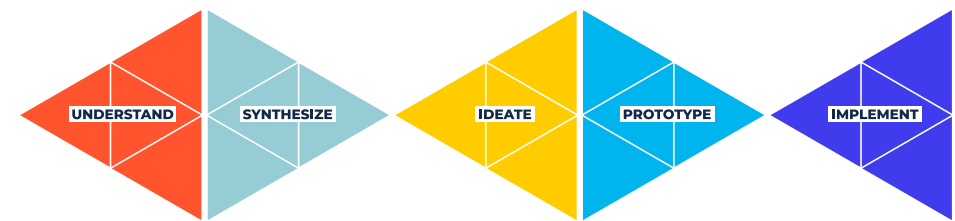
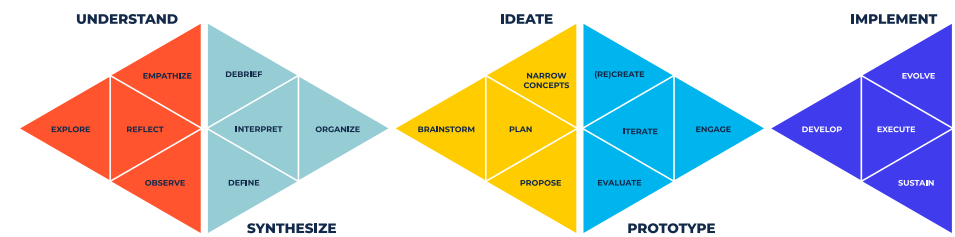


### The Human-Centered Design Taxonomy:



### HCD Taxonomy, including spaces and processes



## FRAMING THE PROBLEM & ROOT CAUSE ANALYSIS

UNDERSTAND



Start by identifying an area of focus you want to address. Then, try to understand the issue on a deeper level by tapping into the root cause of the problem. Once you've identified the initial problem, repeatedly ask "why" to get down to the root cause(s).

**What is the problem you're trying to solve?**

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**What is causing the problem to happen?**

1

Why?

2

Why?

3

Why?

4

Why?

5

**Root Cause Problem Statement:**

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## DOCUMENT YOUR ASSUMPTIONS AND BIASES



Before you begin your research, it's important to think through any assumptions or biases you may have regarding your (design) challenge. Take a moment to think through the following questions:



What are your initial reactions to the (design) challenge?

What are your initial assumptions and thoughts in relation to the (design) challenge?

What are your initial biases to the (design) challenge?



What aspect(s) of the (design) challenge are you interested in?



What aspect do you want to explore to an extreme?

Do you know of any existing interventions that you think can solve the challenge? If yes, how?

## 5 W+H QUESTIONS



The 5W+H questions help to gain a deeper understanding, new insights and information, and to holistically make sense of the situation and the issues. They offer a chance to dig deeper into the desires and opinions of the people involved. Try to answer as many of the questions suggested below.

### WHO?

Who is involved? | Who is affected by the situation | Who is the decision maker?

### WHERE?

Where does the problem occur? | Where was it resolved before? | Where did similar situations exist?

### WHAT?

What do we already know about the problem? | What would we like to know?  
What are the assumptions that should be scrutinized?

### WHY?

Why is the problem important? | Why does it occur? | Why was it not yet solved?

### WHEN?

When did the problem start? | When do we want to see results?

### HOW?

How could this problem be an opportunity? | How could it be solved?  
What has already been tried to resolve the problem?

## OBSERVE

Observe users and the surrounding environment of the spaces relevant to your design challenge and document your observations in the AEIOU (Activities, Environment, Interaction, Objects, Users) template below. This will help you learn more about the users and the environment they're in.

### A - Activities

What happens?  
What are the people doing?

### E - Environment

What does the environment look like?  
What is the nature and function of the space?

### I - Interactions

How do the users interact with each other?  
How does the operation work?

### O - Objects

What objects and devices are used?  
Who uses the objects and in which environment?

### U - Users

Who are the users?  
What roles do they play?  
What are they influenced by?

UNDERSTAND



In addition to the AEIOU activity, note what you see and what you don't see as you navigate the space.

What's there?

What do you see that is evidence of your initial assumptions?

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What's NOT there?

What do you notice is missing? What proves your biases?

