovation potential*



**Do not focus on feasibility for now**

**impossible**

A torn piece of light-colored paper is placed on a dark, textured surface. The word "impossible" is printed in a bold, black, sans-serif font. The bottom portion of the word, specifically the letters "ssible", is obscured by a thick, solid red rectangular bar. The paper has irregular, torn edges, particularly on the left side.

DO IT NOW

---

REFLECT

---

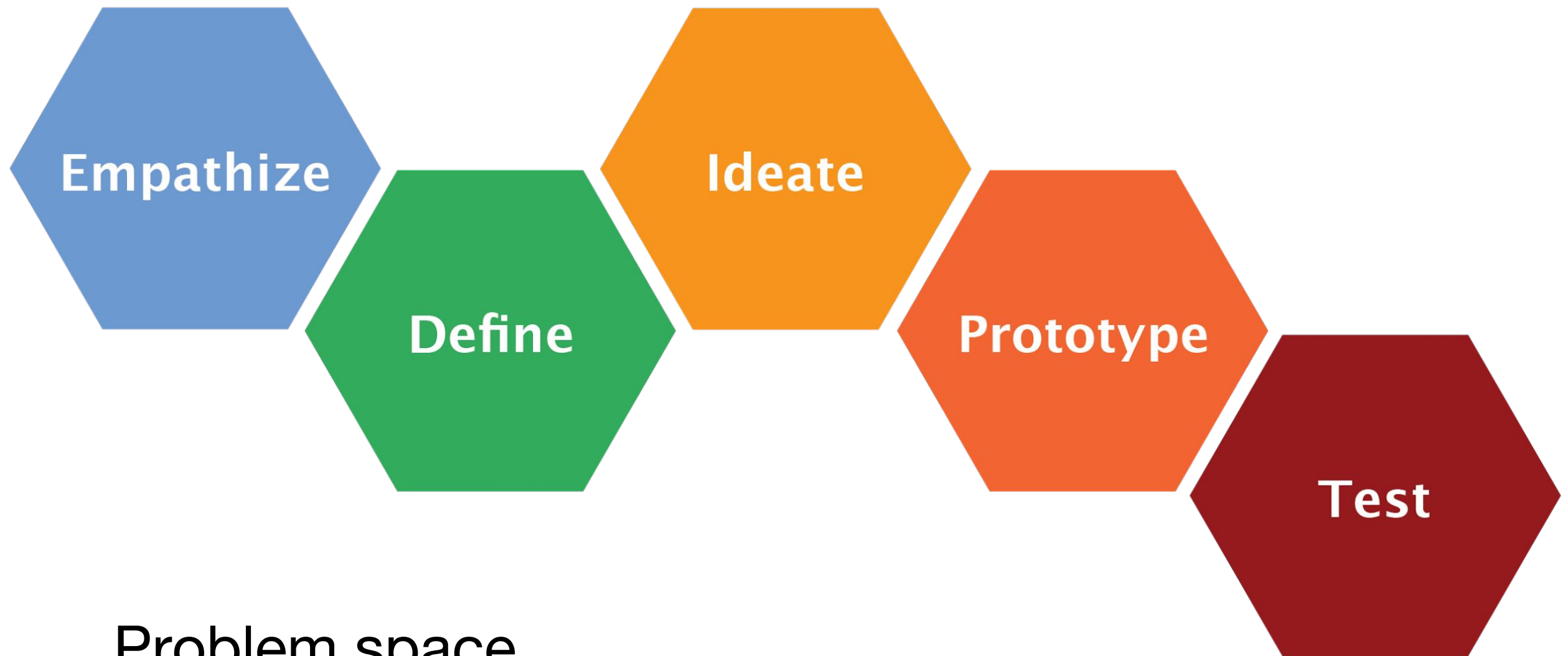
DO IT BETTER

# **Debrief :: Learning Wall**



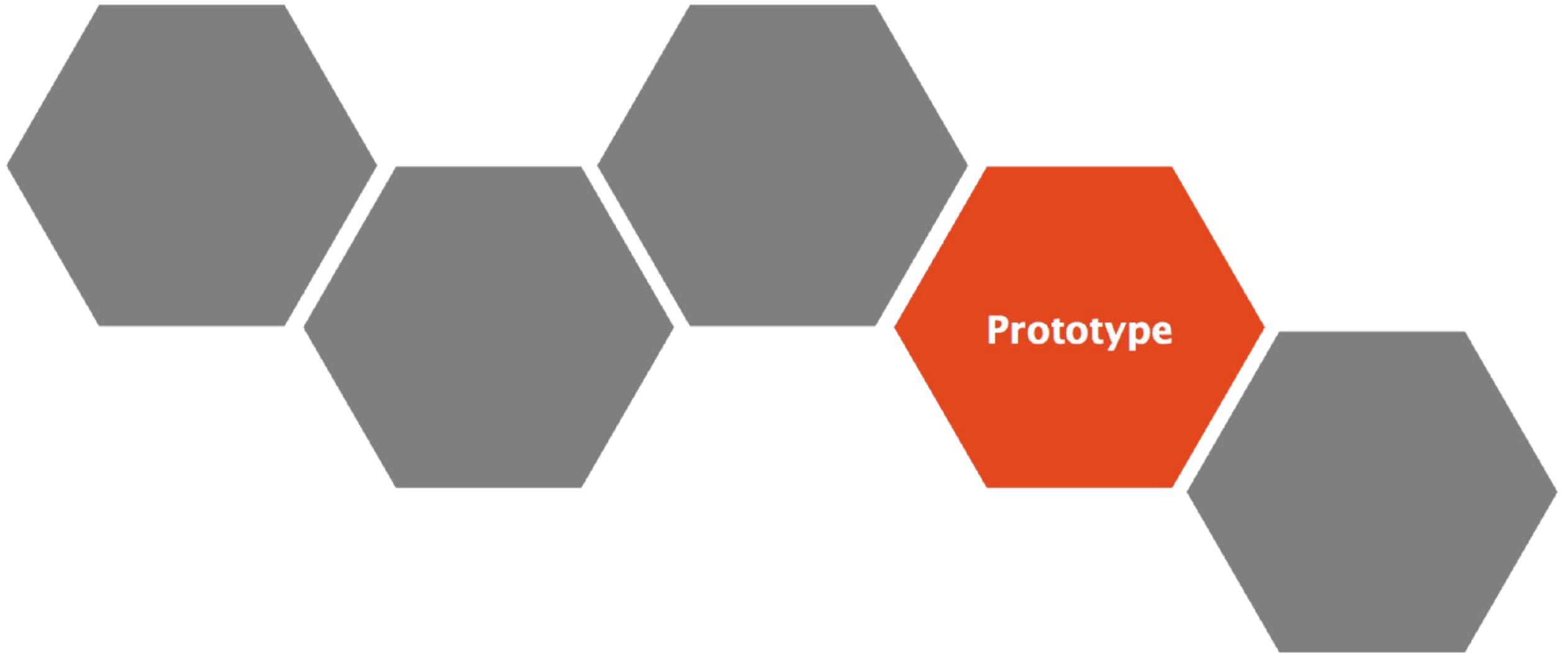
**Day 2-**  
**Welcome back**





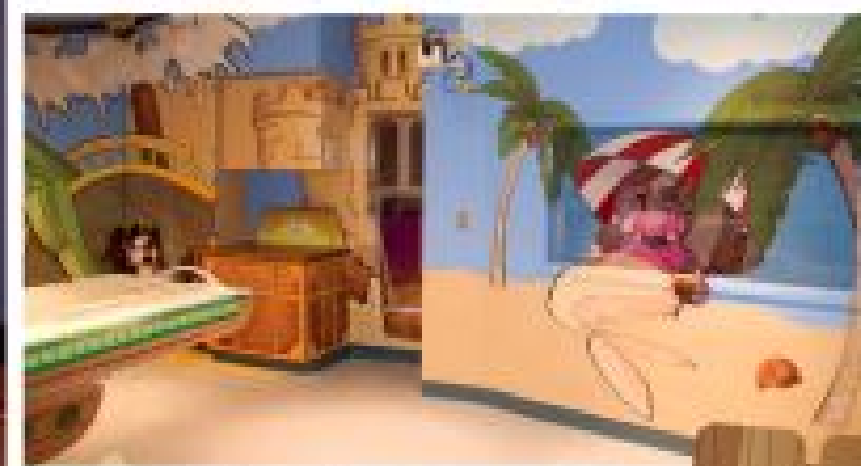
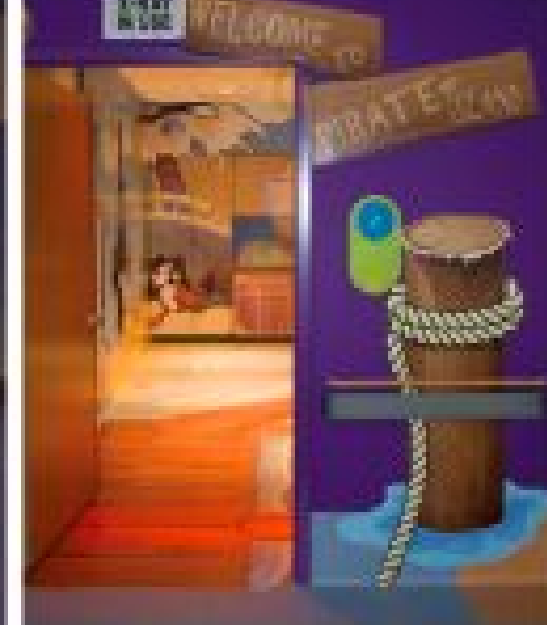
Problem space

Solution space





Pirate Island



“Can we come back tomorrow?”  
Actual patient, age 6







# Products



# Websites

CUSTOMERS

CUSTOMER SEARCH

ADMINISTRATION

COMMUNICATIONS

STORAGE

RV SPACE

		UNIT	SIZE	PRICE	AVAILA
<input checked="" type="checkbox"/>	<input type="checkbox"/>	303	LARGE	100.00	Yes
<input type="checkbox"/>	<input checked="" type="checkbox"/>	304	MED	80.00	<del>9-25</del>
<input type="checkbox"/>	<input type="checkbox"/>	308	SMALL	60.00	9-24-02
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	310	SMALL	60.00	YES
<input type="checkbox"/>					
<input type="checkbox"/>					

