

all materials used:  
chipboard, wire,  
graph paper, tape,  
perforated  
cardboard,  
olfa knife,  
chalk.

3" scale structure layout

Based on my partner, Radhika's, research images, I designed a model for the structure, first sketching it out and then using five pieces of 3" scale 30" x 40" chipboard to build the model. I focused on the geometric aspects that Radhika liked, as well as incorporating symmetry and round features, as seen in the curved seat. I had high hopes for my initial design, as I found the geometric structure visibly pleasing. However, due to the constraints of material size, I had to simplify and adapt as I experimented with the material. Because of my multiple iterations of the chipboard model and lack of an extensive amount of chipboard, my finished model reuses some of the duplicate internal structures. This process is below.

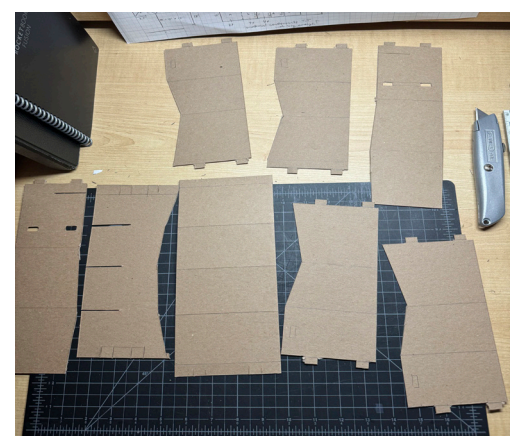
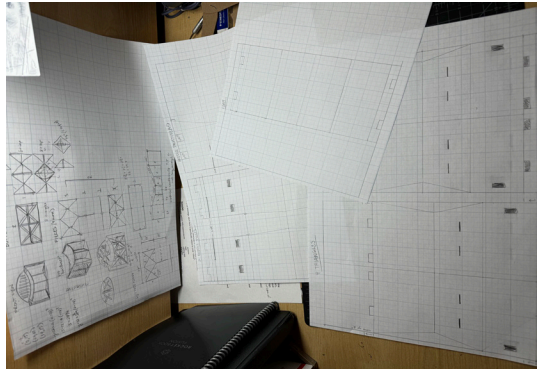
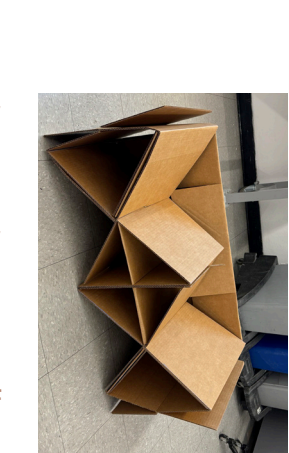
3" scale model structure



designed & built by mira das

full scale cardboard structure

Below and right is my full scale, final cardboard seating structure, made for Radhika. Some aspects stray from my original design due to material constraints, but it holds weight consistently and is also comfortable due to the curved seat. My seating structure is composed of five 30" x 40" perforated cardboard sheets. There are 8 separate pieces that get slotted together to compose the full structure as well. Below are pictures of my building process and ideation evolution.



seating structure



Our first step in this project was collecting measurements from our partner so we could accurately create a structure for them. Based on these, we built 3" scale models of our partners to help visualize a real person on our model structures (left).



To start the brainstorming process, we all chose a few seating structures that interested us. These research images served to help our partners understand what our taste was to cater the structures entirely to us. Below were my partner's research images which I took inspiration from for her seating structure.