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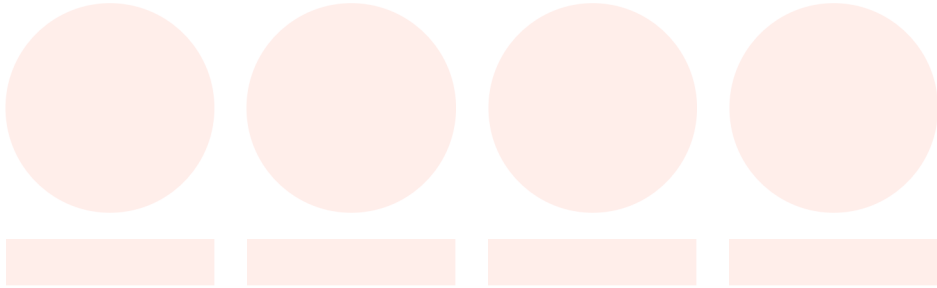
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## INTERVIEWING

To gain a better understanding of the people you're designing for, their behaviors, needs and desires. First, identify who you need to talk to.

Who do we need to talk to?



What do we want to find out?



What questions should we ask?

### REMEMBER

- ☐ Make sure your questions relate to the topic you are discussing.
- ☐ Questions that may influence the person to give you the answer that you want.
- ☐ Try not to ask yes or no questions



## ..... CONDUCT INTERVIEWS .....

Talk to people you've identified earlier. Document what you learn from them in the space below.

## biographical information

## Interview notes

## UNDERSTAND



direct quotes

**needs**

## ..... CONDUCT INTERVIEWS .....

Talk to people you've identified earlier. Document what you learn from them in the space below.

## biographical information

## Interview notes

## UNDERSTAND



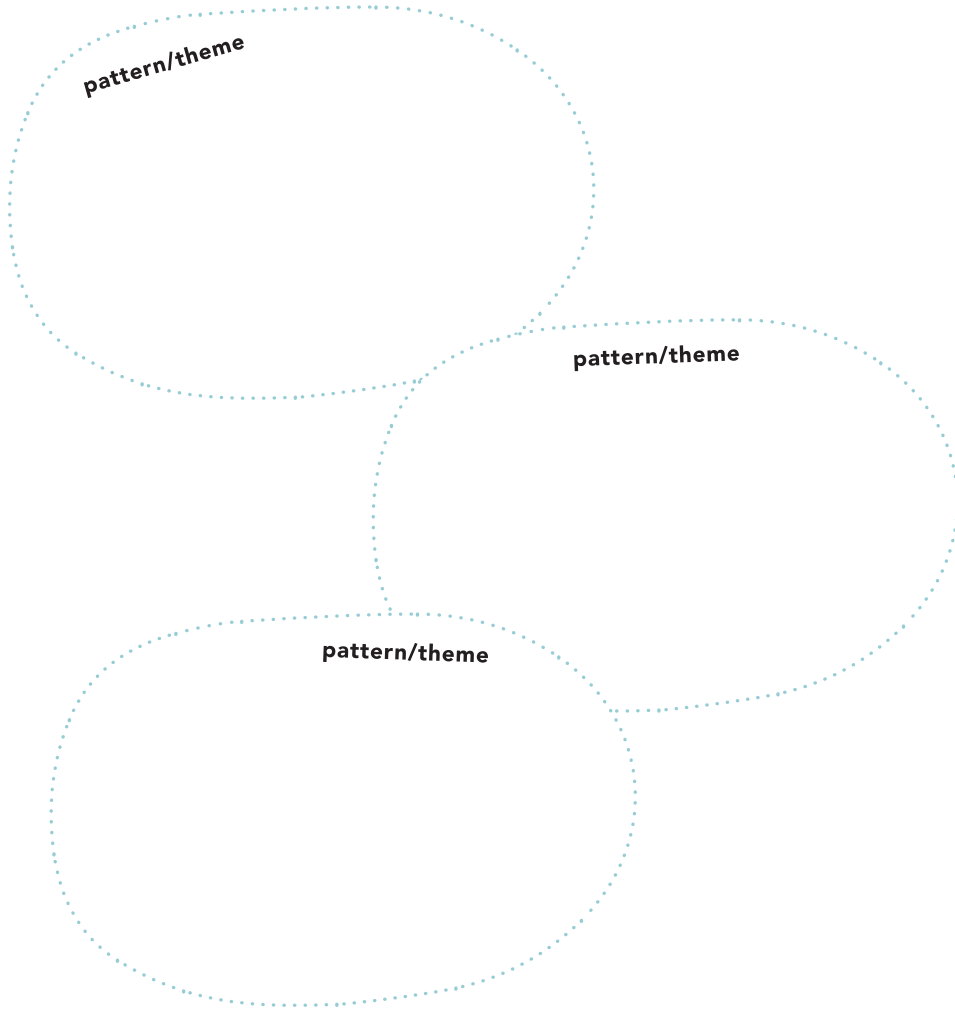
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**needs**

