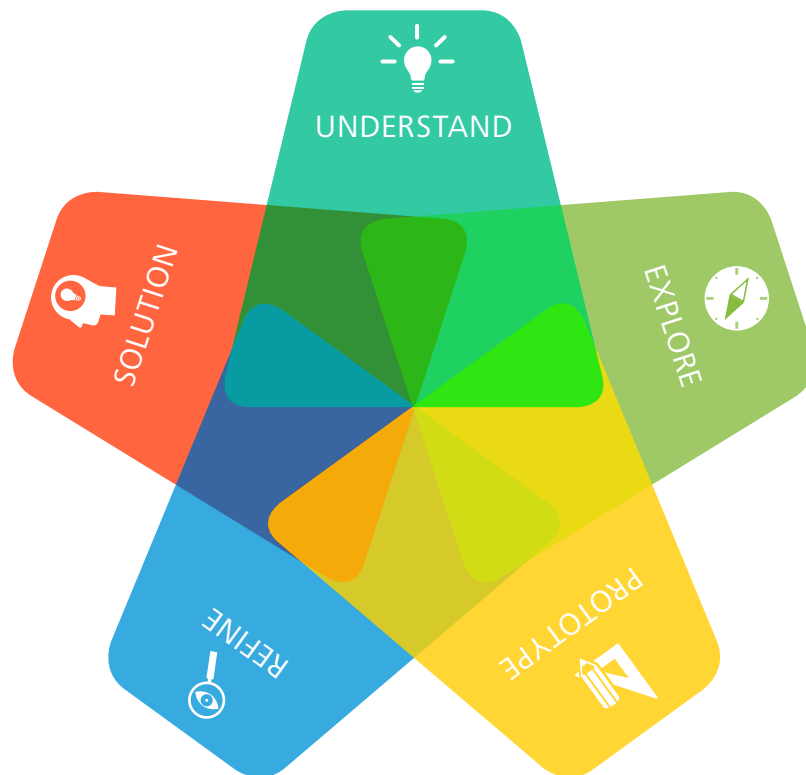


# Design Thinking: Understand Phase Student Assignment

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# Design Thinking Overview



## UNDERSTAND

The first stage of design thinking involves learning as much as you can about the problem at hand. What are the parameters? Who is the audience? Ask questions and brainstorm!



## EXPLORE

Next, do some research. Explore the many different ways people have tackled similar design challenges. Think about what's possible, as well as what might be some restrictions.



## PROTOTYPE

Once you have some ideas, it's time to test them. Sketch, write, mold, and use software to model your ideas as best you can. Try to communicate your concept as best you can.



## REFINE

By this point, you should narrow your field of ideas down to one. Use your prototype, your knowledge of the design challenge, and the power of design software to make final refinements.



## SOLUTION

Lastly, finalize your project the same way real world design professionals do every single day. Build it, print it, or present a broad overview of the finished product to your classmates.

# Overview

Understanding the people you're designing for — the ones who will use your products and services — is the crucial first step in the design process. Developing empathy for people is not only a pillar of design thinking, but essential throughout the whole process. We must uncover people's true wants and needs in order to understand and frame the problem we're solving. By placing people at the forefront of our approach, and by removing our own bias, we unearth the learnings that will guide our process. The Understand phase of design thinking encompasses the study of these people, the empathy we develop, and the findings that emerge.

In this design challenge, your goal is to understand how users think about different chairs and uncover their wants and needs in order to design a variety of comfortable, sturdy chairs. To get started, download the Chair: Ergonomics project resources on Autodesk Design Academy, [academy.autodesk.com/curriculum/chair-ergonomics](https://academy.autodesk.com/curriculum/chair-ergonomics).

## TIME

1-5 HOURS

## LEVEL

Beg/Int/Adv

## PREREQUISITE

Watch Karim Rashid, award winning industrial designer, share his approach to product design using the design thinking process. This Designer Profile video is found at [academy.autodesk.com/curriculum/chair-ergonomics](https://academy.autodesk.com/curriculum/chair-ergonomics).



## LEARNING OBJECTIVES

01

Define empathy and demonstrate why it's important to the design thinking process.

02

Explain various approaches to develop empathy and understanding, specifically through observation.