# Experiences







FESTIVAL DE CANNES  
SECCIÓN OFICIAL  
UNA CIERRA MIRADA

# EL BAÑO DEL PAPA (\*)

UNA PELÍCULA DE ENRIQUE FERNÁNDEZ Y CÉSAR CHARLONE

SAFARI FILM INTERNATIONAL Y L'ARQUE ENCE PRESENTAN EL BAÑO DEL PAPA  
EN CO-PRODUCCIÓN CON 82 FILMES Y CINEMA FILMS EN ASOCIACIÓN CON TELEBRASILE CON LOS PRODUCTORES FRANCISCO SALOMÓN Y HUGO ROVERONI  
CON LA AYUDA DEL PROGRAMA INTERMEDIA, FONIA, FONDOS SUB-CINEMA MINISTERIO DE LA CULTURE ET DE LA COMMUNICATION-ENC  
MINISTÈRE DES AFFAIRES ÉTRANGÈRES (FRANCE), NBB SCOD AUDIOVISUEL, CINE EN CONSERVATION, ANACOM, Y THE MINISTRY OF CULTURE OF BRAZIL  
CON CÉSAR TRONCOSO, VIRGINIA MÉNDEZ, MARCO SICA, VIRGINIA FOLLA, ROSARIO DOS SANTOS, HENRY DE LOEN, JOSÉ ARCE Y NELSON LENCE  
MÚSICA ORIGINAL Y EDICIÓN ENRIQUE FERNÁNDEZ ADAPTACIÓN ENRIQUE FERNÁNDEZ Y CÉSAR CHARLONE FOTOGRAFÍA CÉSAR CHARLONE, A.D. DIRECCIÓN ARTÍSTICA ENZO OLIVERO  
VESTUARIO ALEXANDER ROSKOFF JORGE DANIEL MARQUEZ MÚSICA LUCIANO SUPERVILLE Y BARCEL CASASQUERRA CON CAMINO DE LOS BULEVARDOS DE OSWALDO RODRIGUEZ CASTELLANO  
MONTAJE SANDRINO SARA DIRECCIÓN DE PRODUCCIÓN MARTHA MOLINA DIRECTORES DE PRODUCCIÓN SANDRINO SARA Y YVARY Y CLAUDIA RIVERA  
CO-PRODUCTORES ANDREA BARATA HURTADO, NEL BURLINCA, FERNANDO NEIBELLES Y SEAGAT CAPTURA PRODUCCIÓN POR ELONA ROSE - WWW.COLEN.COM/ELBAÑODELAPAPA

