



# From Droplet to Deluge: Redesigning Water Conservation

The world is full of **BIG** problems...

War

Natural Disasters

Health care

Education

Water

Environment

Homelessness

Design thinkers solve

BIG  
PROBLEMS.

But instead of  
designing  
solutions for  
EVERYONE...

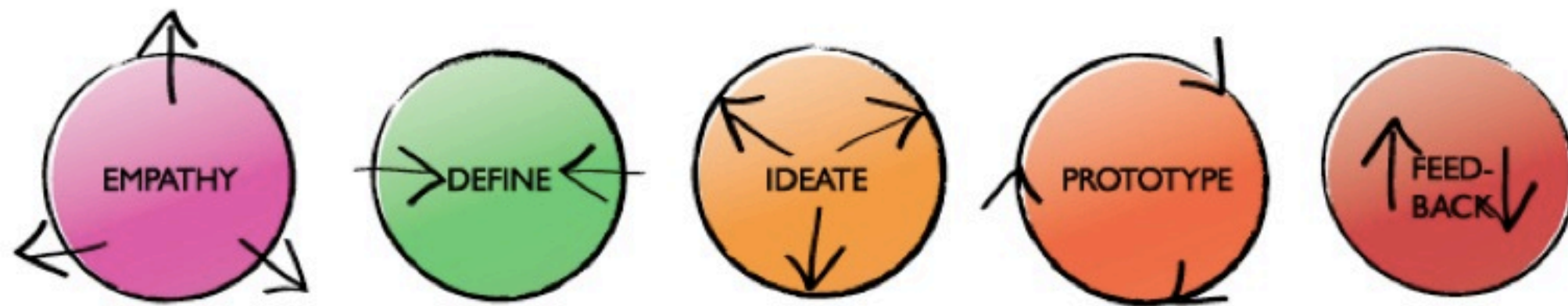


THEY DESIGN  
SOLUTIONS  
FOR  
ONE PERSON.

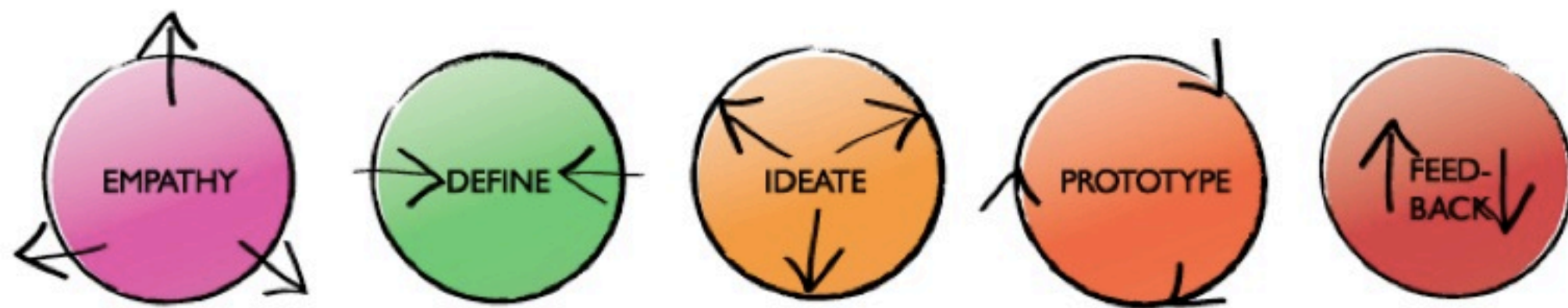
THAT PERSON  
IS CALLED  
THE USER.

Design thinkers are PEOPLE-CENTERED PROBLEM SOLVERS.

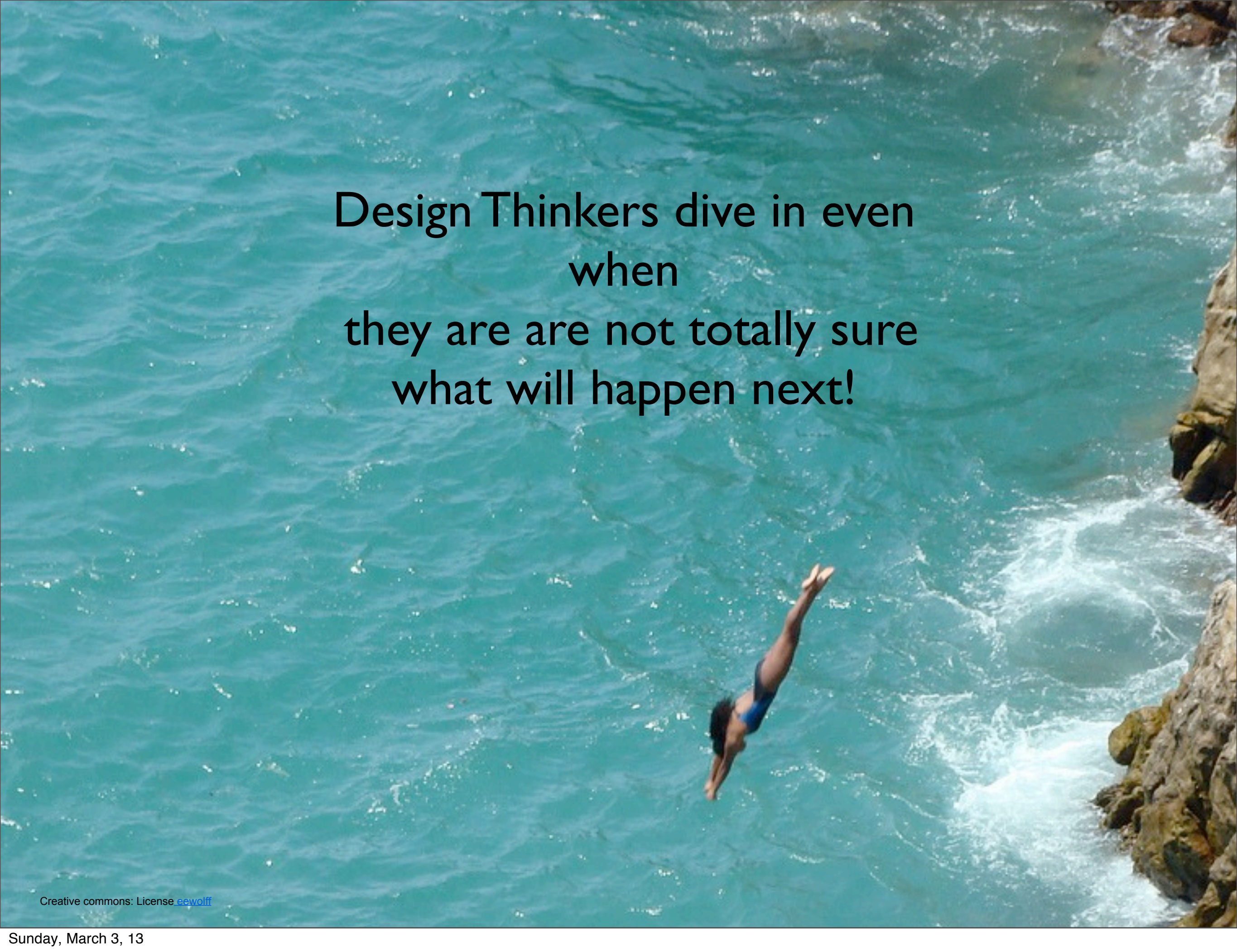
## Design Thinking Process



# Design Thinking Process





A high-angle photograph of a person diving into a body of turquoise water. The person is in mid-air, body horizontal, with arms and legs extended. To the right, a rocky cliff edge is visible with white foam from waves crashing against it. The water is a vibrant blue-green color with visible ripples and small waves.

Design Thinkers dive in even  
when  
they are not totally sure  
what will happen next!



# A school in Georgia used design thinking to solve a problem...



<http://vimeo.com/35233751>

# Design thinkers

are

PEOPLE-CENTERED

PROBLEM SOLVERS.

You are going to learn the

# DESIGN THINKING PROCESS



so you can become

PEOPLE-CENTERED  
PROBLEM SOLVERS.

The way you learn the design thinking process  
is by diving into a  
**DESIGN CHALLENGE.**

Your **DESIGN CHALLENGE** is...



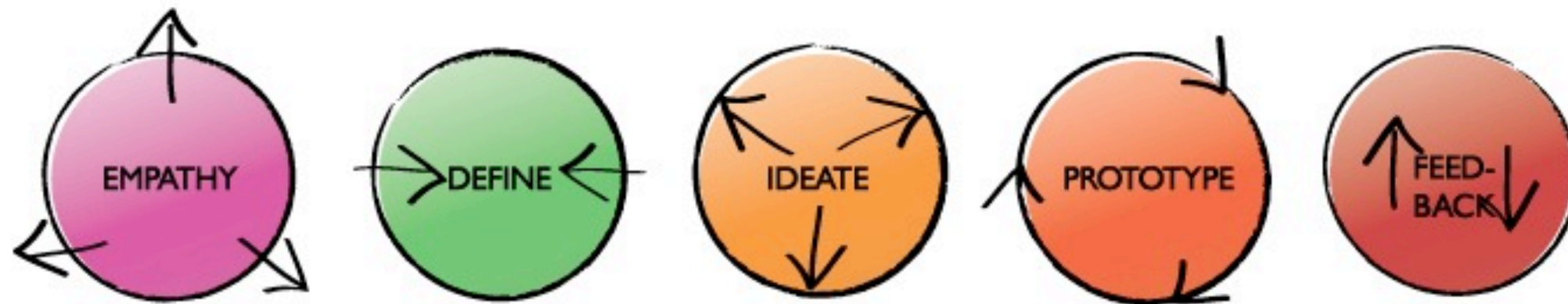
A large, clear glass pitcher with a handle, partially filled with water, set against a background of green foliage. The pitcher is the central focus, with its handle on the left and its spout on the right. The water inside is clear, and the glass reflects the surrounding greenery. The background is a dense thicket of green leaves and branches, creating a natural, outdoor setting.

# Redesigning Water Conservation AT HOME

Sunday, March 3, 13



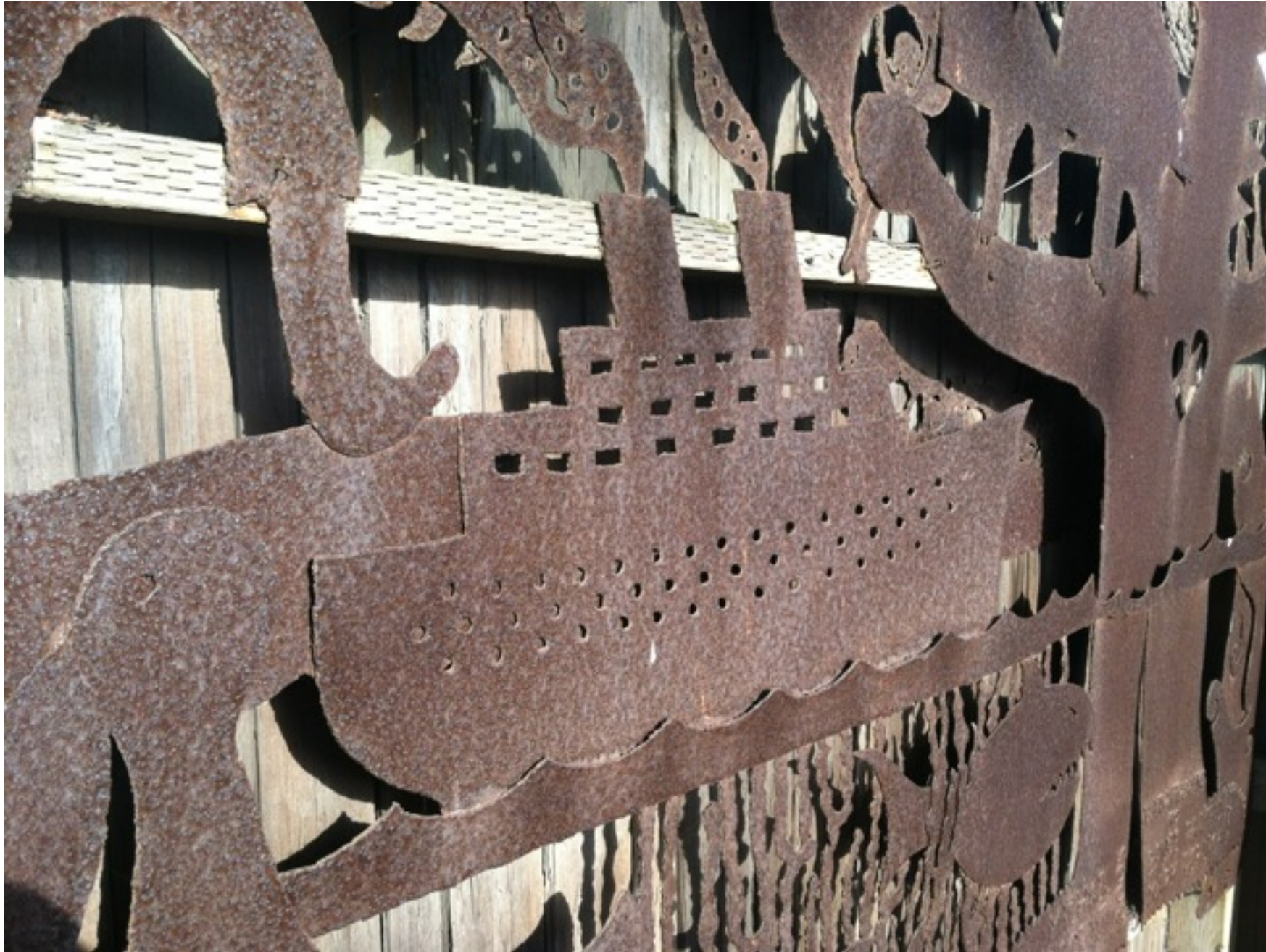
# Empathy





First, you learn a little about the  
problem space, in this case,  
water....

