

# DESIGN THINKING

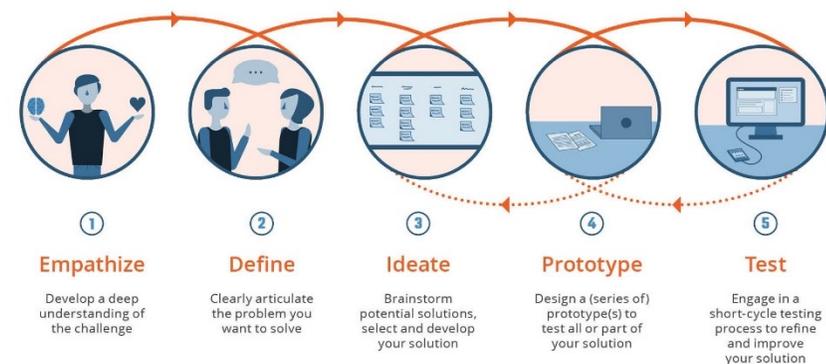
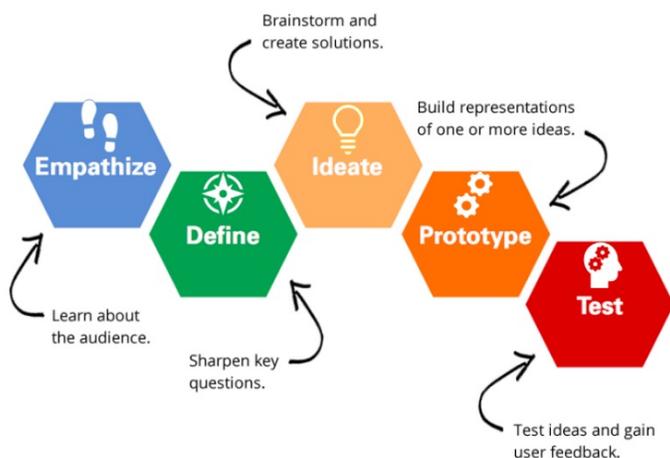
AT THE INTEGRATED DESIGN LAB

DESIGN THINKING | Overview

This work is licensed under a Creative Commons  
Attribution- NonCommercial-ShareAlike 4.0 International  
License.

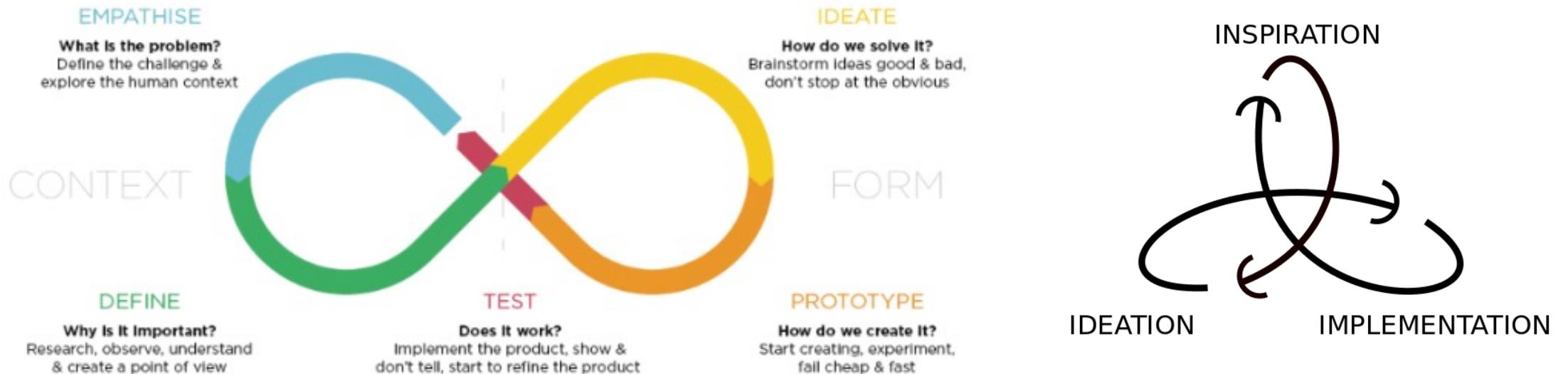
# DESIGN THINKING

- Design Thinking begins as a framework for discovering and developing solutions that can be applied to a variety of problems.