03

Apply-share the various active and passive approaches practiced in the homework assignment.

04

Leverage Design Academy resources to introduce educator/students to design thinking principles through foundation exercises and projects.

05

Describe how the use of a software program such as Autodesk Fusion 360 can facilitate the rapid development of chair concepts.

## DESIGN BRIEF: BEGINNER

Your assignment is to observe how three adults use chairs in order to better understand their needs. These observations will each chronicle a seating “user journey” that includes the following steps: 1) entering a seating area 2) choosing a seat 3) sitting down 4) using a chair 5) standing up and 6) exiting seating area. You may choose to observe three people in the same location or differing locations, however, be sure to include both male and female users.

TIME: 3 HOURS

### STEP 1:

Brainstorm location(s) where you can unobtrusively observe your users for an hour. Consider the locations your users frequently visit. Plan to focus 100% on the observation itself. Sites may include a public library, restaurant, park, bus or train station, or auditorium. Make sure you can get close enough to each user to observe them individually, and take notes, without making them feel uncomfortable.

### STEP 2:

Write 500 words describing each observation setting. Provide context for the environment. Explain what it looks like and leverage your other senses to help others imagine the space. Narrate details about the colors, temperature, layout, size, and time of day. Relate how busy it is, tell us who else is there, why you selected this location, how it feels to you, and more.

### STEP 3:

Write 500 words detailing each of your three users. Describe them physically and emotionally. Chronicle what s/he is wearing, carrying, what makes them unique and why you selected them. Report if they are alone or with others. Try to ascertain their mood and goals. Summarize what they are doing, approximate their age, and recite other observations to help bring them to life.

### STEP 4:

Note your observations of each user’s “seating journey” in the chart below. Complete one chart for each of your three users to yield three charts total.

### STEP 5:

Write a 500 word final summary about your three observations. Tell us what you learned about observing people, how they use chairs, and what you will take away from doing this type of field research.

Journey Step	Observations	Interpretations/possible needs
Entering/choosing a seat		
sitting down		
using the chair		
standing up		
exiting the seating area		

## DESIGN BRIEF: INTERMEDIATE

Your assignment is to observe one toddler, one teen, and one elderly person use chairs in order to better understand their needs. These observations will each chronicle a seating “user journey” that includes the following steps: 1) entering a seating area 2) choosing a seat 3) sitting down 4) using a chair 5) standing up and 6) exiting seating area. You may choose to observe three people in the same location or differing locations, however, be sure to include both male and female users.

TIME: 4 HOURS

### STEP 1:

Brainstorm location(s) where you can unobtrusively observe your users for an hour. Consider the locations your users frequently visit. Plan to focus 100% on the observation itself. Sites may include a public library, restaurant, park, bus or train station, or auditorium. Make sure you can get close enough to each user to observe them individually, and take notes, without making them feel uncomfortable.

### STEP 2:

Write 750 words describing each observation setting. Provide context for the environment. Explain what it looks like and leverage your other senses to help others imagine the space. Narrate details about the colors, temperature, layout, size, and time of day. Relate how busy it is, tell us who else is there, why you selected this location, how it feels to you, and more.

### STEP 3:

Write 750 words detailing each of your three users. Describe them physically and emotionally. Chronicle what s/he is wearing, carrying, what makes them unique and why you selected them. Report if they are alone or with others. Try to ascertain their mood and goals. Summarize what they are doing, approximate their age, and recite other observations to help bring them to life.

### STEP 4:

Note your observations of each user’s “seating journey” in the chart below. Complete one chart for each of your three users to yield three charts total.

### STEP 5:

Write a 750 word final summary about your three observations. Tell us what you learned about observing people, how they use chairs, and what you will take away from doing this type of field research.

Journey Step	Observations	Interpretations/possible needs
Entering/choosing a seat		
sitting down		
using the chair		
standing up		
exiting the seating area		

## DESIGN BRIEF: ADVANCED

Your assignment is to observe how three people who are either visually impaired, have a leg brace or cast, use crutches, are obese, or are very pregnant, use chairs in order to better understand their needs. These observations will each chronicle a seating “user journey” that includes the following steps: 1) entering a seating area 2) choosing a seat 3) sitting down 4) using a chair 5) standing up and 6) exiting seating area. You may choose to observe three people in the same location or differing locations, however, be sure to include both male and female users.