You will be doing LOTS of water  
activities that will help you solve  
this design challenge.



As you watch the water videos, take brief notes and make sketches about your reactions and responses.





# Water Around Us

<http://www.youtube.com/watch?v=HW5eBfZhE4M>



# Planet Earth

<http://www.youtube.com/watch?v=9n2yGQsX2vl&feature=related>







<http://www.youtube.com/watch?v=4MDLpVHY8LE>

## Water Conservation Tips



A hand-drawn cartoon of a purple alien with three green spots on a pink background. The alien has a large, irregular purple body with three green spots. The spots are located at the top left, top right, and bottom right. The alien is drawn with thick black outlines. The background is a solid pink color. The drawing is set against a dark wooden door frame.

You can't solve the problem of water  
conservation  
at home for every single person in the universe.



A hand-drawn cartoon face on a pink background. The face is drawn with a thick black outline. It has three green spots: one on the left side, one on the right side, and one on the forehead. The text is written in white on the face.

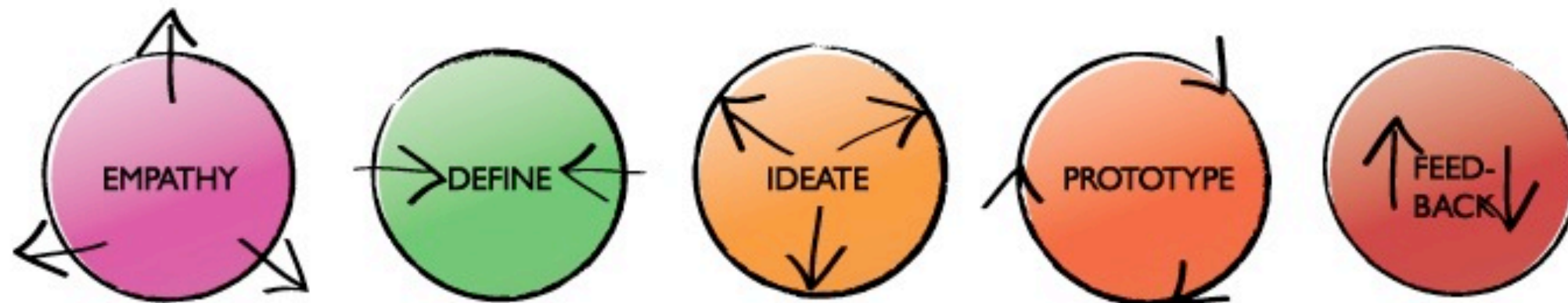
But you can solve it for

ONE person:

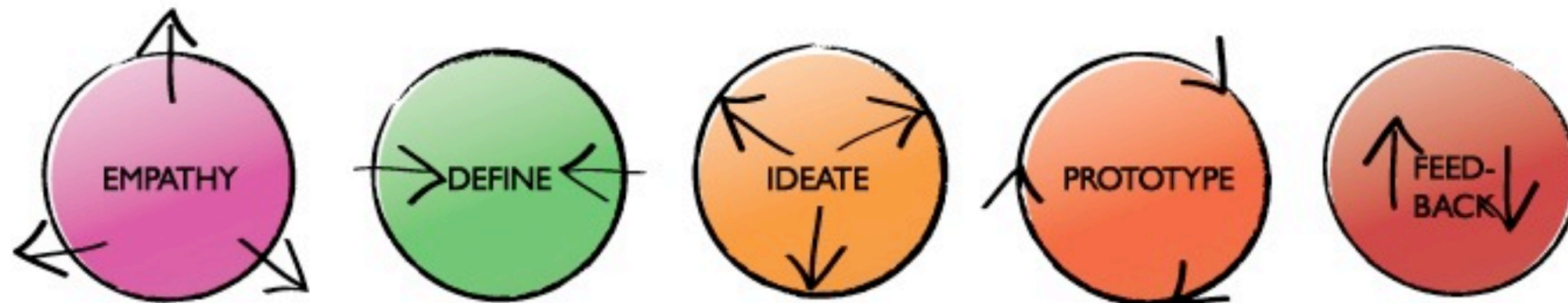
YOUR USER.



# Empathy



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To solve your design challenge,  
**REDESIGNING WATER  
CONSERVATION AT HOME,**  
you need to learn about your  
user by observation and  
interviewing.

WHY???



TO  
BUILD EMPATHY FOR  
YOUR USER.

THAT is an important  
part of becoming  
a people-centered problem solver-

**A DESIGN THINKER.**



Your goal is to develop empathy for  
your user,  
which means putting yourself in  
their shoes.

You did this when you built your  
**MEMORY BOXES.**

# What is Empathy?





Empathy is NOT

~feeling sorry for someone

~a sense that you have had  
a similar feeling

~being compassionate





A close-up photograph of a wave crashing, with white foam and blue water. The wave is breaking from left to right, creating a large, turbulent mass of white foam. The water is a deep blue color, and the sky is not visible. The text "Empathy means..." is overlaid on the left side of the image.

Empathy means...





looking closely....

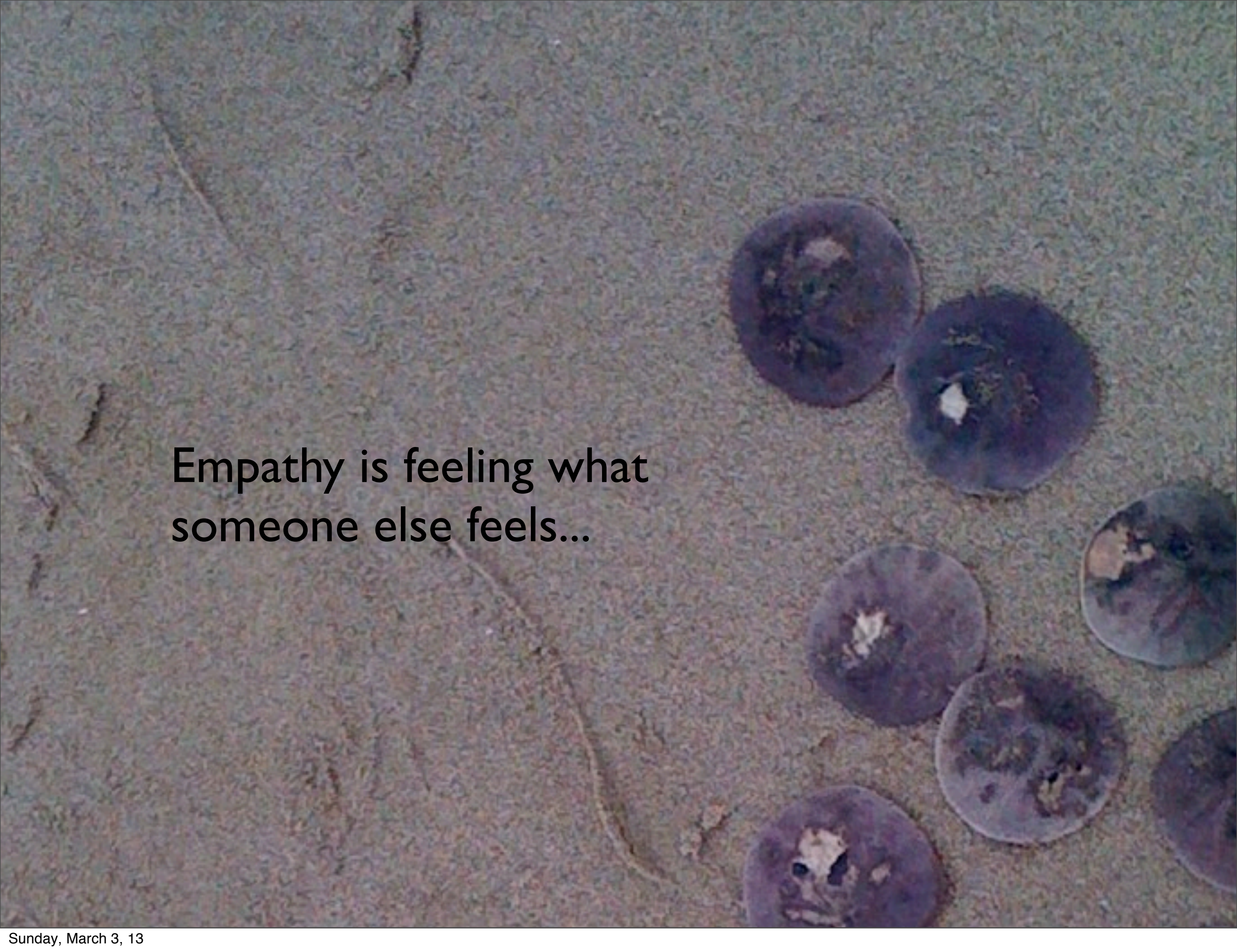


and listening closely.

and sensing connections that need no words.







Empathy is feeling what  
someone else feels...





and asking questions about  
what you **THINK** you see.



HOW do you develop  
EMPATHY?

**Your toolbox**





You have to become a GREAT observer!



Your have to observe with fresh eyes.



# How good an observer are you?

Source: <http://www.youtube.com/watch?v=ubNF9QNEQLA>



**Describe what you observe in the  
following pictures.**





Sunday, March 3, 13









Sunday, March 3, 13



Summing Up:

What makes a good observer?