# DESIGN THINKING

- Design Thinking begins as a framework for discovering and developing solutions that can be applied to a variety of problems.



# DESIGN THINKING

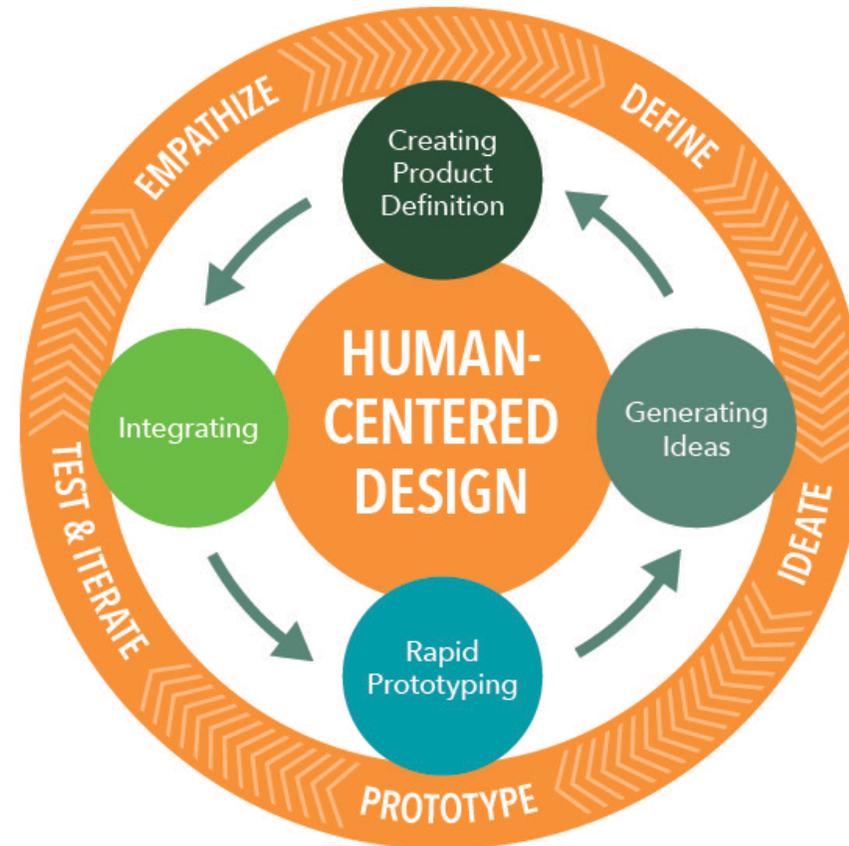
Our approach is to guide designers through established stages and tools to expose them to the Design Thinking framework.

Application of the Design Thinking framework trains the designer to maintain focus on the *human* throughout the entire design lifecycle.

We describe Design Thinking in terms of stages but, in reality, it is an iterative process and elements merge together seamlessly and become incorporated into your design philosophy.