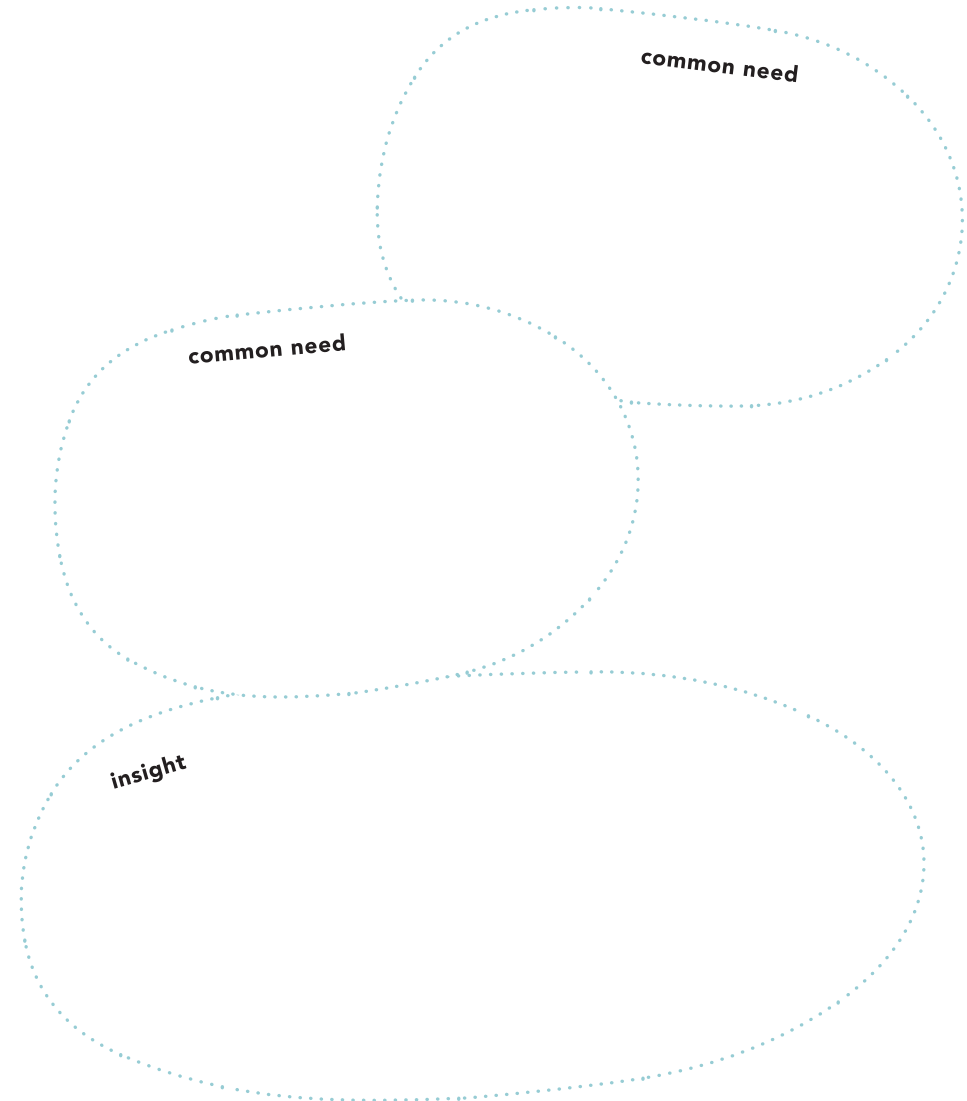


## THEMES & PATTERNS

As a team, talk about what you've individually learned from your research. Organize all your information on a board then note down what patterns emerge from your collective research. What are some needs you've identified?