# Design thinkers

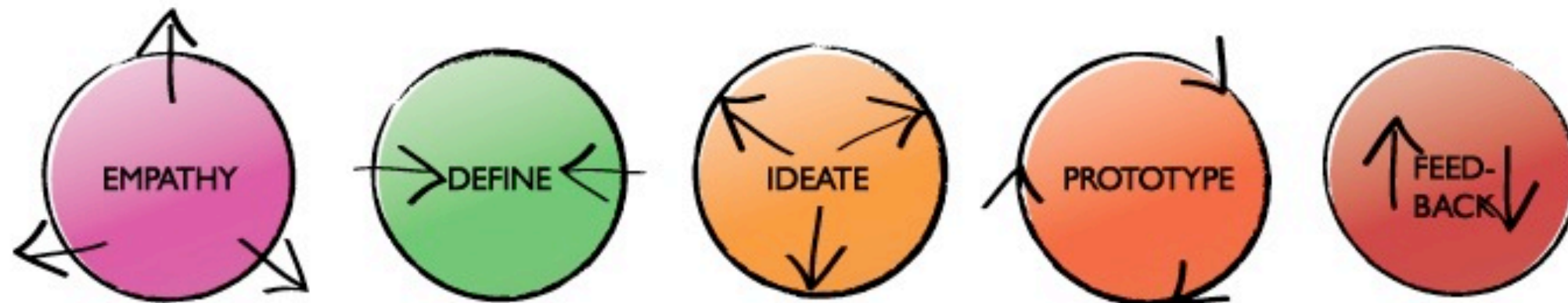
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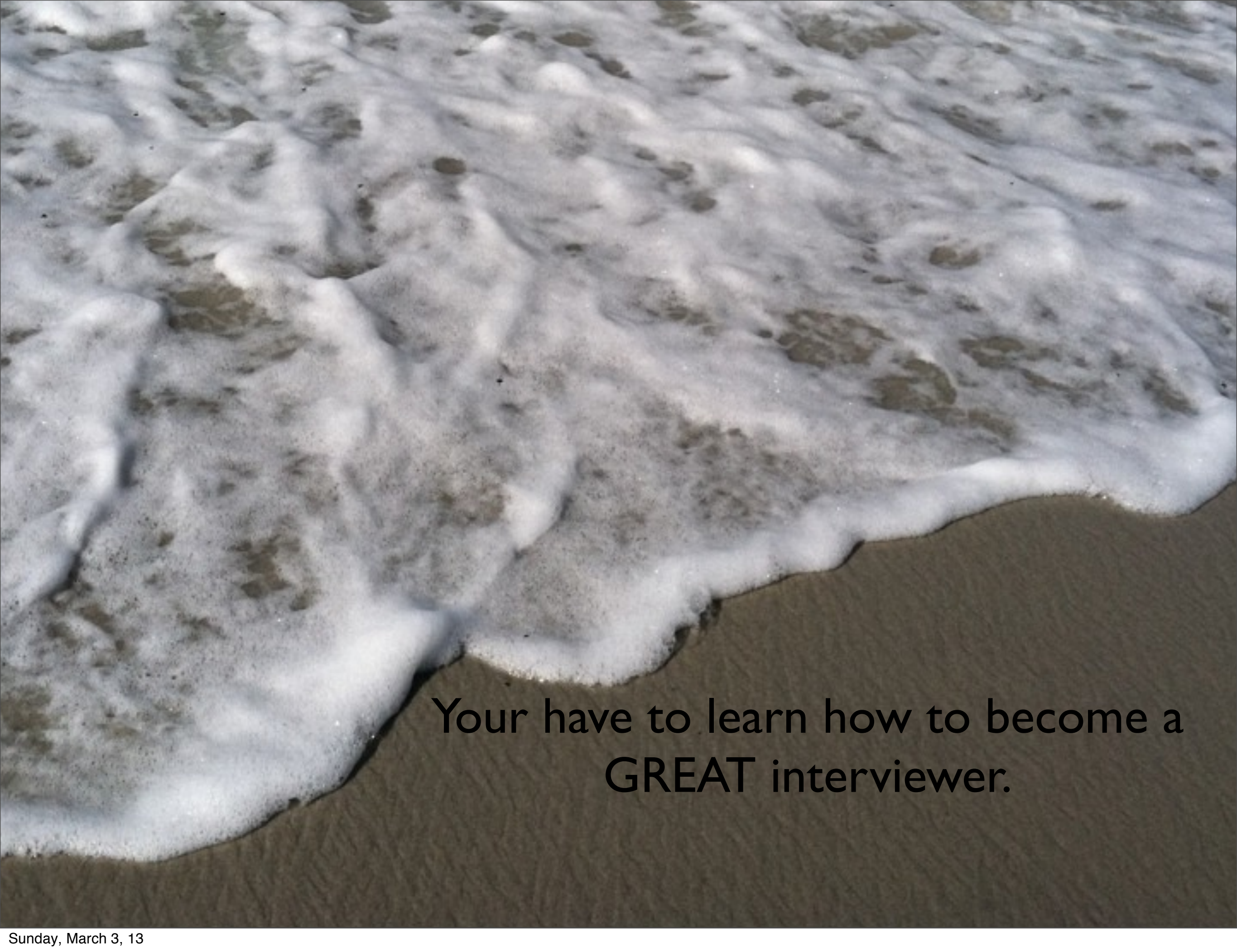
PEOPLE-CENTERED

PROBLEM SOLVERS.



# Empathy





Your have to learn how to become a  
**GREAT** interviewer.



You learned about interviewing in the good interviewing/bad interviewing activity.

What do you remember?

You are going to use what you learned now as you  
**INTERVIEW YOUR USERS.**

Let's practice by doing some

**ROLE PLAYING.**



## What Went Well

## What Could Be Improved

## Scenario I:

A new teacher who is being interviewed by a principal.

Max, a new math teacher, wants to get a job at a San Francisco middle school.

Ms. Robinson, the school principal, wants to make sure Max will do a good job because he has never taught middle school students before.



## What Went Well

## What Could Be Improved

## Scenario 2:

A high school student who is being interviewed by a mother looking for a summer babysitter.

Mrs. Garcia, wants to find someone to take care of her two sons, ages 5 and 7, for two days a week because she has a job in San Francisco. Her sons are very high energy and she really wants to find the right person for the job.

Kevin, a 16-year-old honors student, wants to make money during the summer to pay for his college tuition. He has three younger sisters and has done some babysitting for them. If he gets this job, it will be his first paying job.



## What Went Well

## What Could Be Improved

**Create your own scenario and conduct a role play!**



## What Went Well

## What Could Be Improved

Each team should come up  
with a list entitled:

“HOW TO BE A GREAT  
INTERVIEWER!”



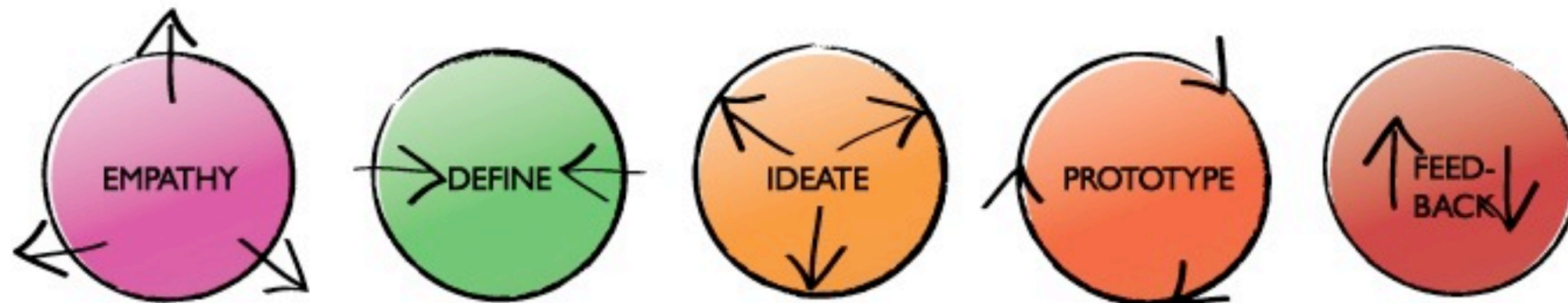
# GALLERY WALK DIRECTIONS

**EACH PERSON has 3 stars.**

**Walk around the room and read each  
group's list.**

**Draw a star on YOUR 3 FAVORITE  
IDEAS.**

# Empathy





Remember, when you interview you don't always need to know EXACTLY where you are going- just DIVE IN!



## It is time for INTERVIEWS.

As a team, decide on ROLES for the interview.

**Interviewers:** 2 people should conduct the interview. The interviewers are responsible for coming up with questions, building rapport with the interviewee, and keeping the flow of the interview going.

**Time Keeper:** 1 person should time the 15 minutes of interviewing and give a 5 minute warning before the time is up.

**Recorders:** The rest of the group should take notes and draw sketches during the interview. They should make sure to capture **exact** quotes of what the interviewee is saying.



Here's some questions to get you started:

1. Tell me about how you use water when you are getting ready for school.

2. Tell me about how you and your family use water when you get home from school and on the weekend. Think of specific examples or stories that happened this week.

3. Tell me where you get your water (sink, bottles, etc.)

4. Why do you think people care about water conservation? What do YOU think about it?

# START YOUR INTERVIEWS!

Remember:

Go for stories!

Ask open-ended questions.

Ask why.



Art by Brandon Teris

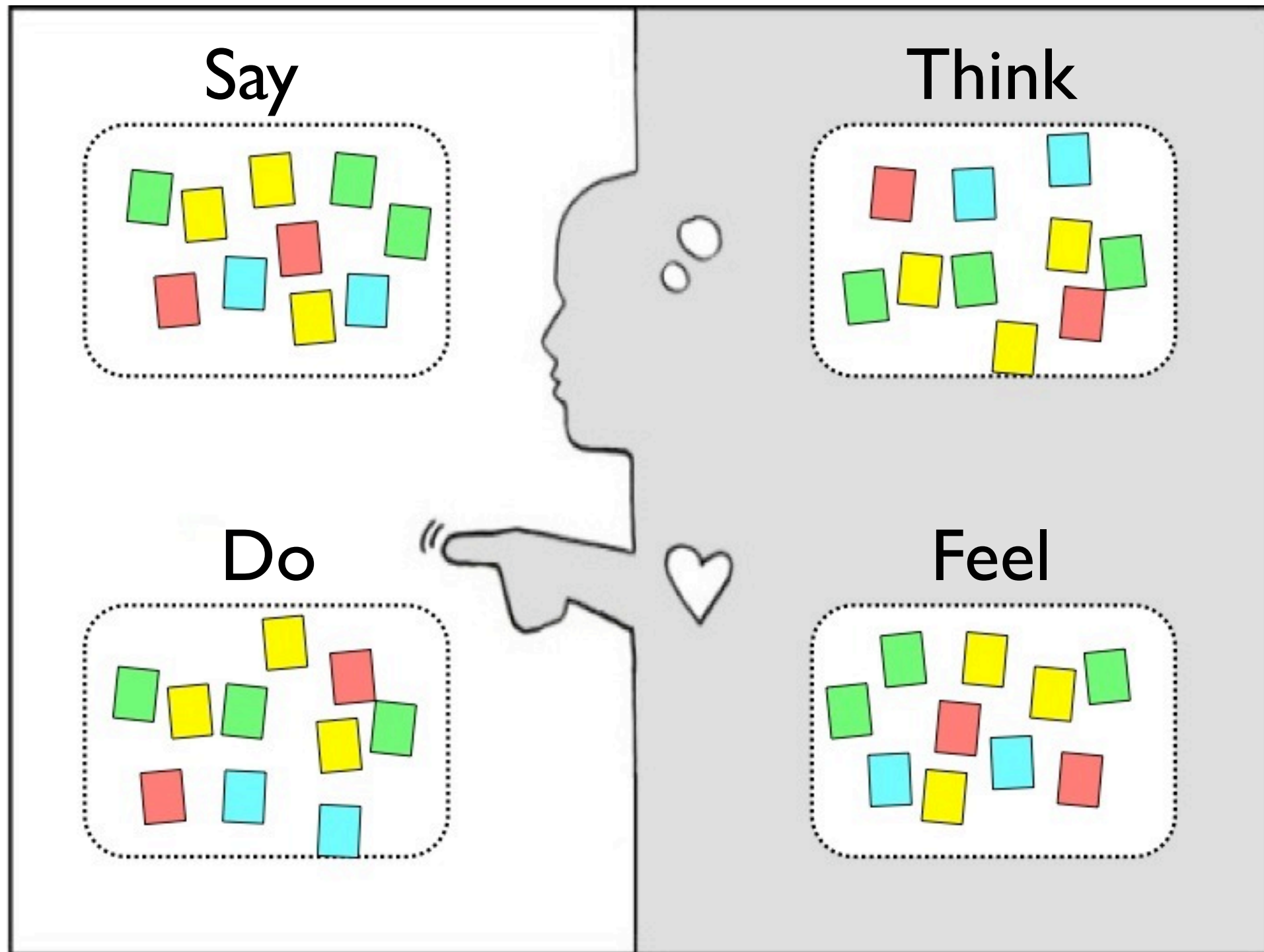
You have 15 minutes to complete your interview.