# DESIGN THINKING

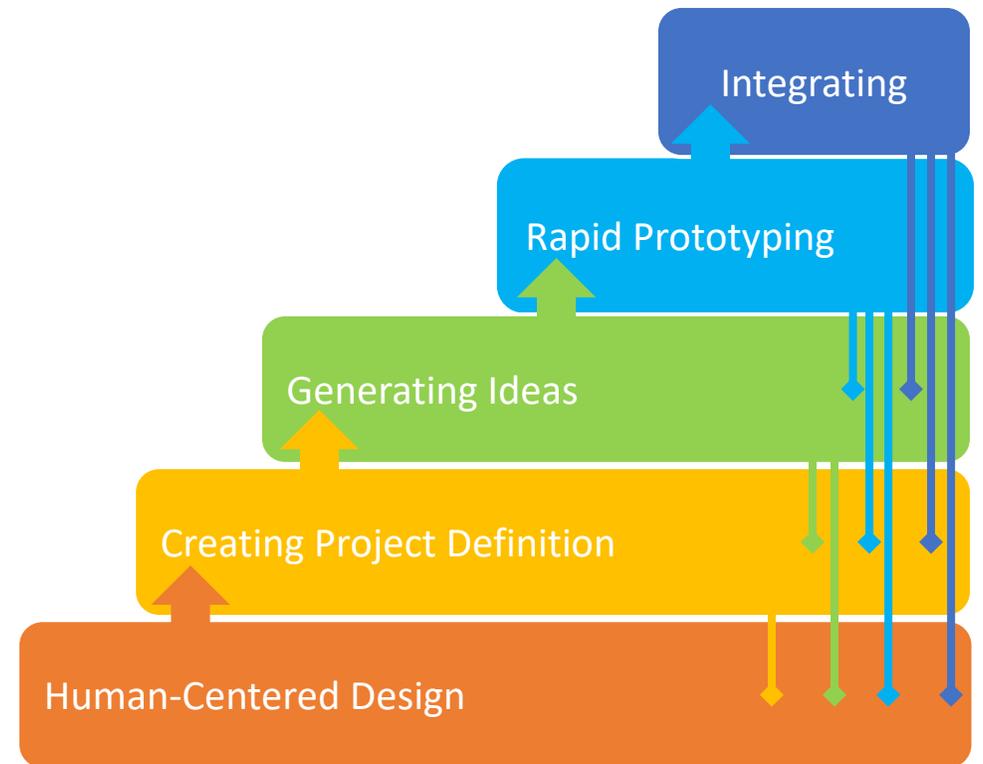
- Empathize  
→ Human-Centered Design
- Define  
→ Creating Project Definition
- Ideate  
→ Generating Ideas
- Prototype  
→ Rapid Prototyping
- Test & Iterate  
→ Integrating



# DESIGN THINKING

The five stages in our approach to Design Thinking are:

- Human-Centered Design
- Creating Project Definition
- Generating Ideas
- Rapid Prototyping
- Integrating