82 FILMES CINEMA FILMS TELEBRASILE L'ARQUE ENCE SAFARI FILM INTERNATIONAL 82 FILMES CINEMA FILMS TELEBRASILE L'ARQUE ENCE SAFARI FILM INTERNATIONAL 82 FILMES CINEMA FILMS TELEBRASILE L'ARQUE ENCE SAFARI FILM INTERNATIONAL



(\*) The Pope's Toilet



If someone's taking too long.



**THE ONLY WAY**

**TO DO IT**

**IS TO**

**DO**

**IT.**





**Now it's your turn**



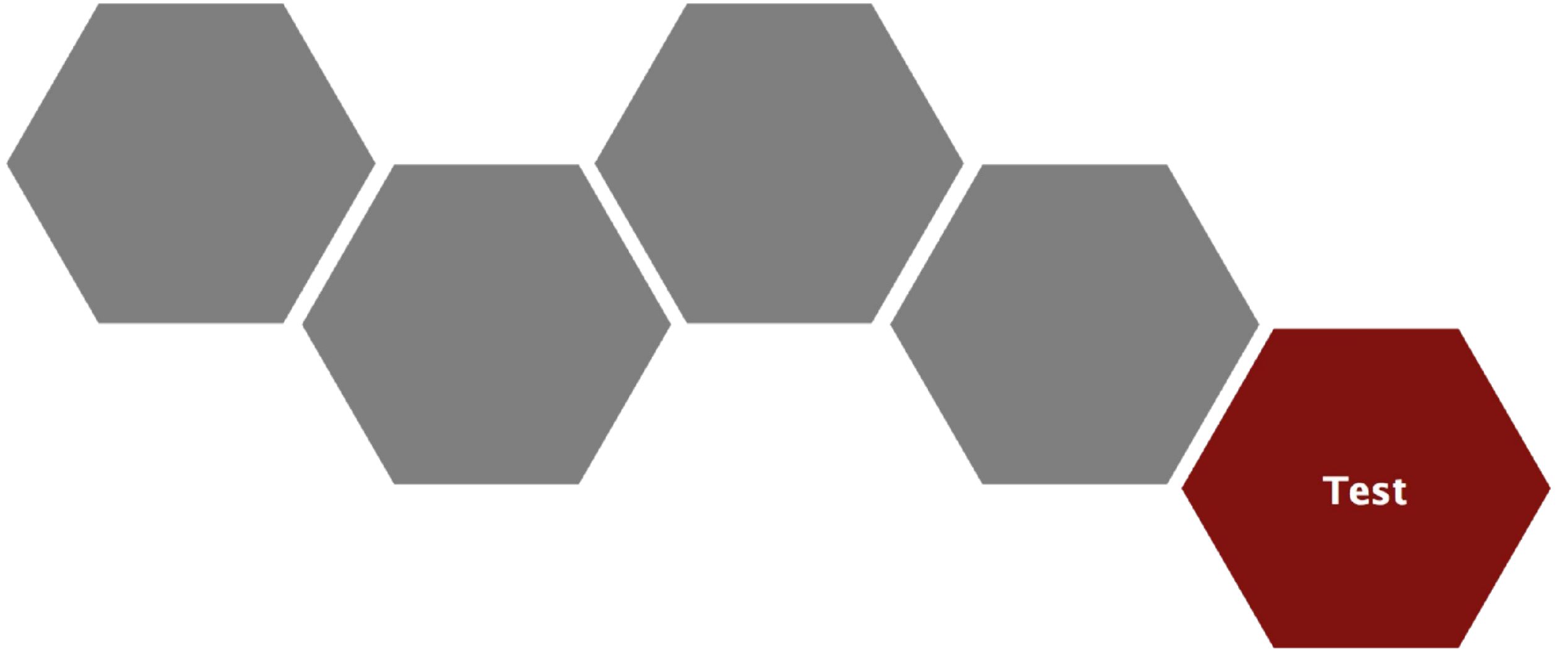