## SYNTHESIZE



## INSIGHT STATEMENTS

SYNTHESIZE



Craft a few insight statements to succinctly describe your users, their needs and the insight that made you determine this was a need. Insights are revelations; things you didn't know about your users before going into this research.

\_\_\_\_\_ (person/targeted group of people)

need \_\_\_\_\_ (unmet need)

because \_\_\_\_\_ (insight)

\_\_\_\_\_ (person/targeted group of people)

need \_\_\_\_\_ (unmet need)

because \_\_\_\_\_ (insight)

\_\_\_\_\_ (person/targeted group of people)

need \_\_\_\_\_ (unmet need)

because \_\_\_\_\_ (insight)

\_\_\_\_\_ (person/targeted group of people)

need \_\_\_\_\_ (unmet need)

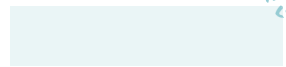

because \_\_\_\_\_ (insight)

## CREATE PERSONAS

SYNTHESIZE



As a team, create personas that are based on the people you talked to. To begin, each team member will draft one persona in their own workbook then share it with the team. Finally come together to modify and craft the top three.



### Biography

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### Motivations

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### Frustrations

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### Needs

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### Ideal Experience

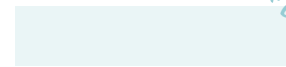

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### Biography

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### Motivations

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### Frustrations

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### Needs

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### Ideal Experience

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## HOW MIGHT WE

From each of the insights, generate a question that begins with 'How Might We' (HMW). Give each HMW question a number and write in the blue box.

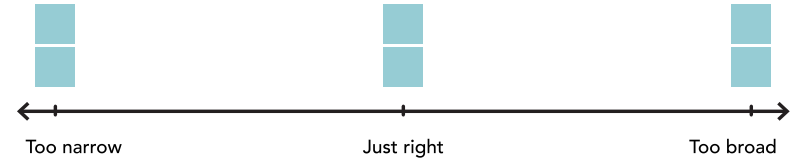
Example of a 'How Might We' question from an insight:  
*'How might we ensure that patients understand the importance of arriving 2 hours prior to their procedure, so that operations begin on time.'*

How might we...

How might we...

How might we...

## SYNTHESIZE



Evaluate whether each question is too narrow, too broad or just right. Write down the question number in the boxes on this scale.

Now write down your favorite 'How Might We' question.  
 Make any tweaks if necessary.

## BRAINSTORM

IDEATE



Generate as many ideas as you can. Quantity is better than quality at this point. Use at least the ten spaces provided here but feel free to use post-its or paper if you're feeling creative. Make sure you don't criticise or judge your ideas. Once you're done, give each idea a score from 1-5 and write it down in the yellow circle. This will help you decide which one to prototype.

### Brainstorming Rules

1. Defer judgment
2. Encourage wild ideas
3. Build on the ideas of others
4. Diverge don't digress
5. One conversation at a time
6. Be visual
7. Go for quantity

Idea 1	Idea 2
Idea 3	Idea 4

Idea 5	Idea 6
Idea 7	Idea 8
Idea 9	Idea 10

## REVERSE BRAINSTORMING

Take a stab at brainstorming all the ways you could cause the problem to be worse. Then reverse that by finding solutions to these bad ideas.

How can we make  
the problem worse?



How can we  
solve that?

IDEATE



What's your top idea?

Can you create different variations of this one idea?

*(perhaps you combine ideas. What if you had a 100\$ to implement it? What about 100,000\$?)*