TIME: 5 HOURS

### STEP 1:

Brainstorm location(s) where you can unobtrusively observe your users for an hour. Consider the locations your users frequently visit. Plan to focus 100% on the observation itself. Sites may include a public library, restaurant, park, bus or train station, or auditorium. Make sure you can get close enough to each user to observe them individually, and take notes, without making them feel uncomfortable.

### STEP 2:

Write 500 words describing each observation setting. Provide context for the environment. Explain what it looks like and leverage your other senses to help others imagine the space. Narrate details about the colors, temperature, layout, size, and time of day. Relate how busy it is, tell us who else is there, why you selected this location, how it feels to you, and more.

### STEP 3:

Write 500 words detailing each of your three users. Describe them physically and emotionally. Chronicle what s/he is wearing, carrying, what makes them unique and why you selected them. Report if they are alone or with others. Try to ascertain their mood and goals. Summarize what they are doing, approximate their age, and recite other observations to help bring them to life.

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Journey Step	Observations	Interpretations/possible needs
Entering/choosing a seat		
sitting down		
using the chair		
standing up		
exiting the seating area		

# STUDENT OBSERVATION EXAMPLE

## OBSERVATION SETTING

The first observation setting that I chose for this assignment is a public library. This library is relatively large, with enough seating spaces. The walls are painted with brown and white paint. There are some chairs which are provided around the vicinity—some chairs are for single individuals who prefer to read alone, while other act as group chairs with medium sized tables. The layout of this library is normal, there are some books which are neatly placed in bookshelves, and are grouped according to their titles. People can search the book that they prefer to read through a library database.

I chose to come in this library at 2 p.m. because I think that there will be a lot of people in this place during that time. I specifically selected this location because it is very interesting to know how some readers choose their seating place in a shared reading and research place like the library. I think that this is also an interesting place mainly because the people who go in this library came because of different reasons. Personally, I feel that this particular public library releases a homely vibe because of the numbers of books which are included in the bookshelves, along with the nice smell of old books, and the general quietness of the area.

On the other hand, the second observation setting that I considered in this paper is a park. This park is relatively small with some benches and a small playground for children. There are also some stalls that sell food such as hotdogs and ice cream. The colors around the place are very playful: the benches are white, and the area is booming with different types of flower amidst the grassy backdrop. The stalls are also colored differently and creatively in order to catch the attention of potential visitors. I chose to visit this second observational setting in the morning because I think that there are some people who like to come to the park at this time of the day.

Personally, I felt that the park emits a very playful yet relaxed vibe. Although there are a lot of children in this place, I can feel that most people who come here wanted to relax and see some a different sight when they are not working. This place serves as a leisure hub for some people. I selected this second location as one of my observation settings because I believe that there are a lot of types of people who come here. It is also very interesting to analyze how people in a public park have their own seating preferences, given the basic idea that this is a public place. Finally, I think that by analyzing the seating preference of an individual in this park, I will be able to say a lot about how he/she places himself or herself amidst the number of people who regularly visits this place.

## USER #1

I chose to observe my first two users in the public library. The first one is a male who is of relatively normal height. Based from what I observed physically, he is probably an Asian because of his distinct physical features. He is alone and he carries a medium-sized backpack. He is probably a student who needs to research on a paper because he has a list of textbooks that he tries to find from the library. He is wearing casual attire—a black shirt and fitted dark blue jeans. He also has an earphone which is plugged to his ears as he browses the books that he took from the bookshelves. The guy is also alone and as he finished taking his listed books, he sat and started to skim them. He takes some bullet points and notes every now and then. Based from my observations, this guy must be around 20-22 years old. I specifically chose this person as my first user because he is alone and it is interesting to see how he tries to do his research in the library. He also looks determined in finding some information from the books that he placed on his desk.