**CONTEXT**

**ROLES**

**PROPS**









*What's  
working?*



*What could be  
improved?*



*New  
questions*

*New  
ideas*

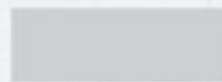
**4 min** each

# Now it's your turn

*What's  
working?*



*What could be  
improved?*



*New  
questions*



*New  
ideas*

**4 min** each

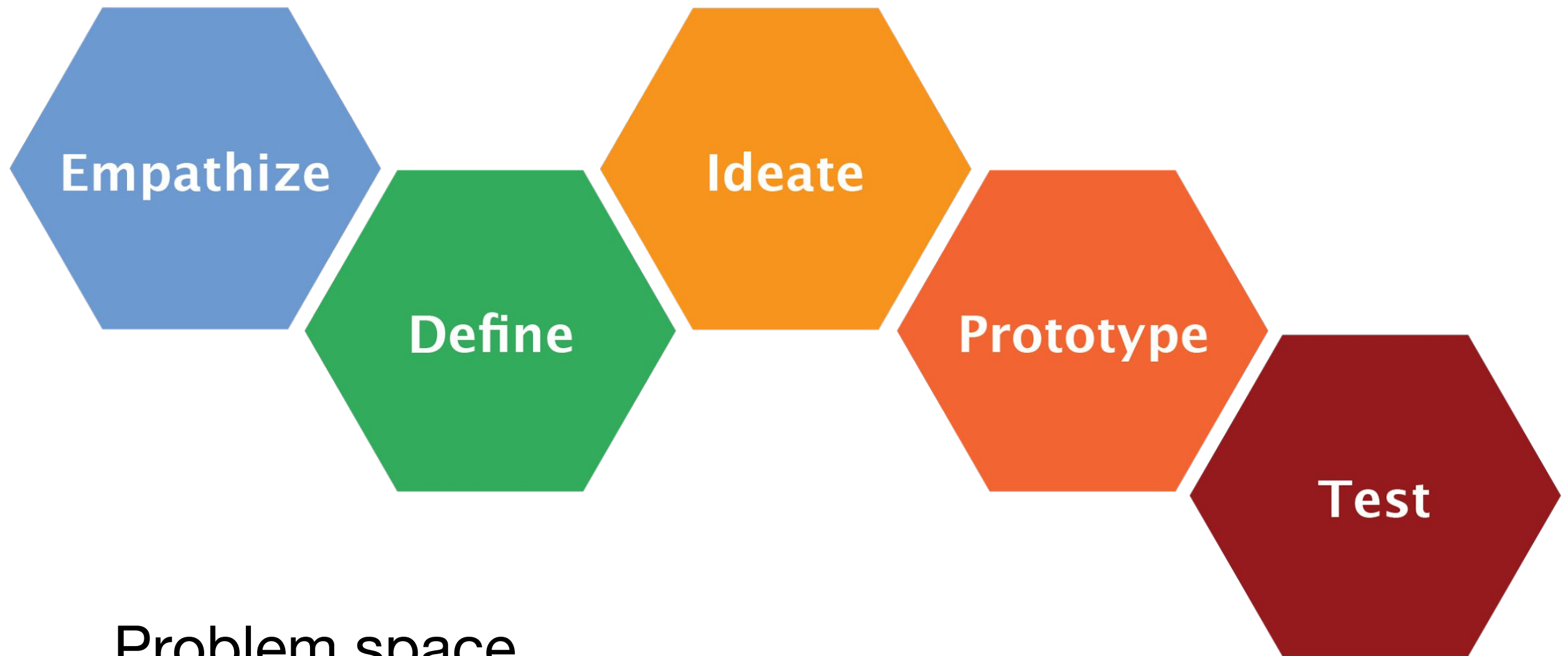


**innovation is not an event**



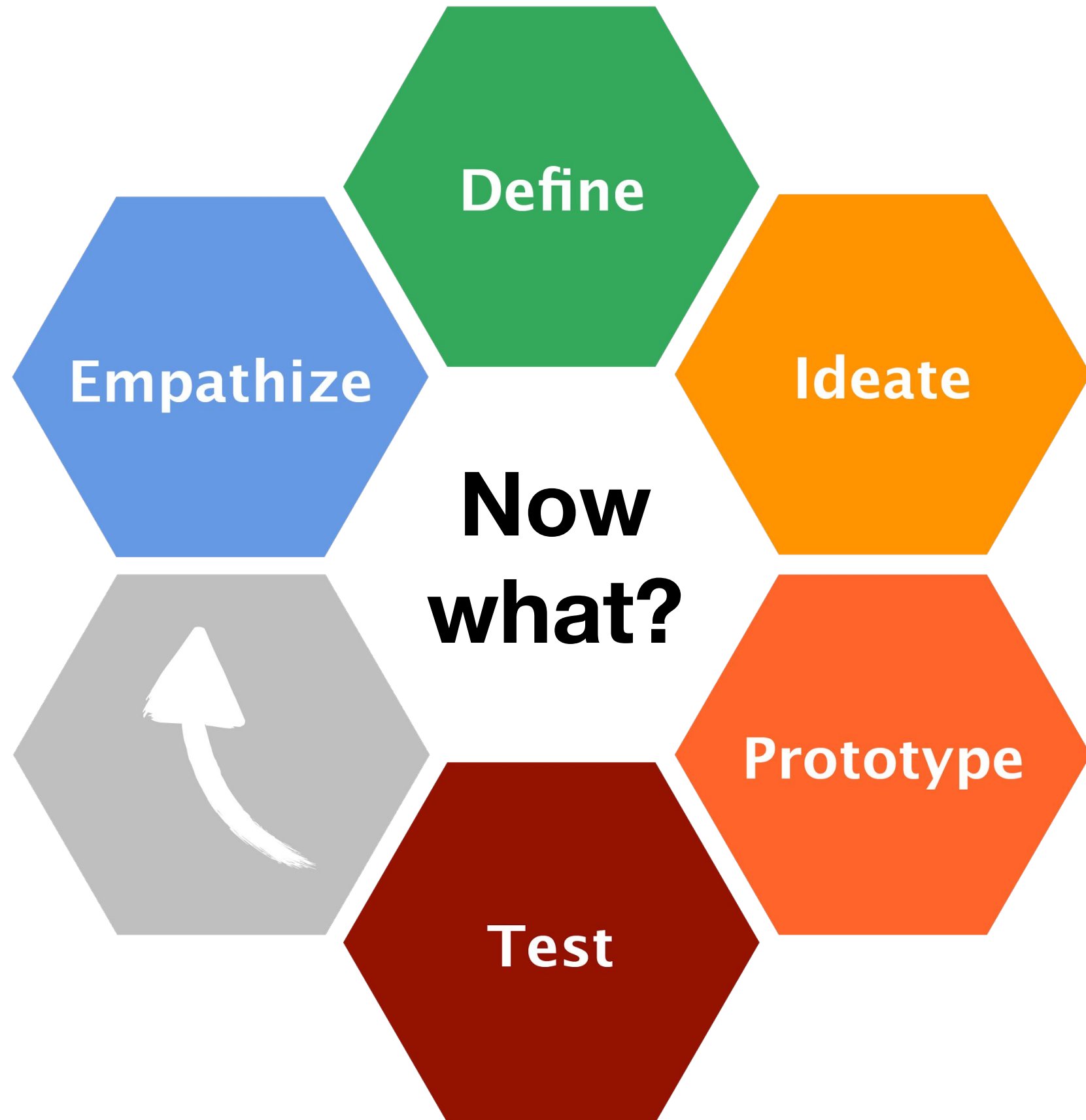