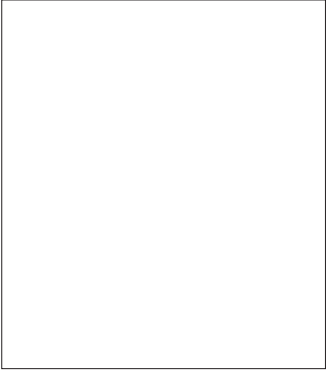
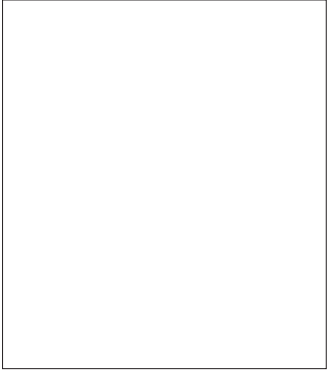
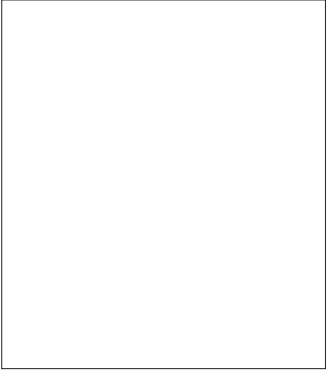
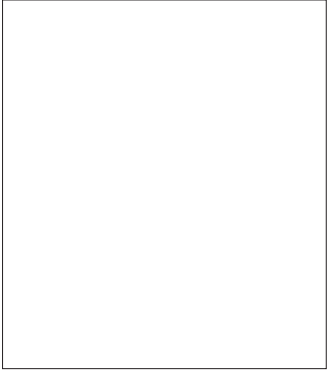
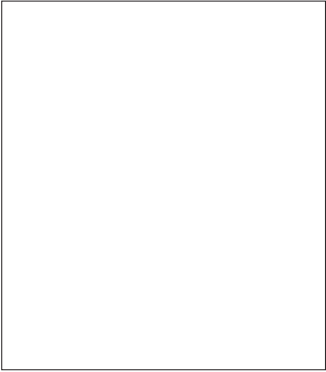
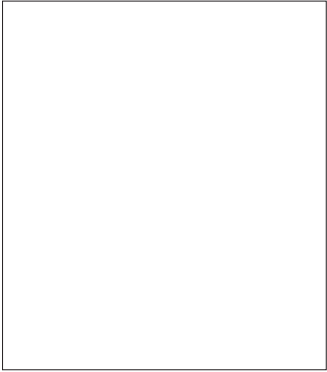
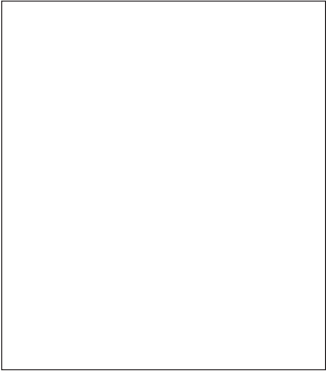
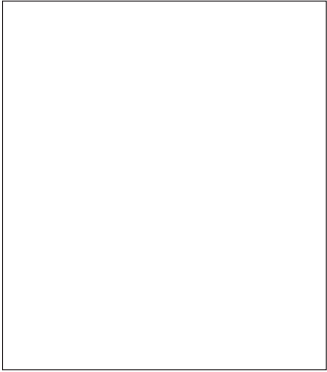
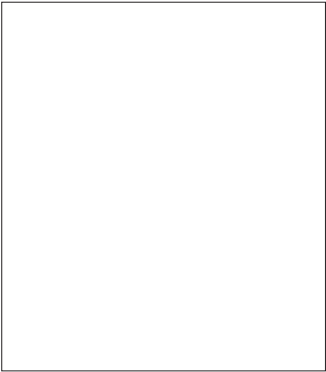
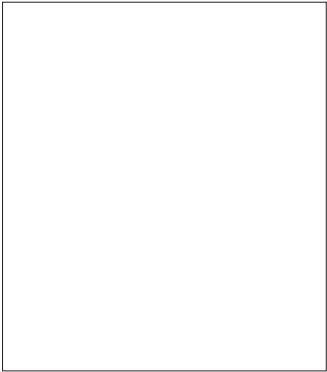
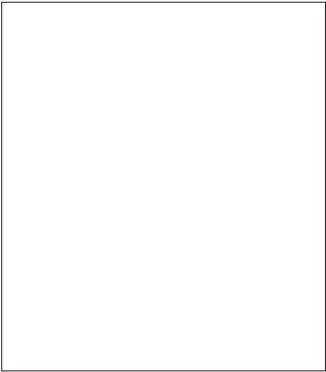
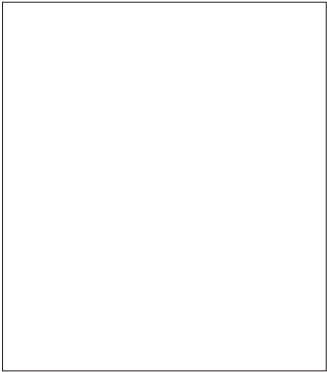
What's the idea you want to prototype?