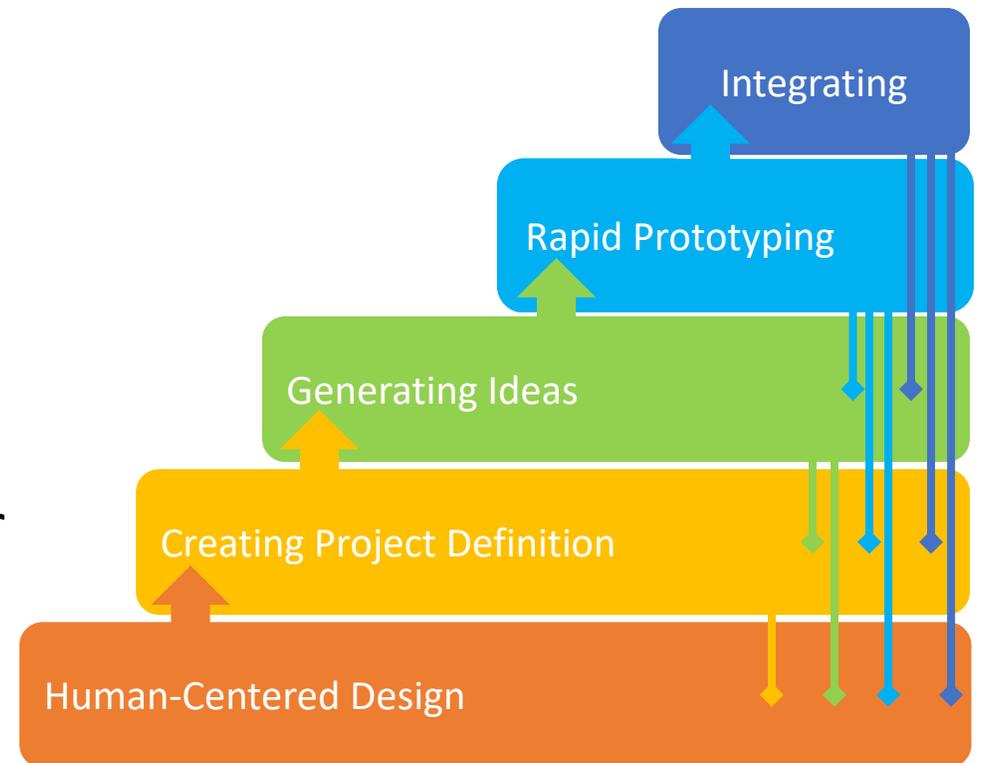
# DESIGN THINKING

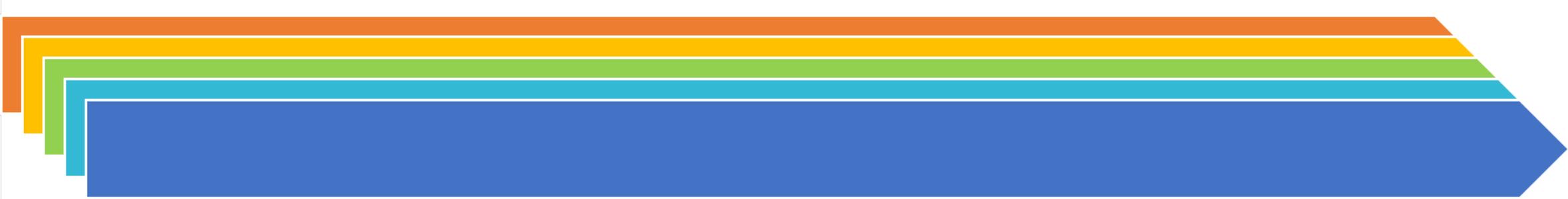
For each module:

- 1) Review the materials contained in the PowerPoint presentation and Supplementary Document\*.
- 2) Read the Case Studies from each field: drafting, art, and construction.
- 3) Complete the Activity according to the guidelines established by your instructor.

When you have completed each module please complete the **student feedback form** linked in the Student Feedback module, as well as any other feedback requested by your instructor.

\*There is no Supplementary Document for Module 5-Integrating.





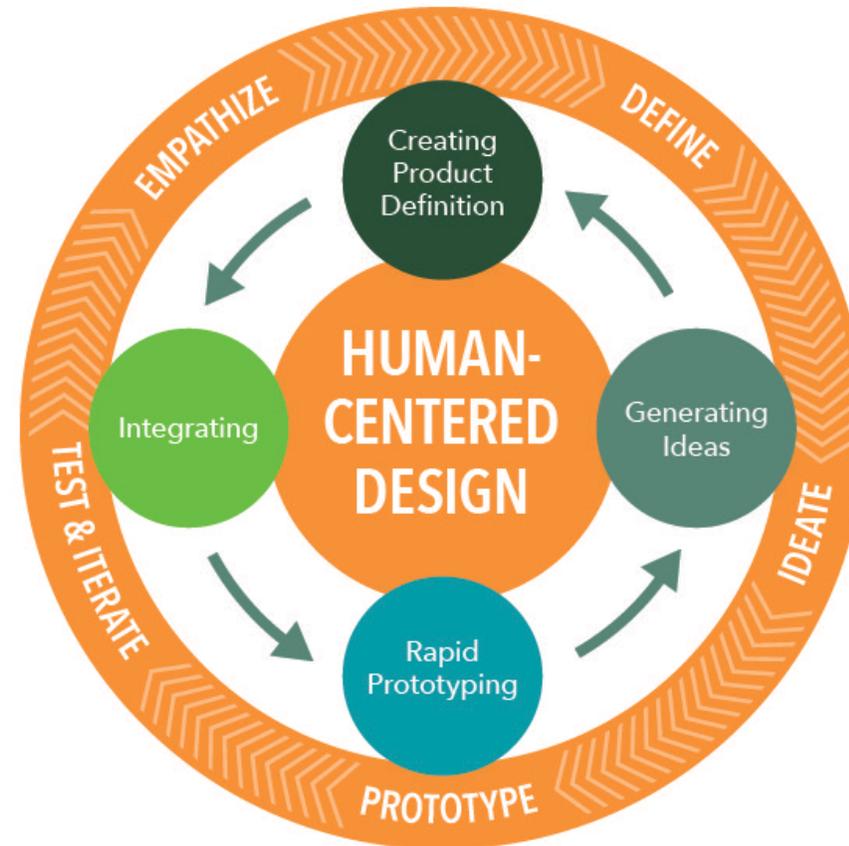
# HUMAN-CENTERED DESIGN

**DESIGN THINKING | THE INTEGRATED DESIGN LAB**

HUMAN CENTERED DESIGN | Introduction

# DESIGN THINKING – HUMAN-CENTERED DESIGN

- **Human-Centered Design**
- Creating Project Definition
- Generating Ideas
- Rapid Prototyping
- Integrating



# DESIGN THINKING – HUMAN-CENTERED DESIGN

**Upon completion of this module the student will be able to:**

- Apply a human-centered focus in the design thinking process.
- Develop tools for assessing customer/client culture and ecosystem.
- Describe and apply active listening skills.
- Develop a template for conducting and completing an interview.
- Learn how an empathy map can help better understand a problem.