**innovation is a (design) process**

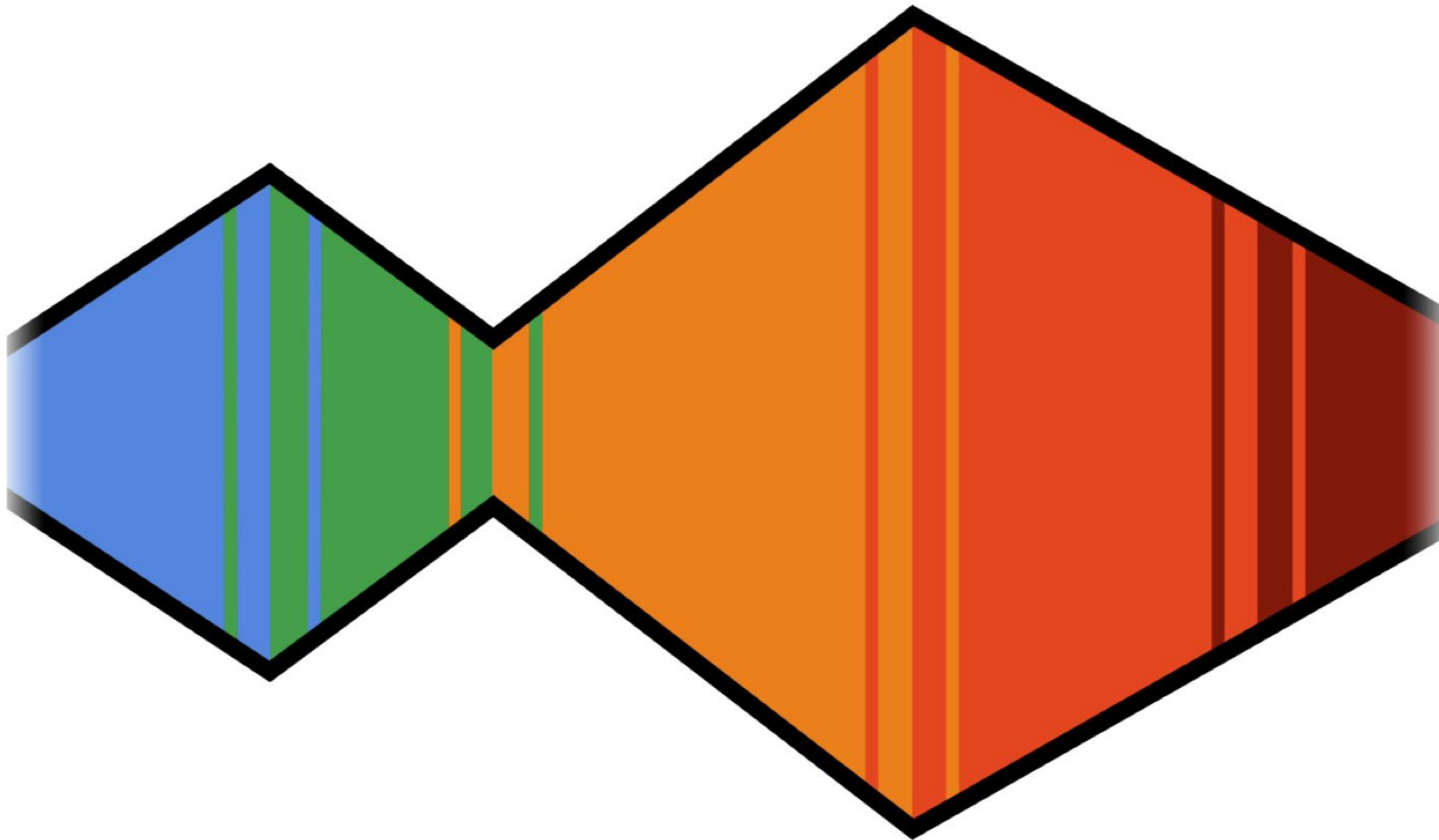


Problem space

Solution space



# Flaring and focusing





Uncertainty / patterns / insights

Clarity / Focus



Research

Concept

Design

**POINT OF VIEW**

**SOLUTION**

**WE CREATED...**

(your prototype)

**WE TESTED IT WITH...**

**WE THOUGHT IT WAS ABOUT...**

(the opportunity you had initially identified)

**BUT IT'S REALLY ABOUT...**

(a different opportunity)