## ..... PROTOTYPE .....

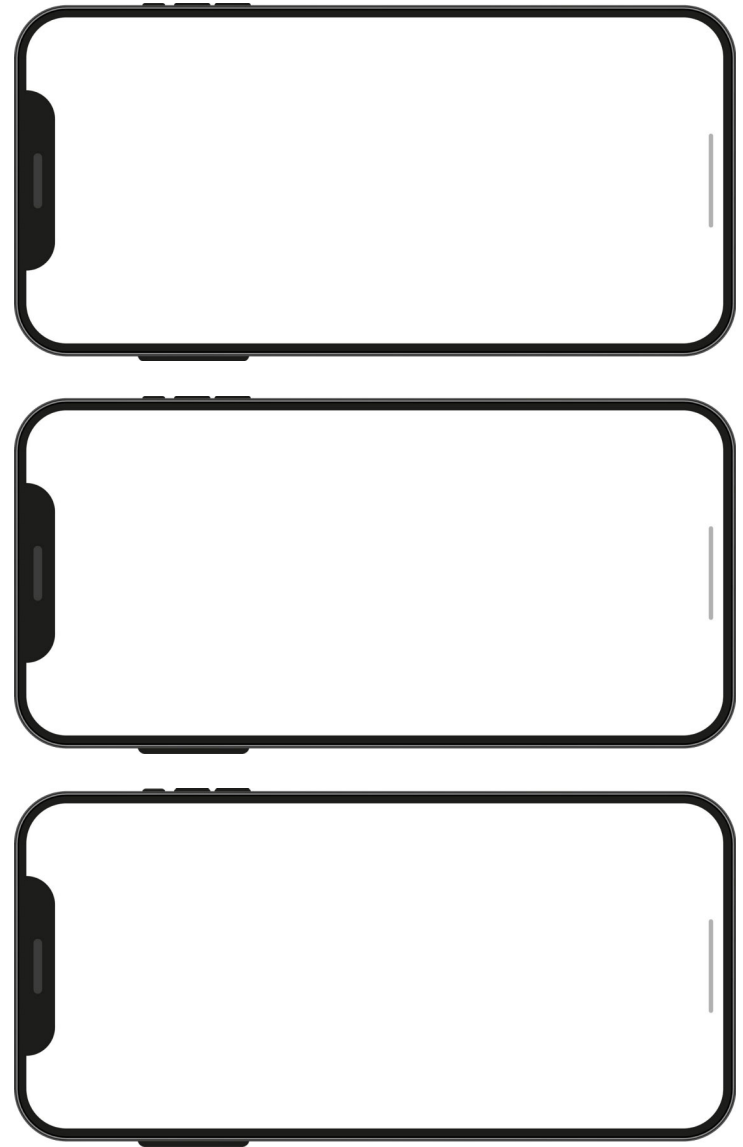
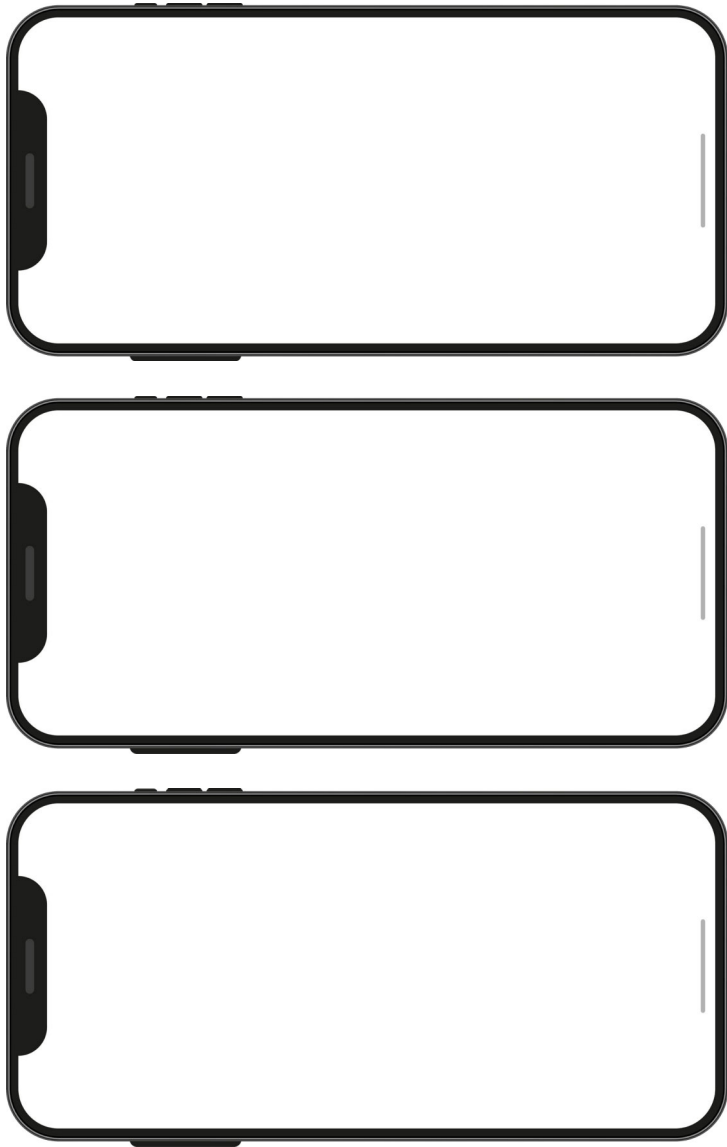
Use the materials provided to create a prototype that would communicate your idea to other stakeholders. Here are some ways you may prototype it quickly to communicate your idea to others: **Sketch it / Storyboard it / Create a 3D mockup / Create a wireframe / Create a paper prototype / Act it out.** The following pages have storyboarding and paper prototyping templates that might be useful.