# Finding the *Human* in design

As we begin the process it's important to remember that no matter what the problem, the solution should be a ***Human-Centered Design***.

An important aspect of a design team is that the team should be composed of **interdisciplinary** people. Diversity adds depth and strength to the project.

# Tool – Culture & Ecosystem

Most designer/client relationships start with a known problem or need. Your first task is not to understand the problem but to understand the client (the Human).

Each problem or need only exists within the context of its particular Culture & Ecosystem. This tool includes a list of questions to ask to better understand the internal and external factors that will influence a client or project.

See the **Module 1 Supplementary Document** for more information on understanding **Culture & Ecosystem**.



# Tool – Active Listening

**Listen for understanding and not for response, confirmation or rebuttal.** Each person you meet is an expert in something. It is your responsibility to learn from them and discover where their particular expertise lies.

The **Module 1 Supplementary Document** includes a list of tips to help you become a more active listener.

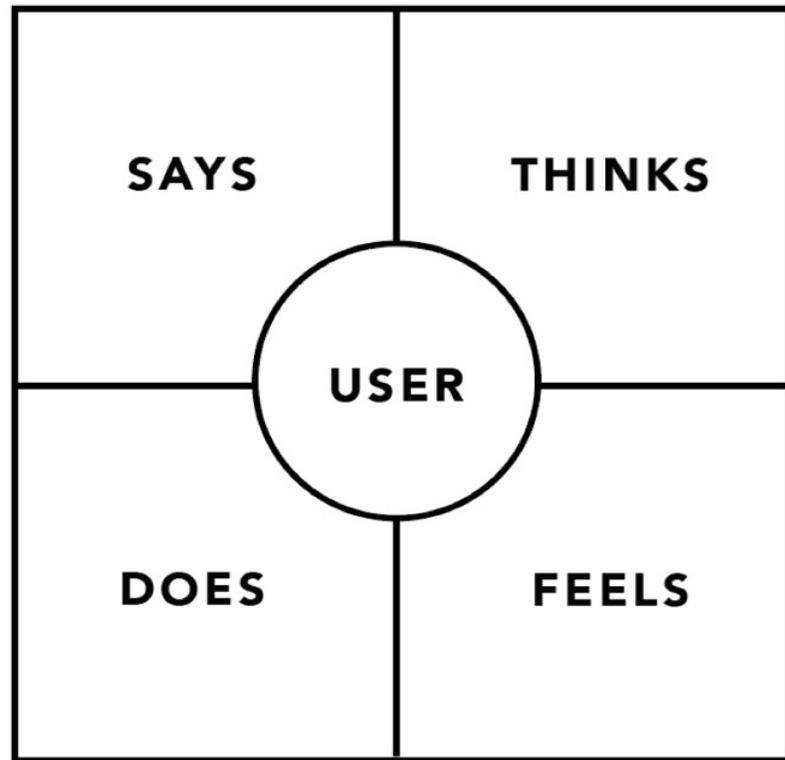
# Tool – Effective Interviewing

- Apply active listening skills.
- Come prepared with a list of questions you *need* to ask.
- Be prepared to change tactics if interviews take unexpected turns.
- Interview a variety of people who will make decisions about or interact with the solution.

See the **Module 1 Supplementary Document for Interviewing Sample Questions** that can help you learn more about a client and their values.

# Tool – Empathy Map

## EMPATHY MAP



NNGROUP.COM **NN/g**

Non-verbal cues can be as (or more!) important than what someone says.

Pay attention to their mannerism and body language for clues to a more complete picture of the speakers' meaning, understanding, motivation and desires

See the **Module 1 Supplementary Document** for instructions on how to use an **Empathy Map** when interviewing.