# WHAT DO YOU DO WITH YOUR INTERVIEW DATA?

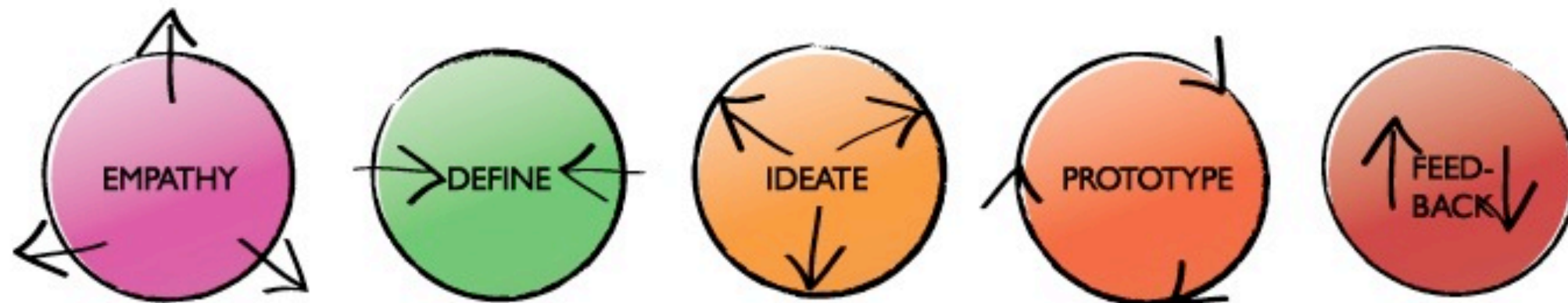


# Construct an Empathy Map

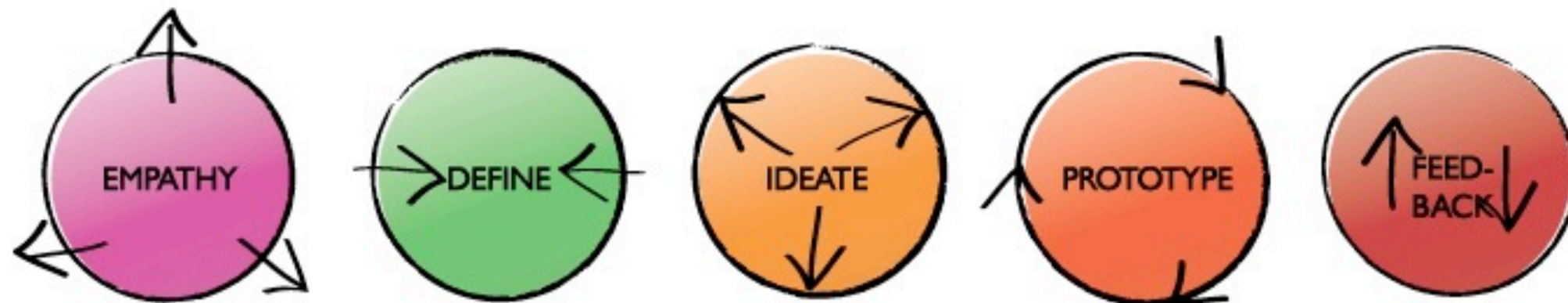




# Define



# Define





# WHAT DO YOU DO WITH YOUR INTERVIEW DATA?

**Create a Point of View Statement.**

# POINT OF VIEW STATEMENT

\_\_\_\_\_ needs a way to \_\_\_\_\_  
(User name) (Verb)

because \_\_\_\_\_  
(Surprising Insight)



# Neema: New Teacher



Source: flickr-303144538-hd.jpg

<http://www.youtube.com/watch?v=ewlHN9SGuv0>  
(0:47-1:18)



Shanda: First Year Teacher

<http://www.youtube.com/watch?v=kcfD0GDKYiA&feature=related>

(0:27-1:22)



# Design thinkers

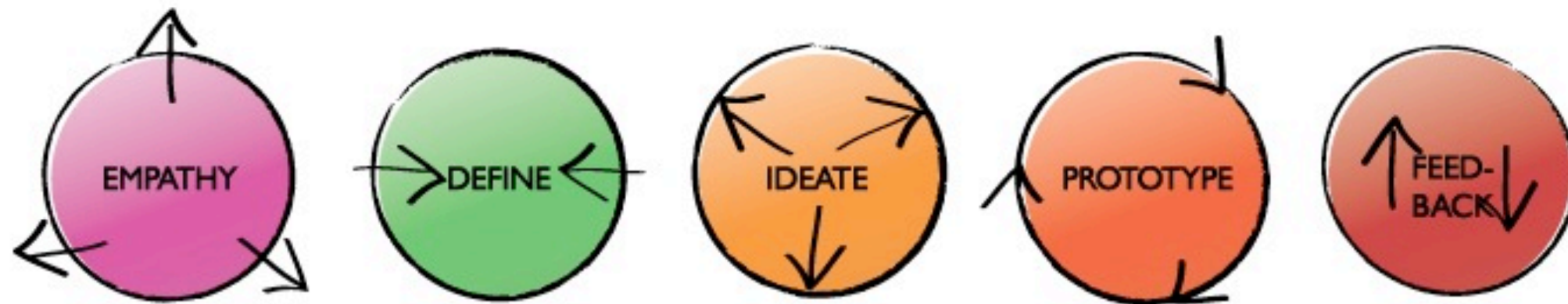
are

PEOPLE-CENTERED

PROBLEM SOLVERS.



# Ideate



# BRAINSTORMING MINDSETS

# Build on the ideas of your team!





Go for wild ideas!



Don't judge other's ideas... or your own!





Go for quantity!

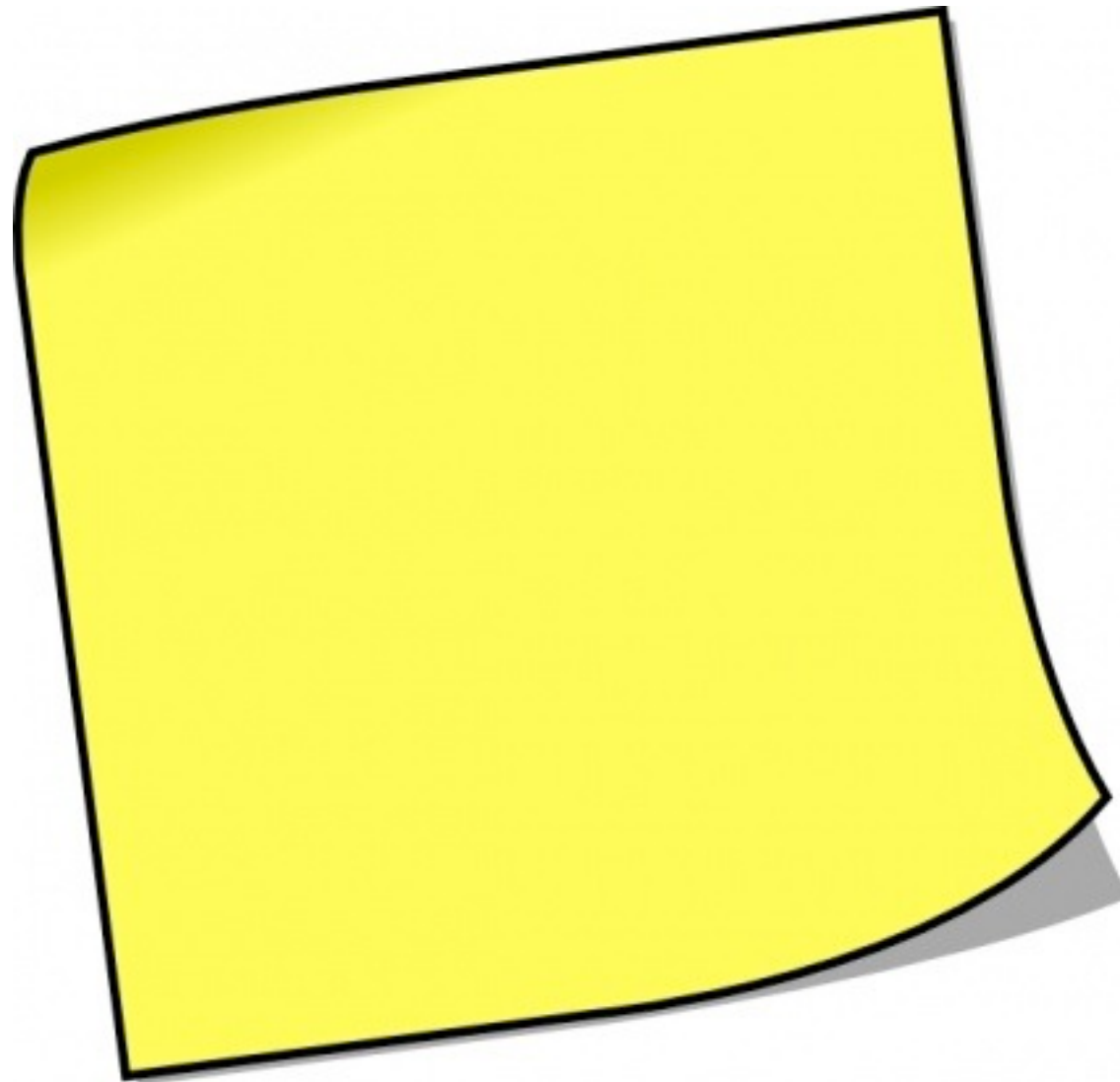




Listen to others:  
only 1 person talks at a time!



Keep your idea short-  
it has to fit on a post-it note!



Source: <http://wwwcdn.net/ev/assets/images/vectors/afbig/blank-sticky-note-clip-art.jpg>



# Capture **EVERY SINGLE IDEA!**



# HOW MIGHT WE?s

Neema, a nervous first year teacher, needs a way to feel confident, because he wants to do a good job as a new teacher.

**How might we help Neema feel confident?**

Neema needs a way to remember his lessons, because he gets confused when everyone is staring at him.

**How might we help Neema remember his lessons?**

Shanda, a new teacher, needs a way to make her students enjoy learning because she wants them to have as much fun as she did when she was a student.

**How might we help Shanda find a way to make learning fun for her students?**

Shanda needs a way to feel prepared for her first day of teaching because she is nervous about having her first class of students.