# IBM Speech to Text

Decoder Output

Speaker Version

Robert L. Mercer

IBM Research Center

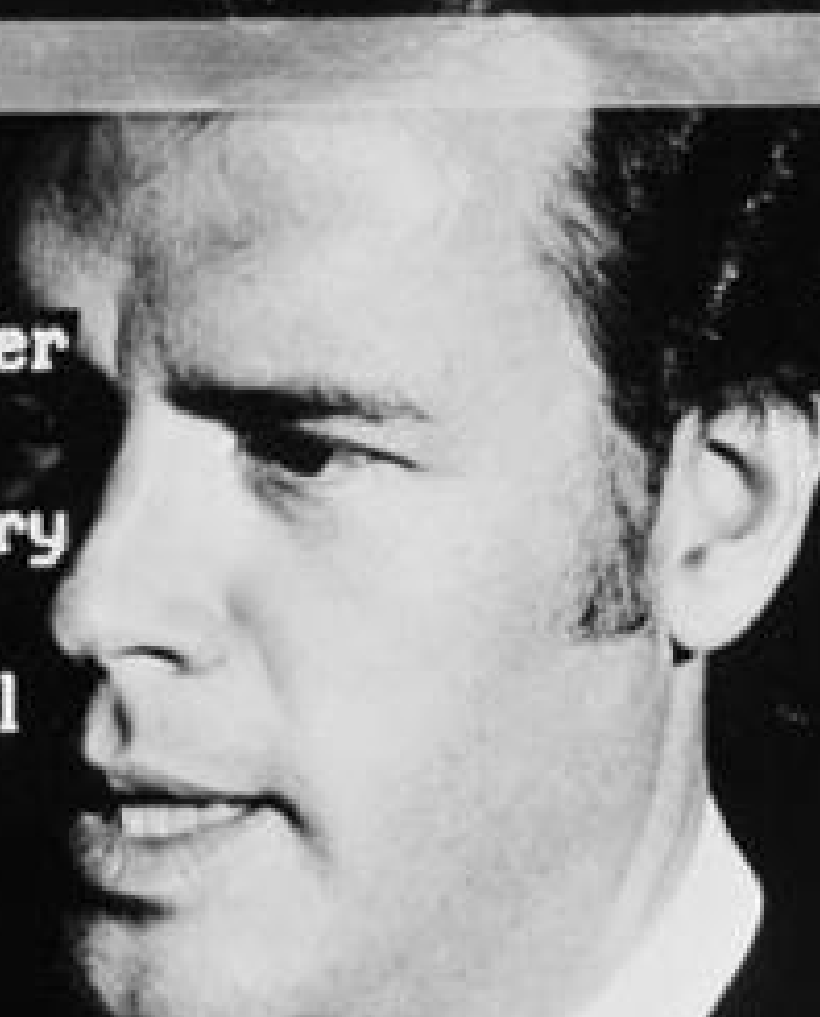
28,000 Word Recognizer

Processed Text

I am demonstrating an experimental  
IBM speech recognition system. Earlier  
versions of the system had a vocabulary  
of 5000 words and required a room full  
of computers. This version has a

MIC

KEY







## Entrepreneurial Design for Extreme Affordability

- 01 Our Vision
- 02 Our Class
- 03 Our Students
- 04 Our Team

Big Picture

Success Stories

Current Partners

Continuing Projects

Participate

### 01 Our Vision

Why are 90% of the world's products and services designed for 10% of the world's population?

#### A paradigm shift has begun.

Designers and engineers have tired of making products that only serve a tiny fraction of the world's population. Businesspeople are working to leverage the power of business models to do good in the world. Philanthropists are looking for ways make charity more sustainable. And social entrepreneurs all over the globe are experimenting with innovative ways to do their job better.

#### When we bring these people together, exciting things happen.

Lots of individual want to help the poor, but we believe that problems like poverty, disease, and hunger are so big and complicated that no single kind of person has all the necessary tools. The really innovative solutions are discovered-and implemented-through radical collaboration between diverse individuals from different backgrounds, disciplines, and cultures. We help these innovators rally around a common design process, appreciate cultural contexts, develop deep empathy, prototype and iterate ideas rapidly, and sometimes reframe the problem entirely. It's not long before unexpected ideas begin to take shape.

#### What's our mission? To treat the poor as customers, not as charity recipients.

We believe in listening to the needs the poor tell us about, not assuming we know best. We believe in products and services designed for specific cultural contexts, not just Western hand-me-downs. And we believe that careful attention to design can create innovative-and extremely affordable-solutions to the problems of the other 90%.