# DESIGN THINKING – HUMAN CENTERED DESIGN

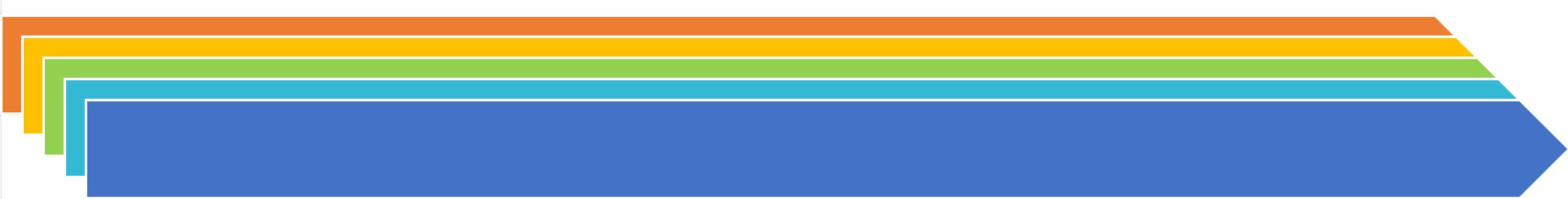
SUMMARY: A client will probably tell the designer what they want.

*The designer's role is to listen.*

empathize

"It's not the employer who pays the wages. Employers only handle the money. It's the customer who pays the wages."  
– Henry Ford

"We spend a lot time designing the bridge, but not enough time thinking about the people who are crossing it."  
– Dr. Prabhjot Singh,  
Director of Systems Design at the Earth Institute



# DESIGN THINKING

AT THE INTEGRATED DESIGN LAB

You've completed HUMAN-CENTERED DESIGN | Introduction

Next: HUMAN-CENTERED DESIGN | Case Studies

## Module 1 Supplementary Document—Human-Centered Design

### ***CULTURE AND ECOSYSTEM***

Use this tool when trying to understand the culture and ecosystem of the client or project. This can be used as a way to gather your thoughts and ensure that you are able to ask the right questions when you have the opportunity to interview the client(s). The questions included below do not necessarily apply to every possible design scenario and the list below may not include questions you need to ask to ensure you are fully understanding your client/the project. Use your best judgement when deciding which to ask.

**Culture:** (Internal. Preferred rules of human interaction.)

- What do they value?
- How do they see themselves in relation to their community?
- How do they celebrate or reward success?
- How do they handle disappointment or failure?
- What is their relationship with risk?
- Are decisions made centrally or are they distributed?
- What is a passion and what is a requirement?

**Ecosystem:** (External. Opportunities, pressures, constraints, momentum, resistance)

- What is the trajectory of the business?
- What is the state of their competition?
- What is the state of their community?

Whether your design is for a customer, client, or an audience, your goal is the same:

**You listen to understand.**

### ***ACTIVE LISTENING BEST PRACTICES***

Use the tips below to become a more active listener. These skills will benefit you throughout your career.

- Actively suppress your brain's attempt to reply or wander to side topics. Try to build a complete picture of understanding, without judgement or opinion.
- Ask questions that help the speaker reveal more of themselves. Avoid questions that can be answered with a simple yes or no.
- Continue to ask questions that guide the speaker to become more specific and illustrate greater details.
- Summarize what you are hearing and ask for either confirmation or clarification. State that you hear them say A-Z or 1-10 and ask if they agree with your understanding of what you heard.
- Create a space that is relaxed. Allow the speaker time to think, reflect, talk around a topic as a way to reach a better explanation. Encourage the speaker with positive thoughtful feedback in the form of questions, nods of agreement, looks of curiosity and smiles of recognition.
- Pay attention to their mannerism and body language for clues to a more complete picture of the speakers' meaning, understanding, motivation and desires.
- Be sure that your questions reveal your curiosity and desire to hear a complete message and not reveal your personal perspective. You are there to learn and not to prove you are right, especially when their viewpoint differs from yours.

## ***INTERVIEWING SAMPLE QUESTIONS***

Use the list of questions below to help you begin brainstorming questions you may ask a potential client. Be sure that you ask the same question to multiple stakeholders (from CEO to production floor worker to customers, if possible). Always arrive at a client interview prepared with questions, but also prepared to change your approach as you start getting unexpected answers.

### Business:

What is their company's history?

Why did they start their business?

Why are they still in business?