**How might we help Shanda feel better prepared for her first day?**

# HOW TO BRAINSTORM

1. Say your idea.

2. Write your idea on a post it note.

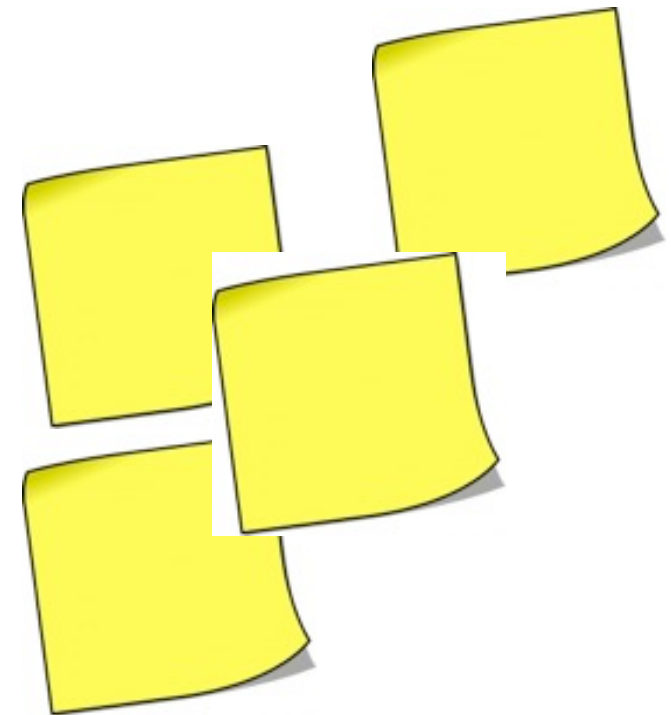
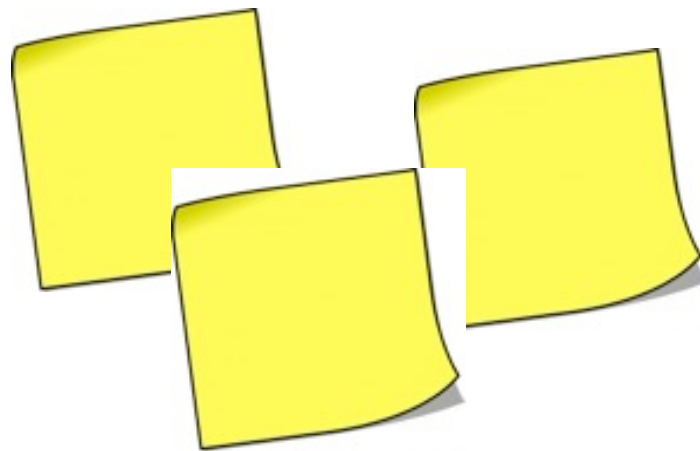
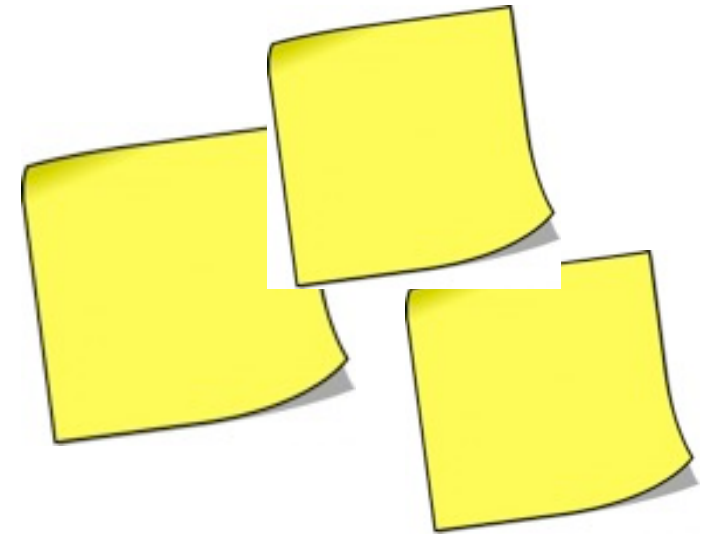
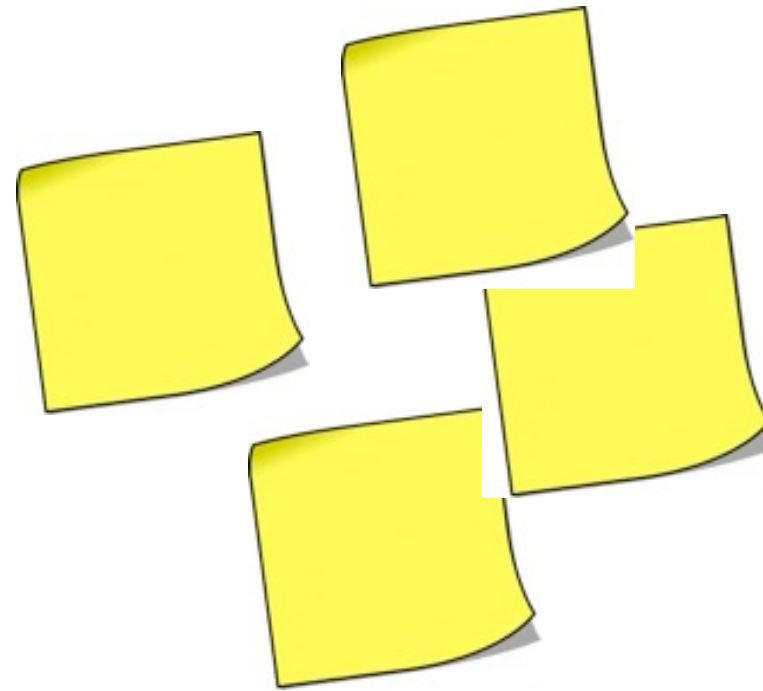
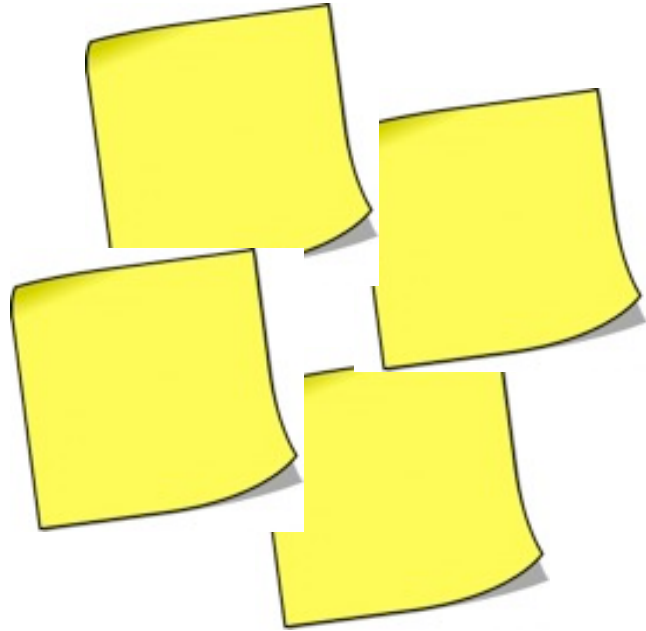
3. Stick it on a wall.



# Idea Clustering



Rearrange your post-it  
notes into clusters by  
themes.



# Idea Selection

Place a check mark  
next to your 3  
favorite ideas.



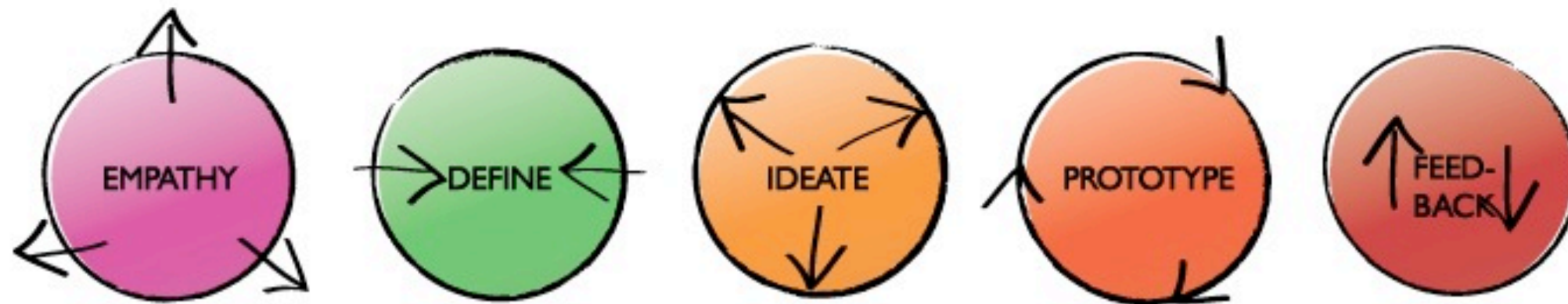


# Idea Sharing



Share your group's top 3 ideas.

# Prototype



# The Marshmallow Challenge

Your goal is to build the tallest free-standing structure with the materials provided.

20 sticks of spaghetti, one yard of tape, one yard of string, and one marshmallow.





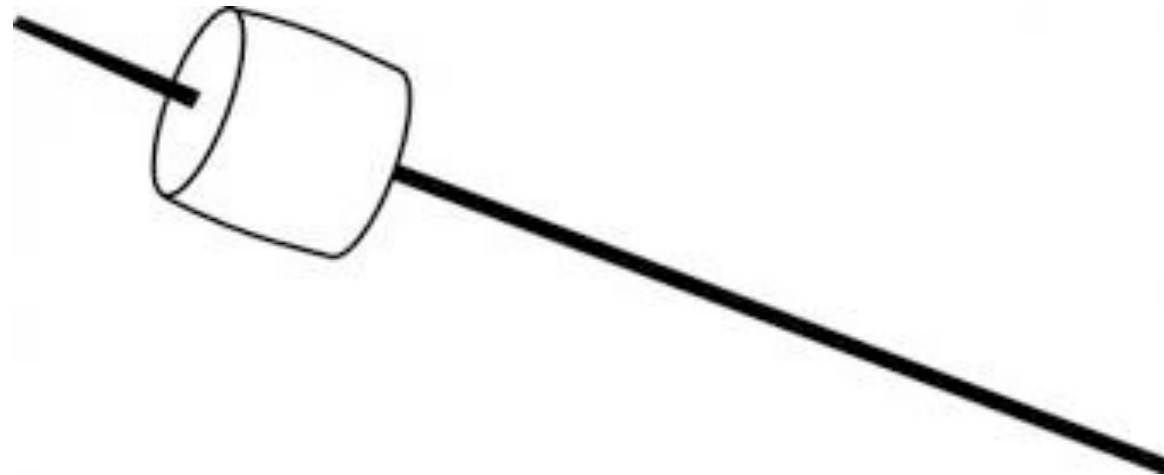
# The Marshmallow Challenge Rules

The entire marshmallow needs to be on top.

Use as much or as little of the kit as you want.

You may break up the spaghetti, string or tape.  
You have 18 minutes.

When time runs out, you cannot be touching  
or holding the structure.



# The Marshmallow Challenge

# One boy's prototyping story:

## Caine's Arcade





# A PROTOTYPE

... is NOT a model.

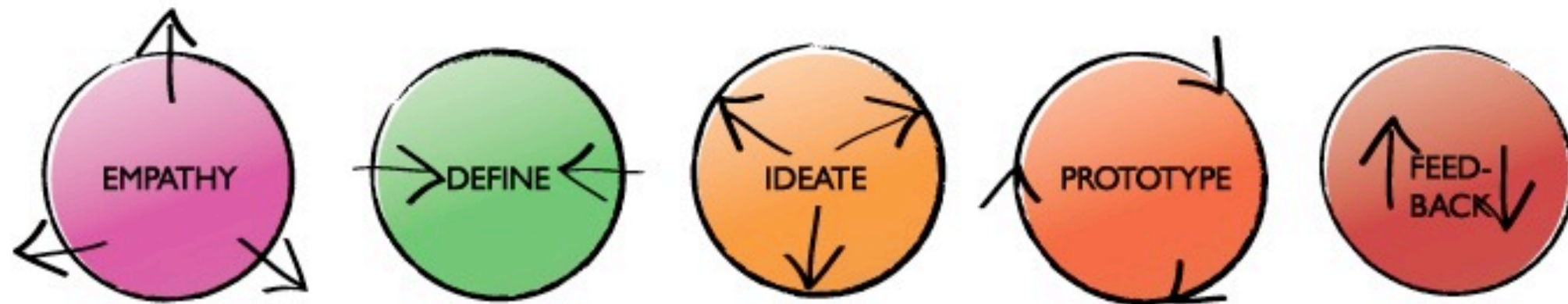
... does not have to LOOK or BE perfect.

...does have to give your user something to INTERACT with.

...does have to be something that gives your user an experience.

BUILD YOUR  
PROTOTYPES.

# Testing/Feedback





# Capture User Feedback

What worked?

What didn't?

What could be improved?

What would you do next?



A photograph showing a circular concrete drainage cover set into a heavily rusted metal surface. The cover has a central hole through which some debris is visible. Surrounding the cover are various pieces of trash, including dark plastic bags, banana peels, and other organic waste. A black text box is overlaid on the upper left portion of the image.

# Redesigning Water Conservation AT SCHOOL.



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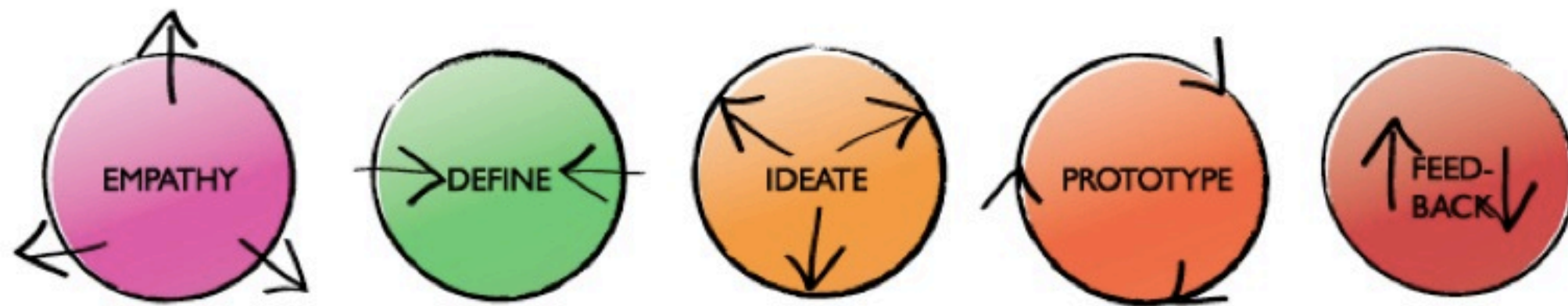
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PEOPLE-CENTERED

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Design thinkers are PEOPLE-CENTERED PROBLEM SOLVERS.