## PROTOTYPE









GET FEEDBACK AND ITERATE

PROTOTYPE



Have other users **engage** with your prototype and let them give their feedback in the 2x2 matrix below. Then go for another round of prototyping!

<p><b>LIKES</b> What do people like?</p>	<p><b>WISHES</b> What could be improved?</p>
<p><b>WONDERS</b> What questions do people have?</p>	<p><b>IDEAS!</b> What ideas do people have?</p>

What are your next steps based on this feedback?  
What **iterations** can you make to incorporate the **feedback** you received?

## IMPLEMENT



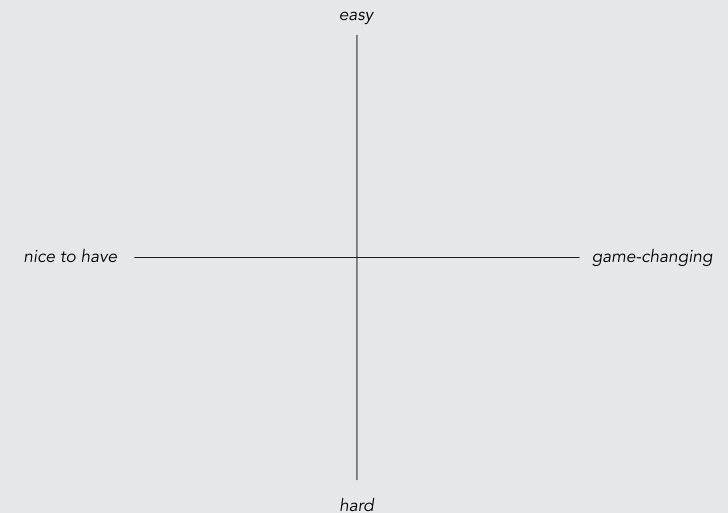
Before 'pitching' your solutions to the group, answer the questions below.

**NAME YOUR IDEA:** Make it memorable!

**JUSTIFY YOUR IDEA:** Why is it important?

**DESCRIBE YOUR IDEA:** What's it about?

**ASSESS YOUR IDEA:** Use the matrix to assess how desirable this idea is to the people involved and how easy it will be to implement.



## PITCH

Use the following template to craft a 3 minute pitch to share the solution your team has prototyped.



Or write it in your own words here:

Our team designed the \_\_\_\_\_.  
*idea title*

We noticed that, \_\_\_\_\_ face \_\_\_\_\_  
*population description* *problem*

Our research showed that this causes \_\_\_\_\_  
*subject*

to feel \_\_\_\_\_.

Our solution, the \_\_\_\_\_, would overcome  
*title*

this problem by \_\_\_\_\_  
*description*

It consists of \_\_\_\_\_  
*description of key features*

This is how it helps \_\_\_\_\_ solve \_\_\_\_\_  
*population description* *problem*

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