**A low-cost infant warmer**  
designed for the developing world



**EMBRACE**  
GIFT COLLECTION ▶



**Be the Change: Save a Life**

Watch ABC's 20/20 new Global Health  
Series featuring Embrace Infant Warmer



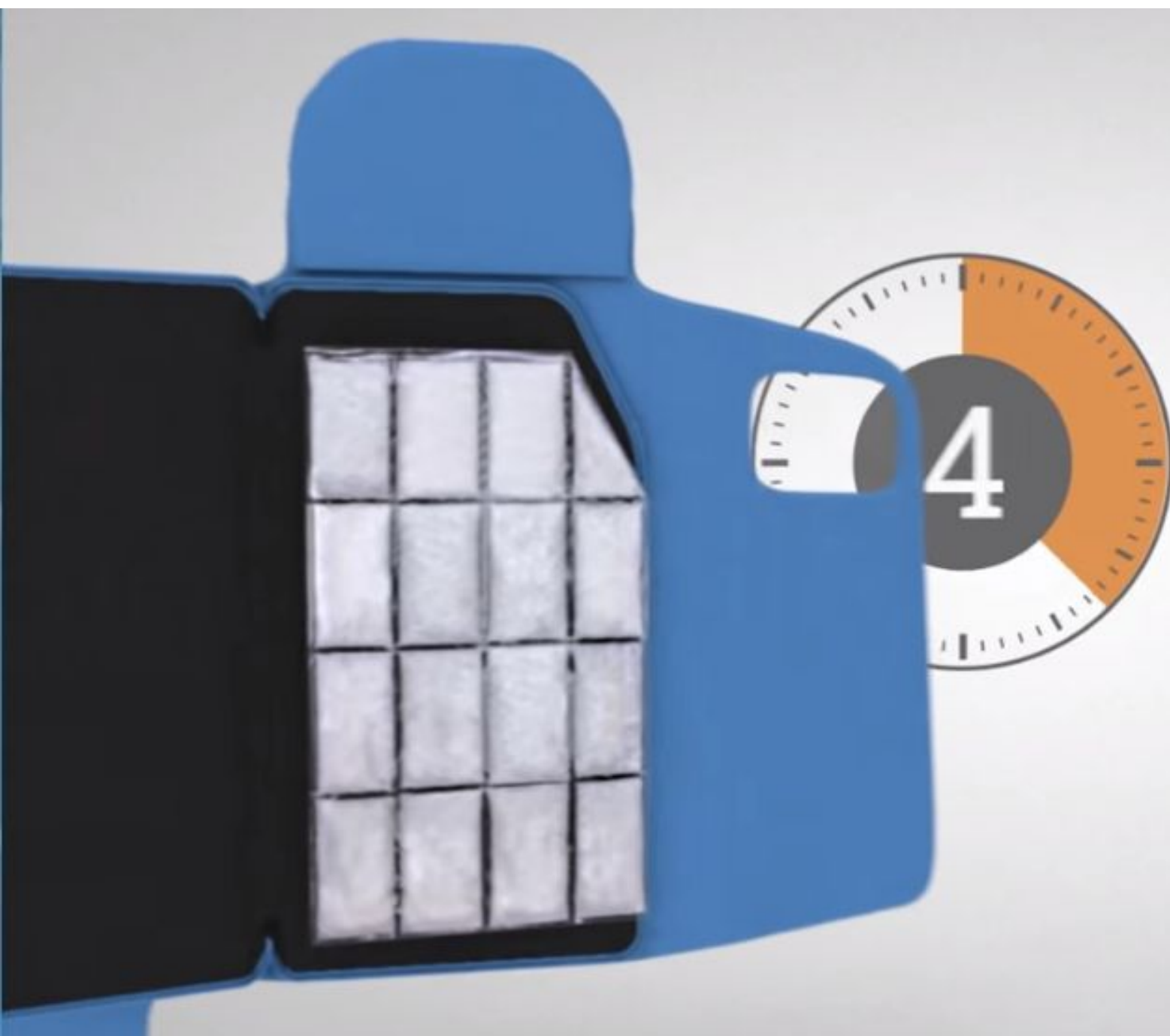
**WATCH VIDEO**

Learn more about our  
cause



**Donate**  
to Embrace



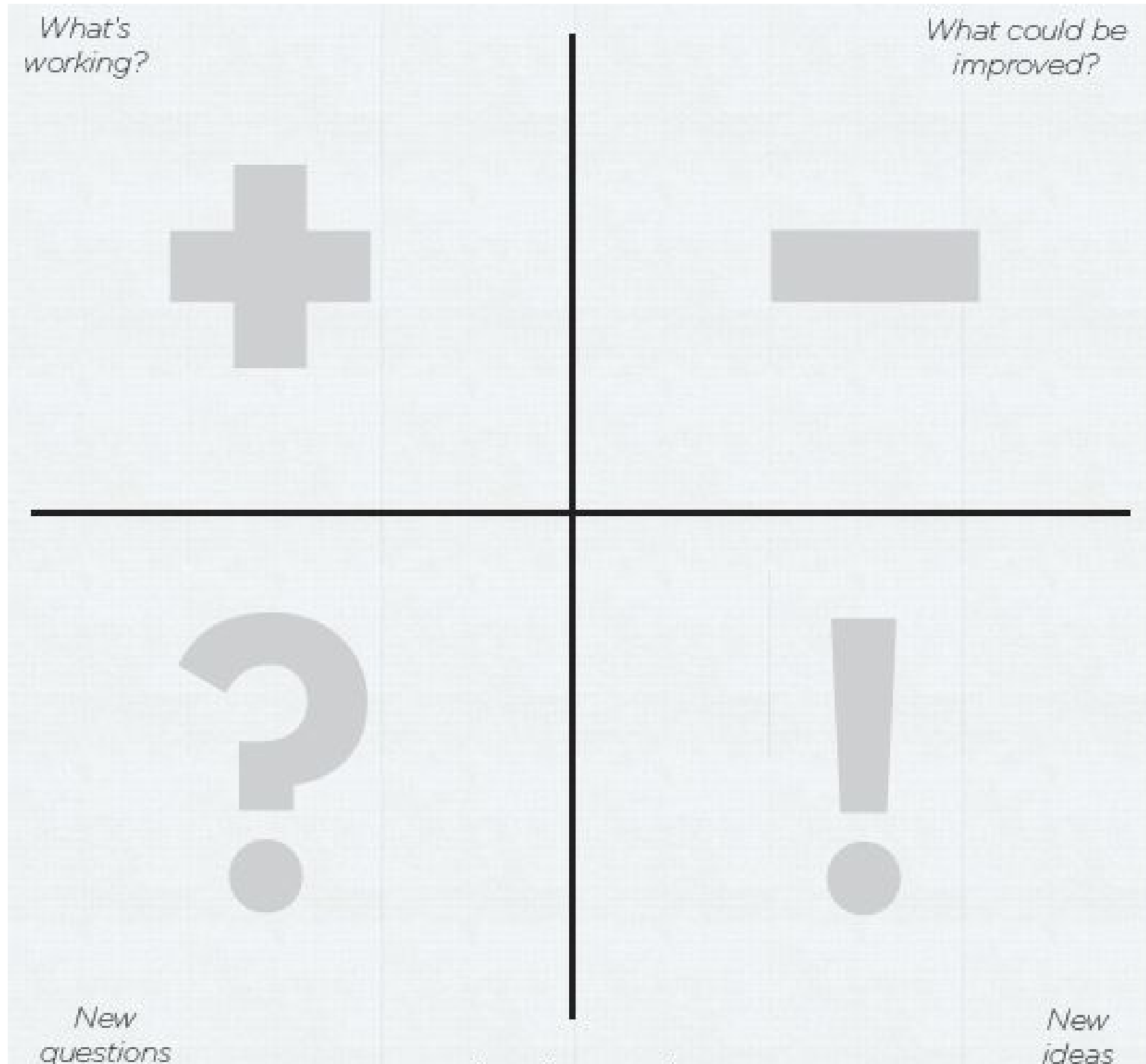


Stays warm up to  
**HOURS**





# Shareout and Feedback





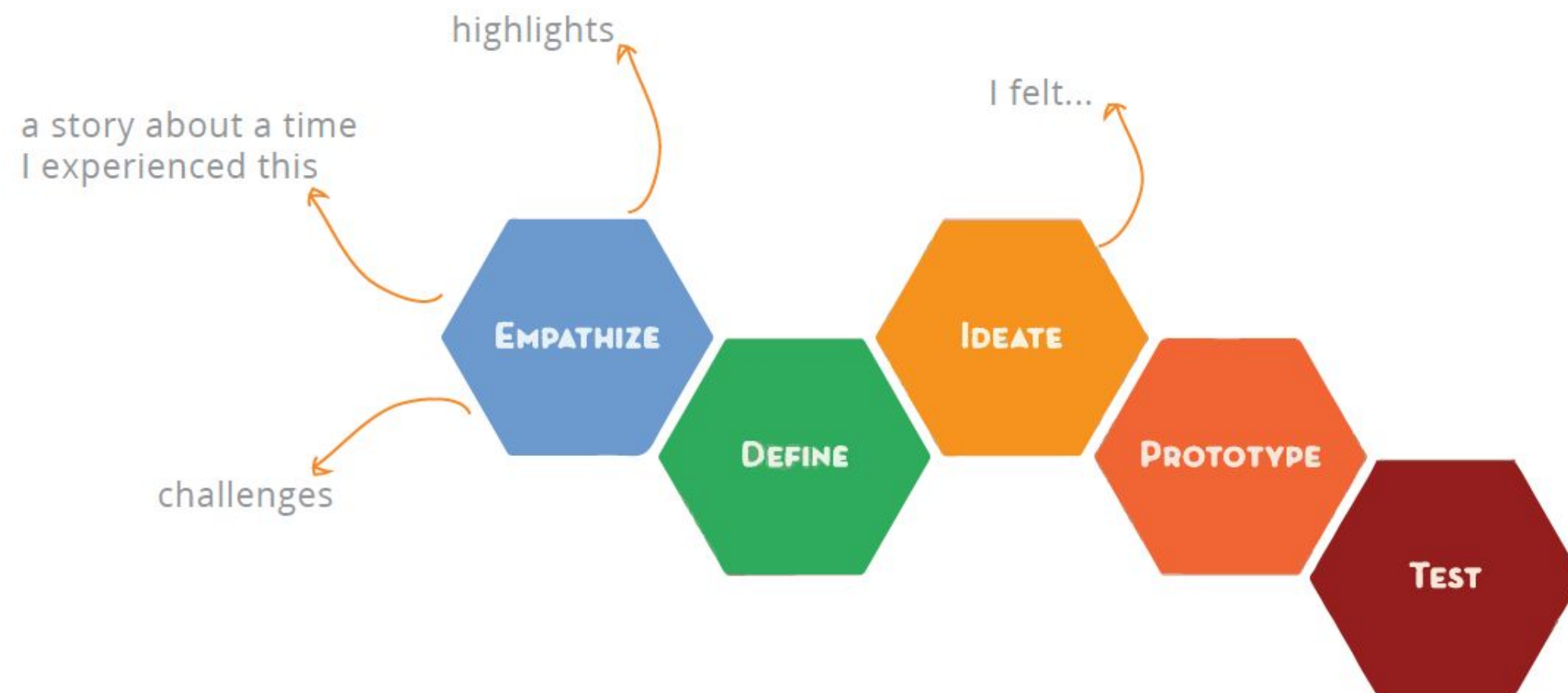
DO IT NOW

---

REFLECT

---

DO IT BETTER



# Personal Prototyping Plan

## STAGE 1: DEFINE

1

### IDEA

What idea do you want to try out?  
- Sketch the key stakeholders this idea will impact.  
- How would you describe it in a news headline?



Mindset: select for possibility, not feasibility

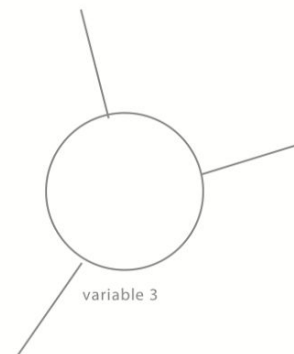
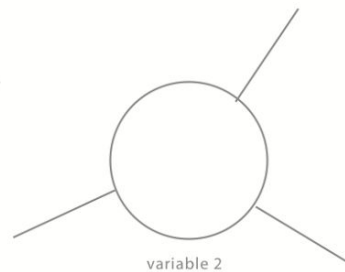
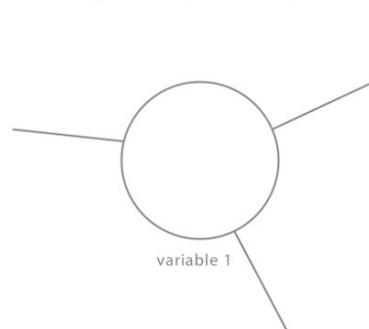
2

### HYPOTHESES

What are ASSUMPTIONS you have about this idea?  
List them and circle the most critical ones (if those turn out to not be true, your idea wouldn't work).

?

What VARIABLES might you experiment with?  
Possible variables might be roles, timeframes, audience.



Mindset: fail early and often

3

### PROTOTYPE

How might you bring this idea to life with minimal time and resources? What can you do in the next week?



Mindset: bold vision; small bets