## Design Thinking Process





You are going to practice the  
**DESIGN THINKING PROCESS**  
so you can become more skilled  
**PEOPLE-CENTERED**  
**PROBLEM SOLVERS.**

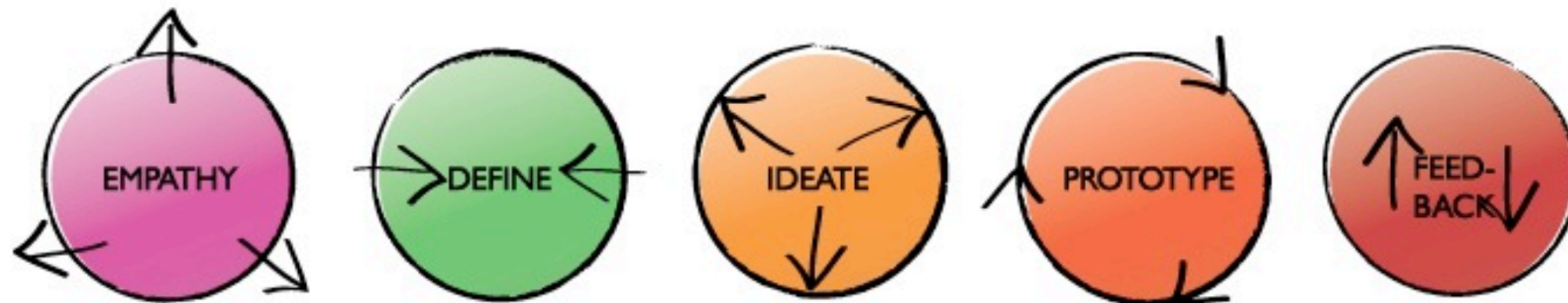
The way you learn the design thinking process  
is by diving into a

**DESIGN CHALLENGE.**

Your DESIGN CHALLENGE is...

Redesigning Water Conservation  
at  
School

# Empathy





First, you learn a little about the  
problem space, in this case,  
water....

You will be doing LOTS of water  
activities that will help you solve  
this design challenge.



As you watch the water videos, take brief notes and make sketches about your reactions and responses.





<http://www.youtube.com/watch?v=GOLf2RbxmzE>





<http://www.schooltube.com/video/a492b00a80509cbc4a40/>





<http://www.youtube.com/watch?v=Xz8sVG6GVWw>





<http://www.monkeysee.com/play/18518-garden-water-conservation>





CC licensed: Green Cross Int.

# Water Access

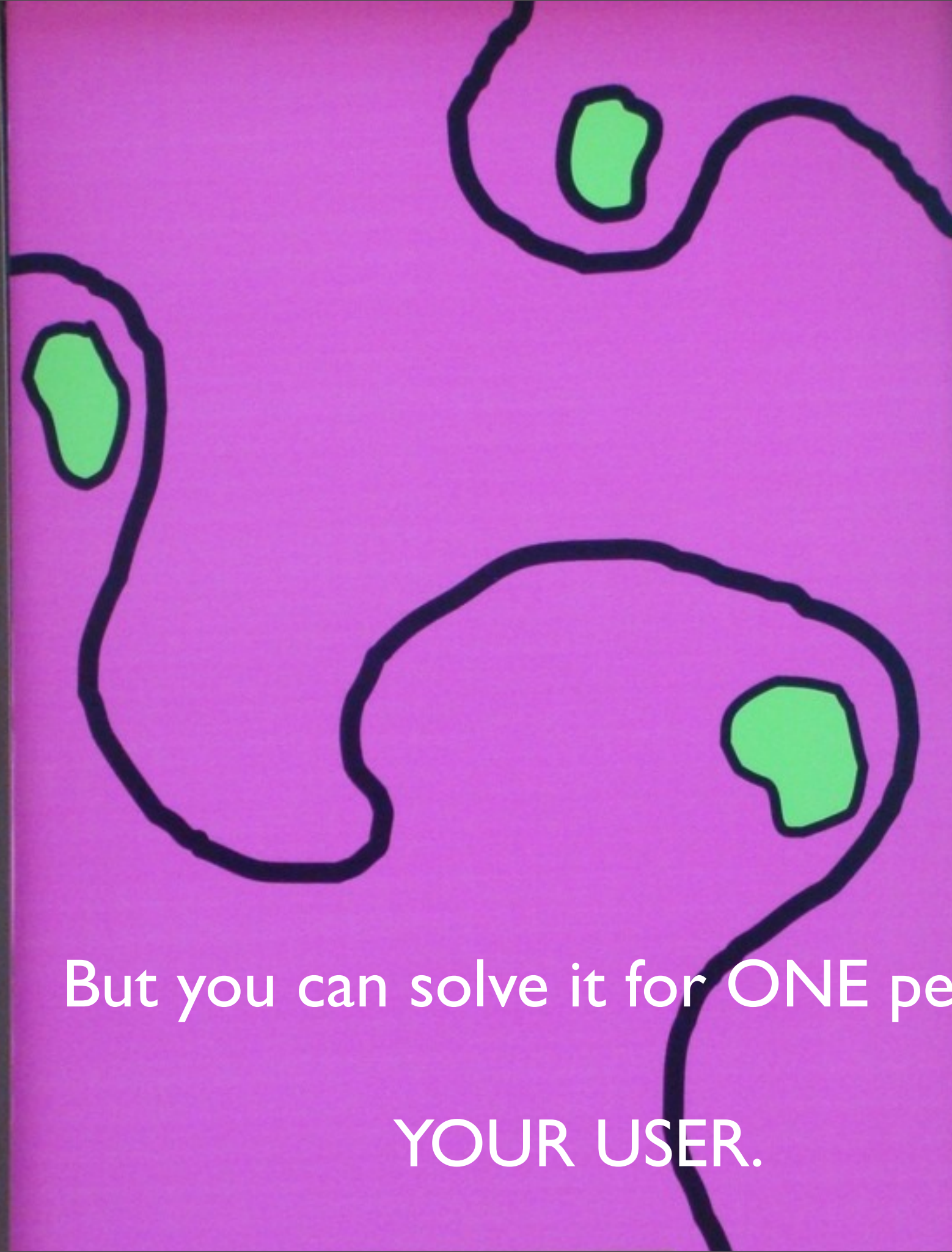
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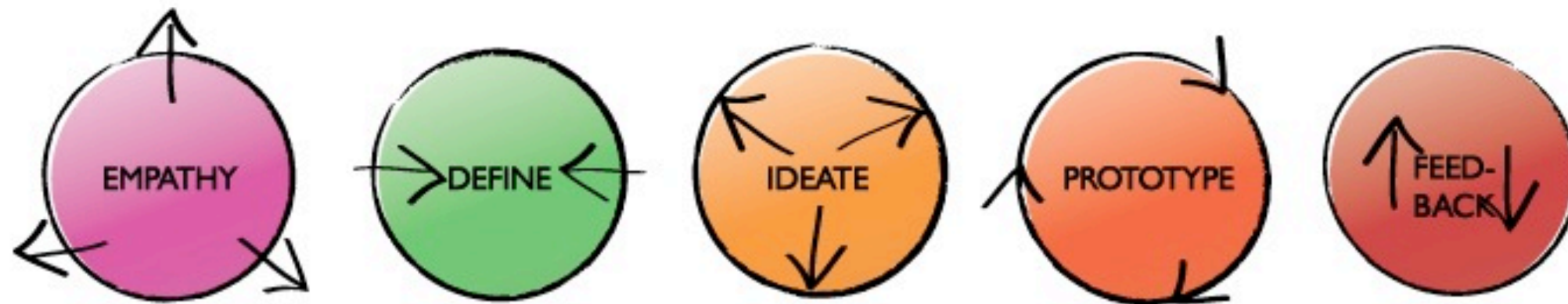
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To solve your design challenge,  
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you need to learn about your  
user by observation and  
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WHY???

TO  
BUILD EMPATHY FOR  
YOUR USER.

THAT is an important  
part of becoming  
a people-centered problem solver-  
**A DESIGN THINKER.**



Your goal is to develop empathy for  
your user,  
which means putting yourself in their  
shoes.

You did this when you built your  
**MEMORY BOXES.**

# What is Empathy?

HOW do you develop  
EMPATHY?



**Your toolbox**



You have to become a GREAT observer!

**Describe what you observe in the  
following pictures.**





Sunday, March 3, 13





Sunday, March 3, 13





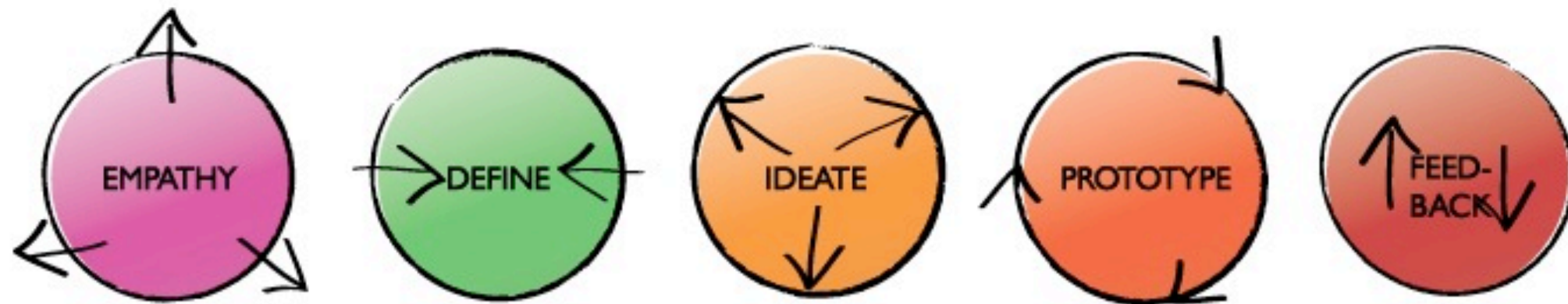
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Summing Up:

What makes a good observer?

# Empathy





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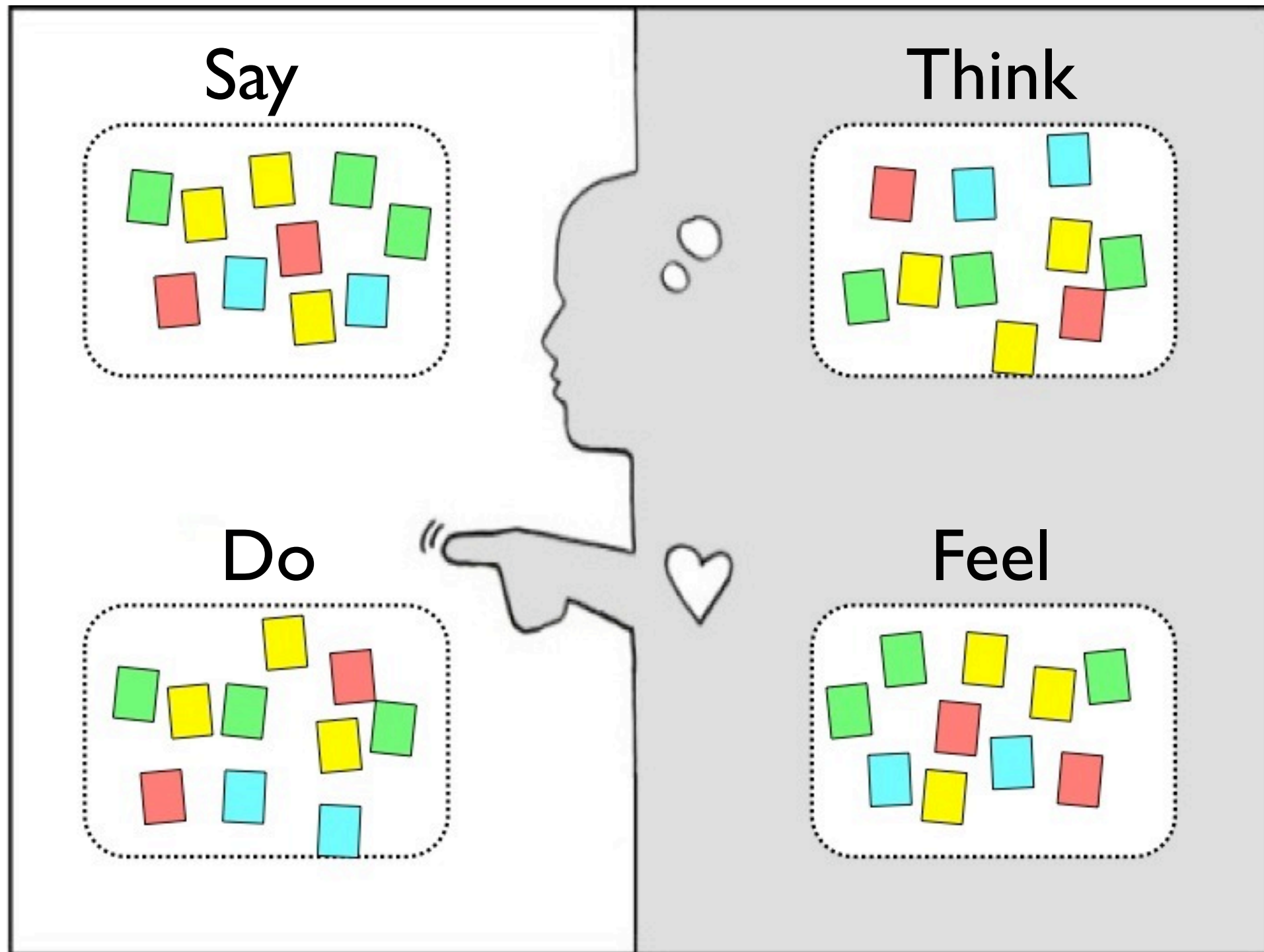
It is time to  
INTERVIEW  
YOUR USERS.