Journey Step	Observations	Interpretations/possible needs
Entering/choosing a seat	chose isolate seat	wants to be alone
sitting down	places books first, then sits down	needs to research
using the chair	sits comfortably, scribbles text and takes notes from books borrowed	no hurry, sits in chair comfortably
standing up	carefully packs notes, stands up comfortably	finished doing research
exiting the seating area	gathers borrowed books, personal belongings and exits seating area	returns borrowed books to proper place



## USER #2

The second user that I chose to observe is a girl who is about 20 years of age. She is wearing a medium-sized skirt and a pink blouse, and carries a medium-sized shoulder bag. Based from my observation, she is a little bubbly as she talks with her three companions who are also in the same table as hers. Her actions tell that she did not visit the library to read books nor do some research. She regularly talks with her companions and giggles as she makes quiet jokes. She looks a little bored as she scans the books that they took from the shelves. I personally selected her as the second user that I will observe because she stands out from the crowd of readers in the library. She also evidently doesn't want to read and constantly just talks with her companions which is a quite peculiar attitude because she is in a public library.

Journey Step	Observations	Interpretations/possible needs
Entering/choosing a seat	companions of user chose a long seat with a medium sized desk	user wants to be with her companions while in the library
sitting down	waited for companions to seat as she uncomfortably places her handbag beside her chair	doesn't want the chosen seat of her companions, as seen from her facial expression and reaction
using the chair	user is quite uneasy as she tries to move chair frequently	wants to talk to companions and does not really want to sit in library
standing up	she excitedly stands up	eager to leave the seat
exiting the seating area	gathers belongings and clings to one companion	very happy to leave the area and have the opportunity to talk with her companions

### USER #3

Finally, the last person that I chose to observe for this paper is a middle-aged woman at the park. She is with her baby during this time, who is in a stroller. She also carries a medium-sized bag with some of her baby's needs such as wet wipes, diapers, and milk bottles. She seems relaxed and happy as she plays with her baby with some funny facial expressions as they are seated in the park's bench. What makes this woman unique is the fact that she was the only person there who carries an infant in the park. Most mothers who are also in that park are already with their children who can use the playground, and their husbands, or other family relatives. I also selected her because it very interesting how she will choose her seat in the public park, amidst the numerous families and parents who are also in that area.

Journey Step	Observations	Interpretations/possible needs
Entering/choosing a seat	chooses a medium sized bench and places baby's bag next to her	wants to occupy a larger space so she is not burdened by the bag she carries
sitting down	sits down and arranges stroller in a safe position facing her seating position	wants to be assured that she sees baby at all times
using the chair	sits comfortably, watches baby	seems relaxed and happy because she is with her baby at the park
standing up	gathers baby's belongings and grabs stroller as she stands up	mother wants to be sure that she is with her baby as she stands up
exiting the seating area	mother pushes the stroller as they exit area	already content with her time at the park

## FINAL SUMMARY

The three observations that I made from the three different users are all interesting because they were able to imply a lot about the personality of each individual, as well as the goals that they have in those particular settings. For instance, the first user is more comfortable with his seating preference as compared with the second user because the former really wanted to do some research and read books. Meanwhile, the second user is practically uncomfortable with her seat because she doesn't have any intention to read at all and she wanted to talk with her companions which is quite hard, given the public library setting where she's at. Finally, the third user is quite relaxed as she sits in the park probably because she is happy with the idea that she is with her daughter in that area.

What I specifically learned from doing this activity is the fact that people use chairs differently from one another. There are various reasons that trigger these differences, and these are all very important to consider to be able to learn more about an individual or a group of people. I also learned that the different aspects of seating such as choosing a seat, sitting down, using the chair, standing up, and exiting the seating area, can all be observed, analyzed and interpreted in order to know more about a specific situation.

What I will probably take away from this field research is the truth that people choose their seats for different reasons. Even though this might be considered as a simplistic matter, it is a very important aspect in life because almost everyday, all people choose their seats and these circumstances can tell a lot about the given situation, and the general attitude of each user to his or her seating environment. I am already well aware of the idea that they have their own goals and objectives why they choose a particular seat, or why they seat in a defined manner.

Aside from these, I also learned that external circumstances are also very significant in observing seating preferences of groups and individuals because they all contribute to the some aspects which will be felt by users such as being comfortable and relaxed. This means that some individuals might feel relaxed in their seats probably because of external circumstances such as the atmosphere of the place, or the color of the walls. They might also feel relaxed because they are seated in an isolated area in that place, or are with their companions.