Where do they want their business to go?

For whom?

Why? (*Why* they are in business is an important factor in *how* they do their business.)

### Community:

What is the history they celebrate?

What part of their history is underrepresented?

What are their current values?

What are the values that need to be strengthened?

What does the community aspire to be?

Strengths?

Weaknesses?

### Individual:

What is their history?

What art do they have?

What is their relationship to art and design?

What sparks their sense of wonder or awe?

What do you look to when you want to be reminded of your better self?

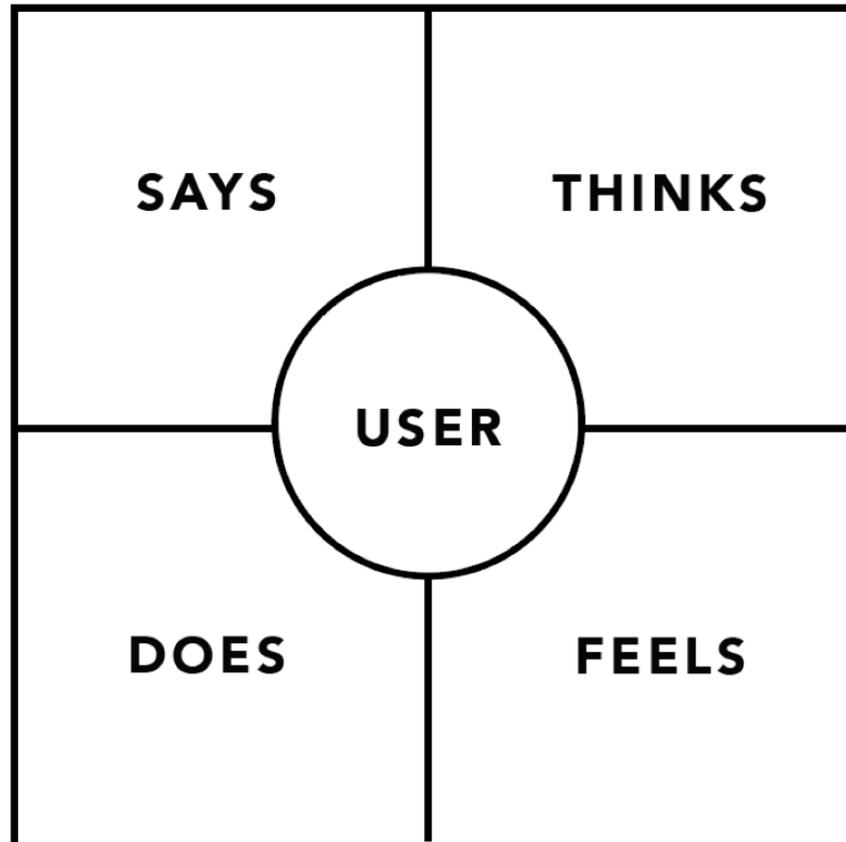
Also, it is important to note that when interviewing the various shareholders and potential users, the following empathy map is important to consider. Users may say one thing but do something completely different. It is important to carefully observe, listen with your eyes, to learn what the users really do.

## ***EMPATHY MAPPING (from the Nielsen Norman Group)***

<https://www.nngroup.com/articles/empathy-mapping/>

An **empathy map** is a visualization used to help us learn about a particular type of user. It helps 1) create a shared understanding of user needs, and 2) aid in decision making. Traditional empathy maps are split into 4 quadrants (*Says, Thinks, Does, and Feels*), with the user or persona in the middle. Empathy maps provide a glance into who a user is as a whole.

## EMPATHY MAP



NNGROUP.COM **NN/g**

The **Says** quadrant contains what the user says out loud in an interview or some other usability study. Ideally, it contains direct quotes from interviews.

The **Thinks** quadrant captures what the user is thinking throughout the experience. Ask yourself (using what you have learned in the interview): what occupies the user's thoughts? What matters to the user? It is possible to have the same content in both *Says* and *Thinks*. However, pay special attention to what users think, but may not be willing to say.

The **Does** quadrant encloses the actions the user takes. From the interview, what does the user physically do? How does the user go about doing it?

The **Feels** quadrant is the user's emotional state. Ask yourself: what worries the user? What does the user get excited about? How does the user feel about the experience?