# WHAT DO YOU DO WITH YOUR INTERVIEW DATA?



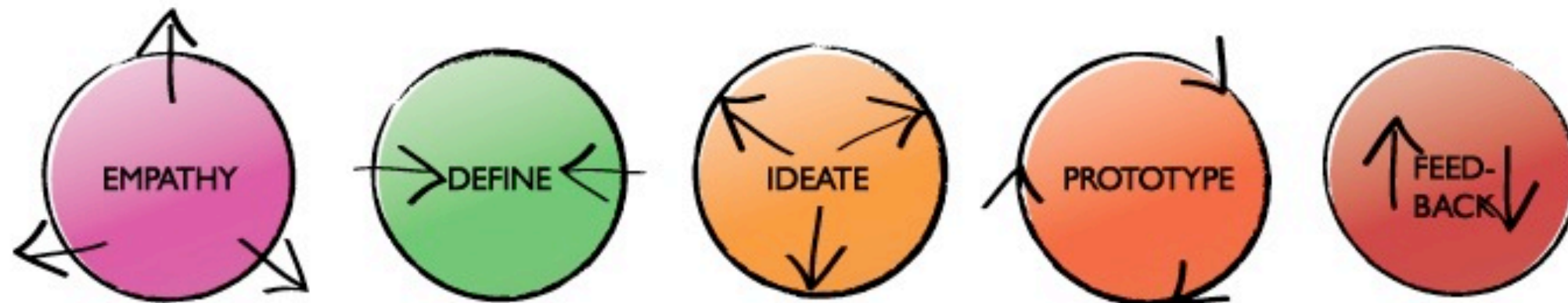


# Construct an Empathy Map





# Define



# WHAT DO YOU DO WITH YOUR INTERVIEW DATA?

**Create a Point of View Statement.**

# Point of View Statement

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(User name) (Verb)

because \_\_\_\_\_.  
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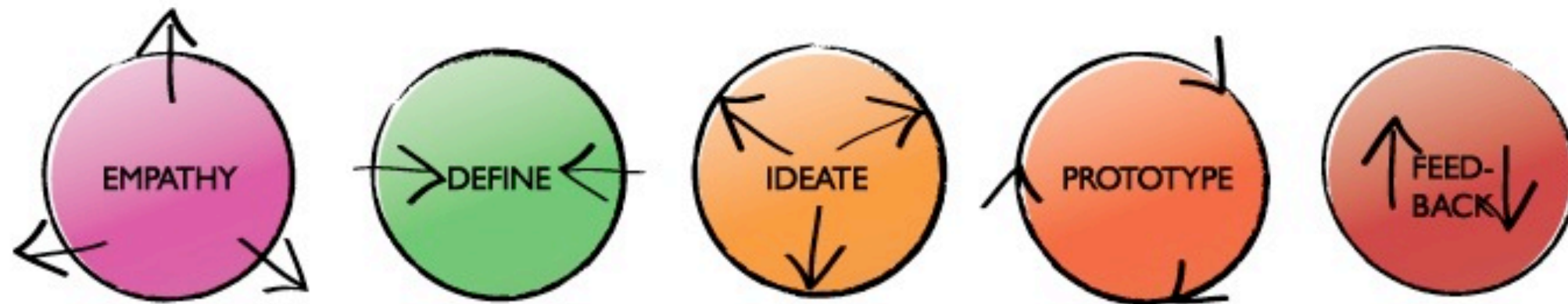
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# Ideate



# BRAINSTORMING MINDSETS



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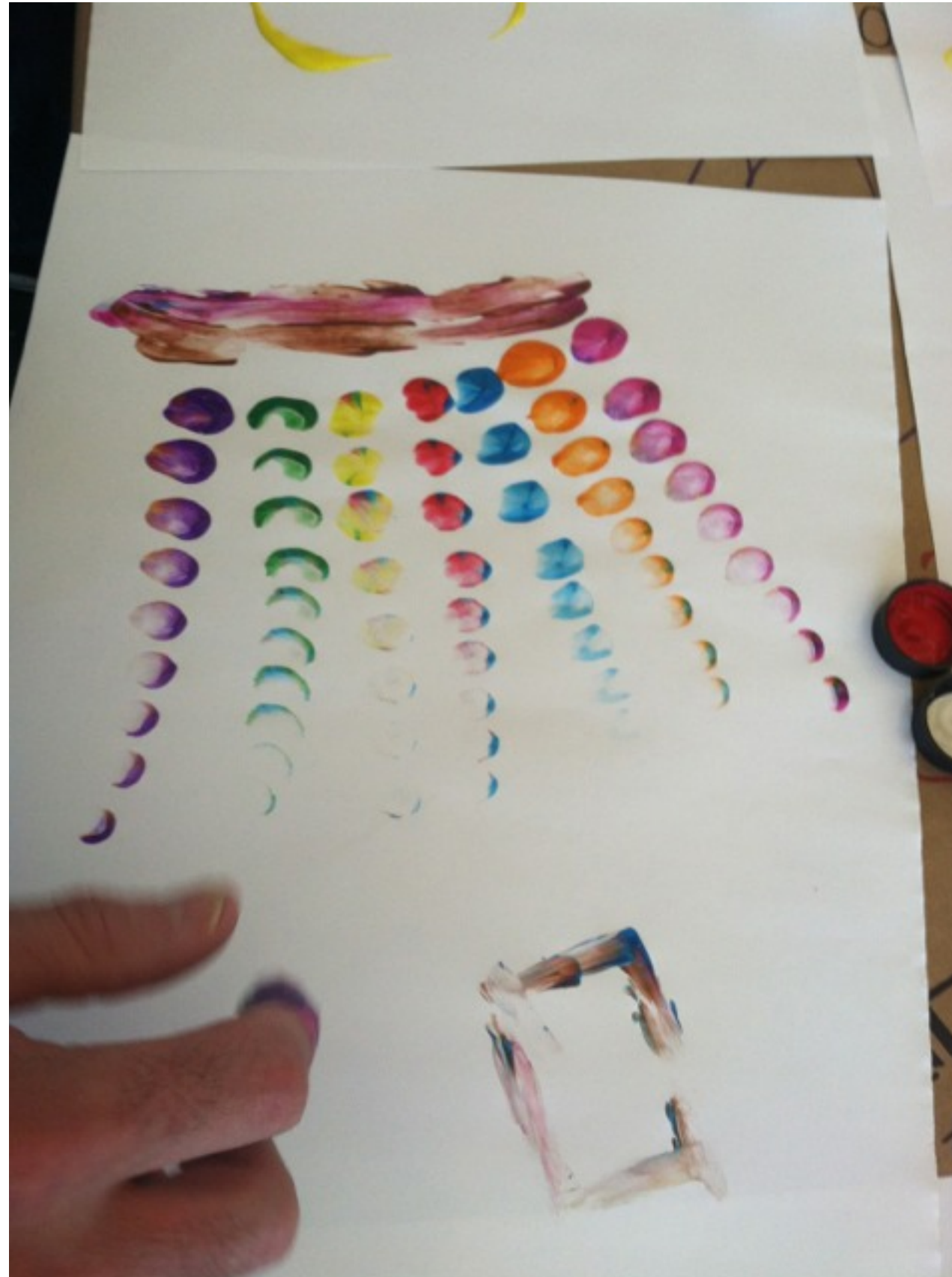


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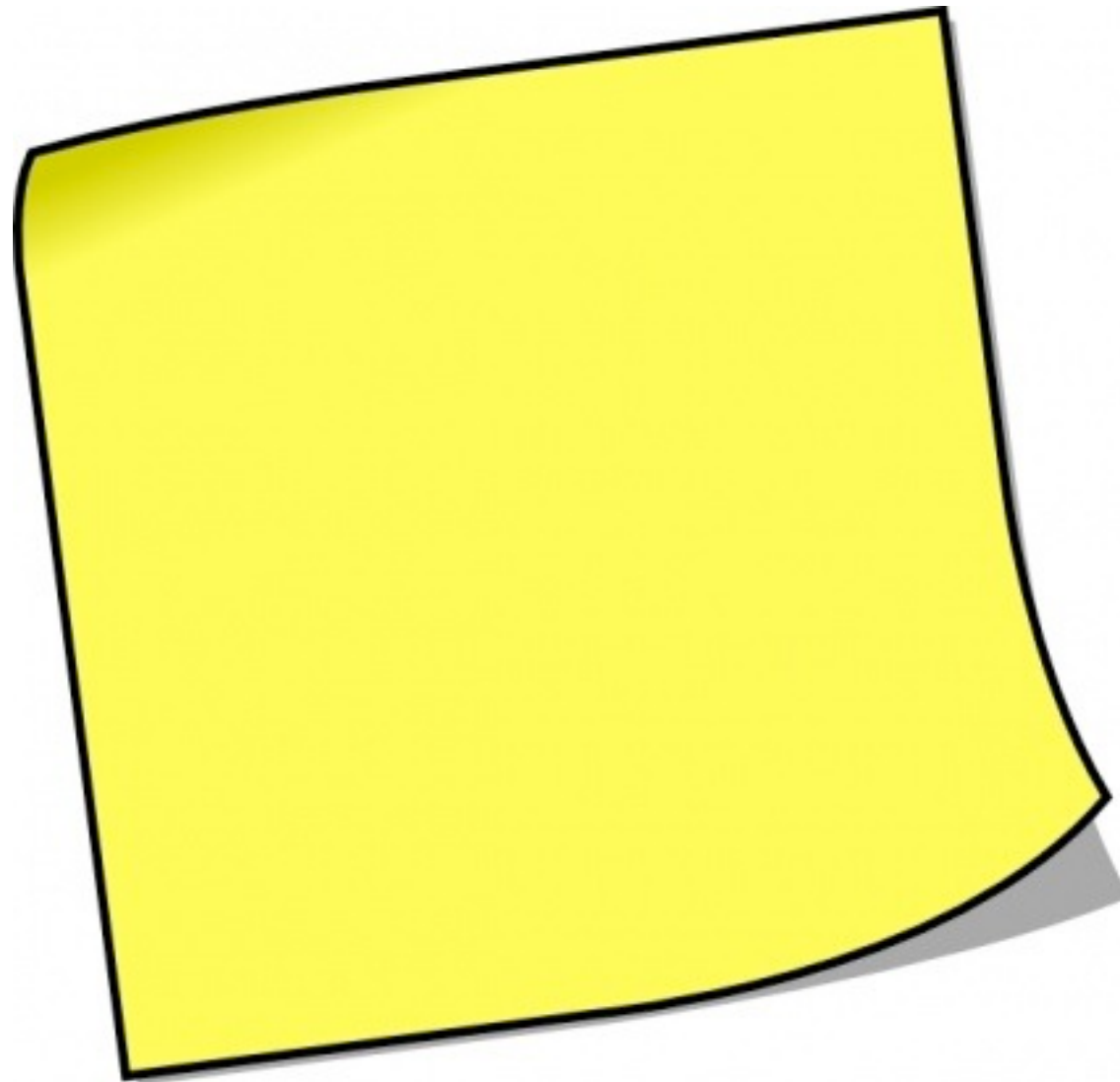




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Joanna, a new employee at Google, needs a way to confident when he is introduced to new people, because he is very shy.

How might we help Neema feel less nervous?

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# HOW MIGHT WE?s

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How might we help Joanna feel confident?

Jackson, a Starbucks employee, needs a way to talk to his customers and get their order finished at the same time, because when he doesn't say anything he feels that he is being rude.

How might we help Jackson get two things done at the same time?

Harper, a working mother, needs a way to remember her 4 children's after school activities, because she is very busy at work.

How might we help Harper remember her children's schedules?

Elena, a singer, needs a way to remember the lyrics to her song, because she gets nervous when she is performing.

How might we help Elena remember song lyrics?