# Resources

<http://universityinnovationfellows.org/msi-sap-workshop/>



Faculty Workshop: Introduction to Design Thinking, April 2017

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## Faculty Workshop: Introduction to Design Thinking

*April 18-19, 2017/*

*Hasso Plattner Institute of Design (d.school), Stanford University*

This two-day immersive workshop, hosted by the University Innovation Fellows program at Stanford's d.school in partnership with SAP, served as an introduction to the design thinking process. Attendees were faculty from minority serving institutions as well as University Innovation Fellows. The challenge of how we might align talent development in universities to the needs in tech industries. Interviewed representatives from several Silicon Valley companies.

### Workshop resources:

[Agenda \(pdf\)](#)

[d.school Tools for Taking Action](#)

### Schools represented:

Alabama A&M University

Berkeley City College

California State University, Los Angeles

Delaware State University

Florida A&M University

Norfolk State University

Prairie View A&M University

Santa Monica College

Spelman College

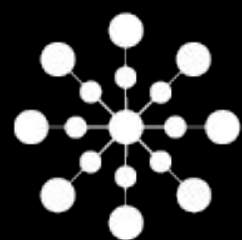
Tuskegee University



# THANK YOU!



[universityinnovationfellows.org/aacu2017](https://universityinnovationfellows.org/aacu2017)



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Institute of Design at Stanford