# BRAINSTORMING REFRESHER

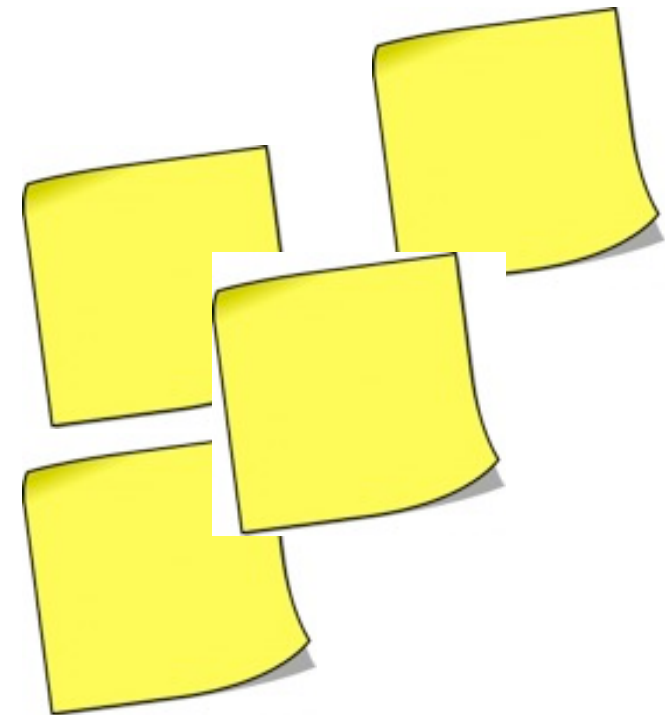
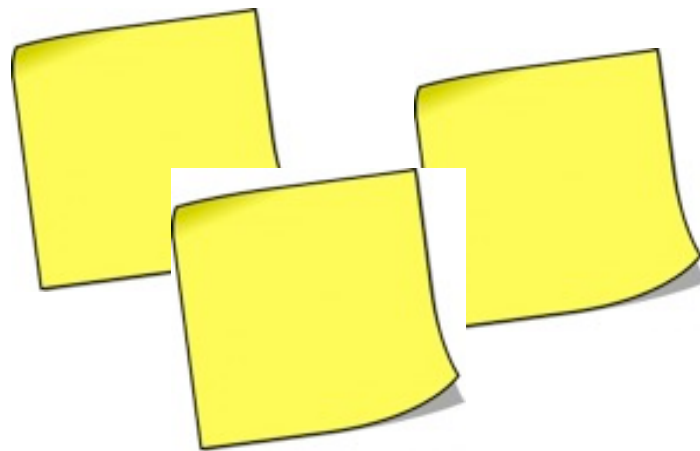
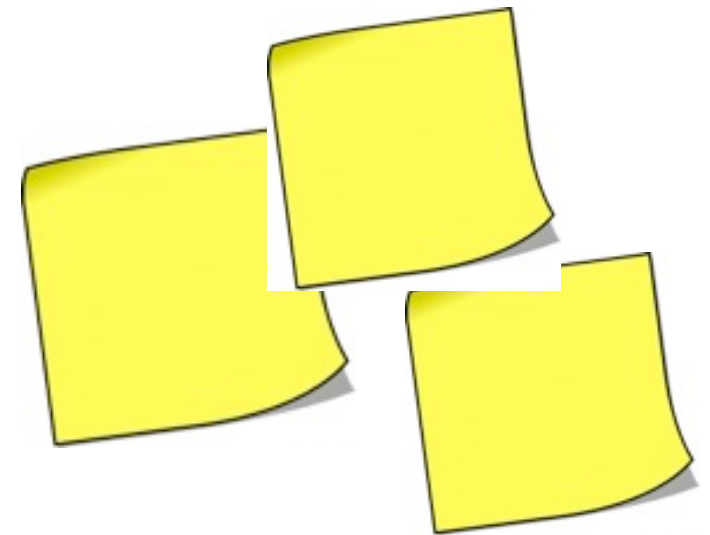
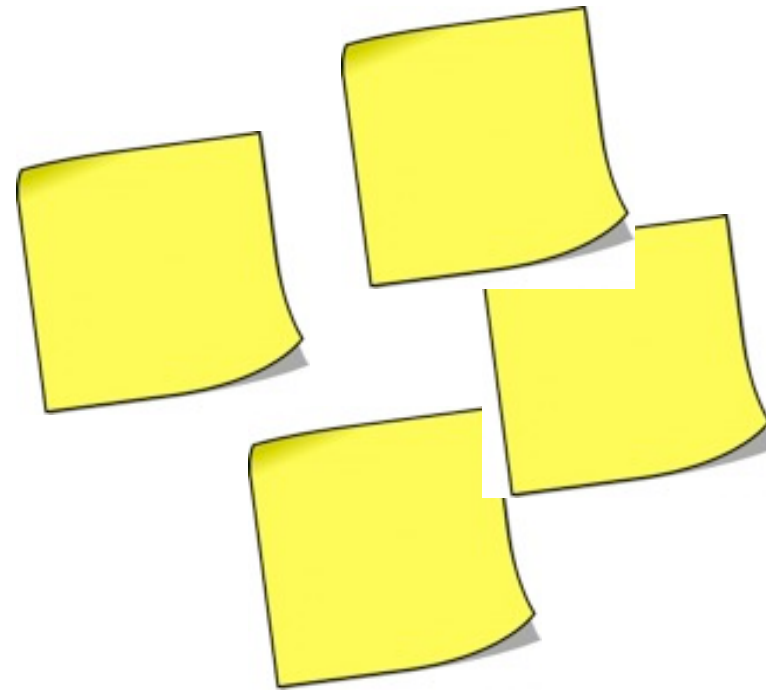
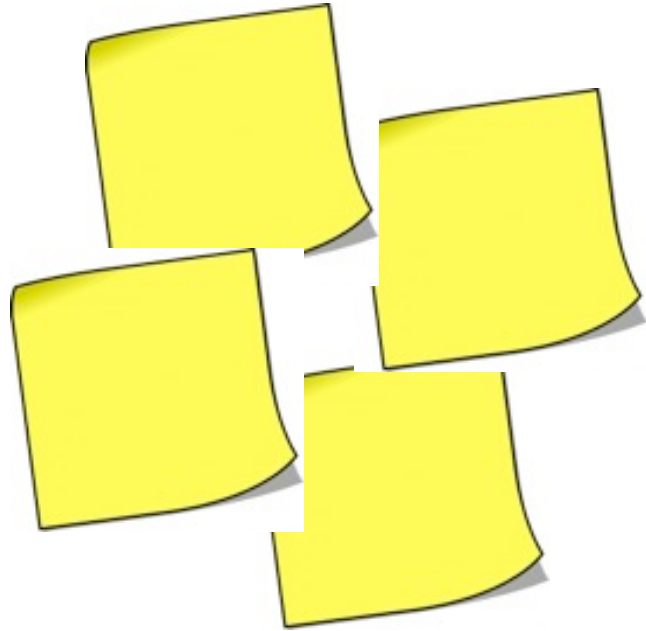
1. Say your idea.
2. Write your idea on a post it note.
3. Stick it on a wall.

# Idea Clustering



Source: [http://www.flickr.com/photos/fresh\\_squash/5595161871/sizes/z/in/photostream/](http://www.flickr.com/photos/fresh_squash/5595161871/sizes/z/in/photostream/)

# Rearrange your post-it notes into themes.





# Idea Selection

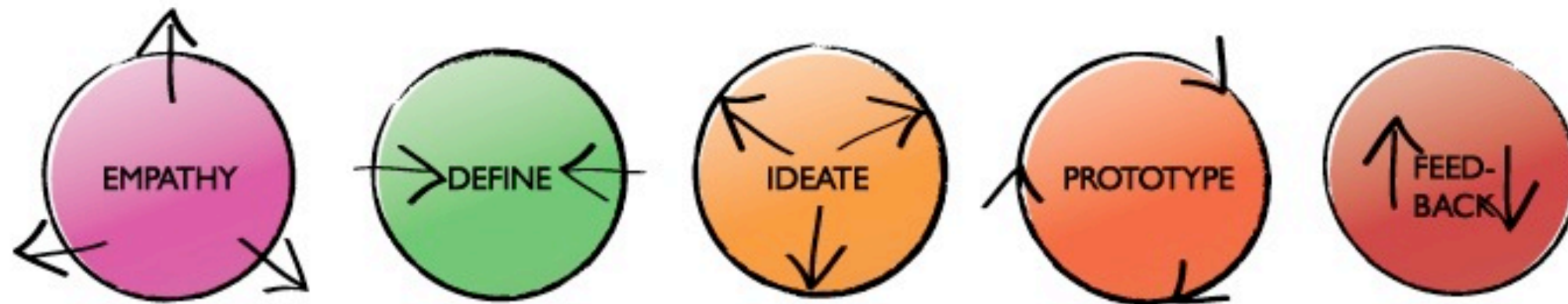
Place a check mark  
next to your 3  
favorite ideas.



As a team, choose your  
favorite idea to move  
forward to prototyping.



# Prototype





# A PROTOTYPE

... is NOT a model.

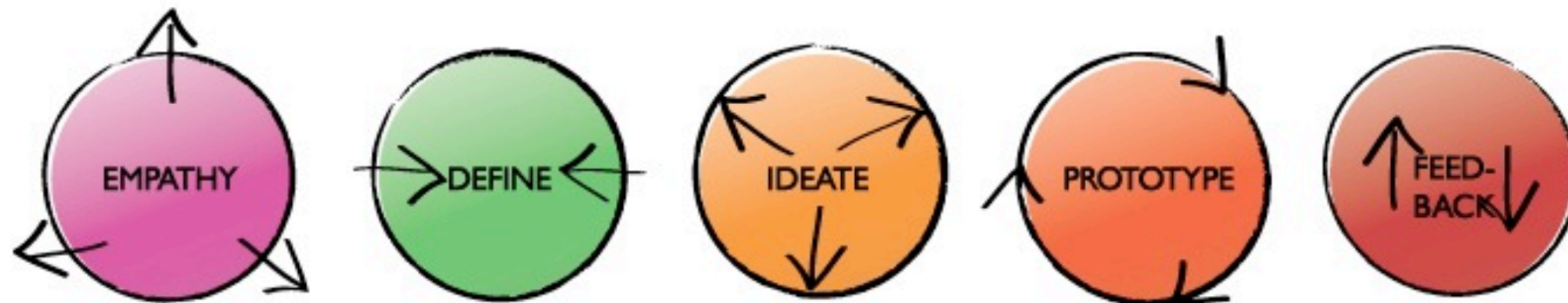
... does not have to LOOK of BE perfect.

...does have to give your user something to INTERACT with.

...does have to be something that gives your user an experience.

BUILD YOUR  
PROTOTYPES.

# Testing/Feedback





# Capture User Feedback

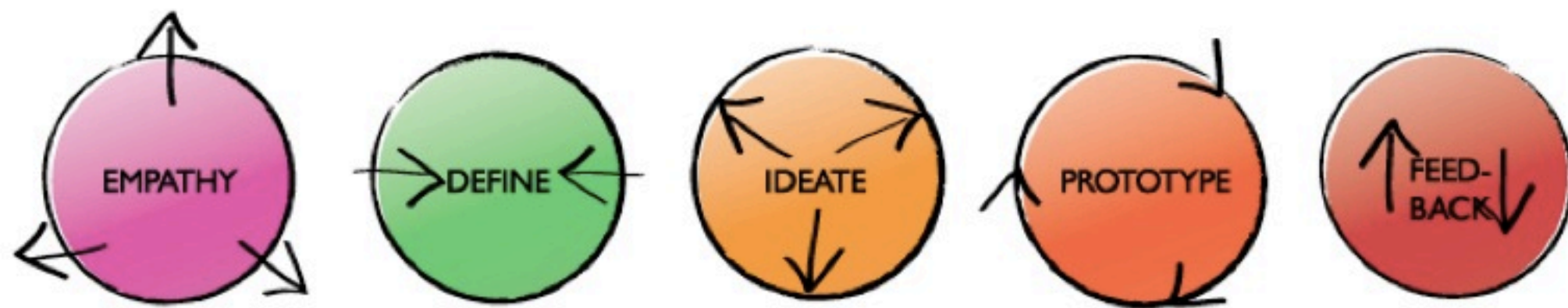
What worked?

What didn't?

What could be improved?

What would you do next?

# Design Thinking Process



Now you are design thinkers who will change  
the world...