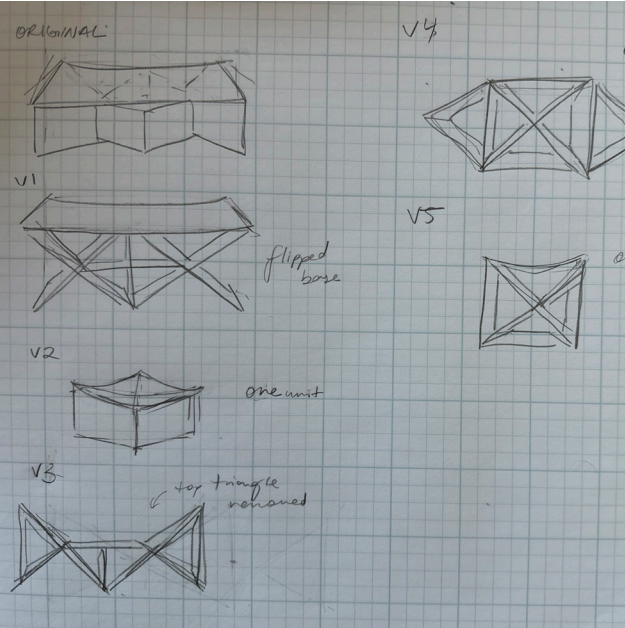
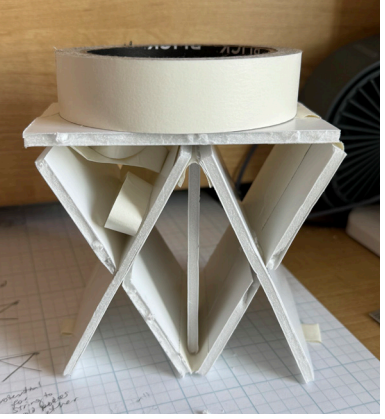
Looking back, I would have had an easier time if I scaled the length of the seat down. It looks more like a bench than a chair.

Though the process for this iteration was time consuming and at times repetitive, I thoroughly enjoyed the satisfaction of being able to comfortably sit on a seating structure that I made. My partner also liked the seat, so I'm happy that I was able to check off all the requirements and preferences. If I were to do this again, I'd make sure I had enough initial material, as lacking chipboard proved difficult in the model making process.

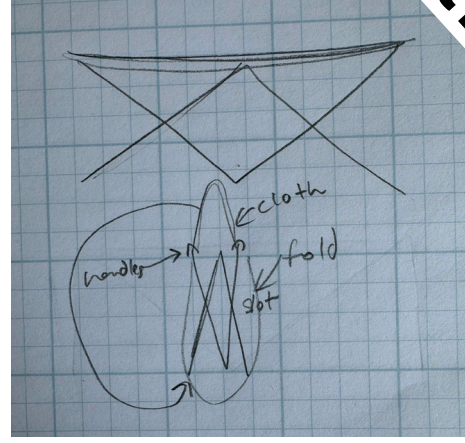
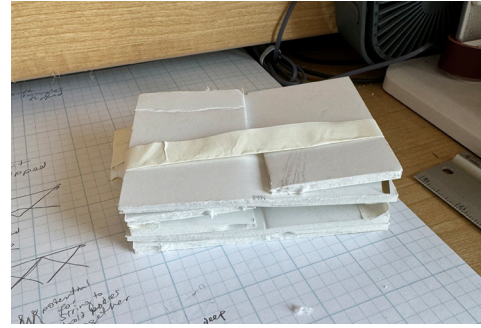
process & reflection

3" scale model structure

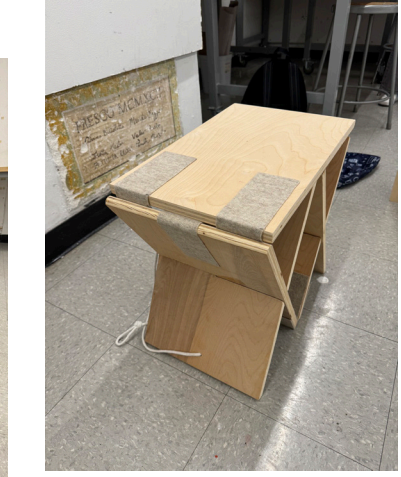
all materials used:  
foam core, tape,  
graph paper, felt,  
3/4" plywood,  
PVA, sandpaper,  
file, rope.



Based on my groups chosen cardboard structure, which was mine, we brainstormed different versions of the same seat to potentially build. We all sketched at least 5 possibilities (below) before choosing the one we wanted to further develop. I chose a design similar to my very first idea for the cardboard iteration, since wood is stronger and could hold up weight as a seat better than a cardboard version. I easily made my 3" scale structure with foam core, but had to rethink the folding potential of the structure many times, as you can't get around the thickness of wood. My final concept is below as well.



seating structure designed & built by mira das  
brainstorm sketches  
final iteration



process & reflection

Due to the required features of our seating structures, I had to figure out how to "fold" five to six pieces of wood into a carryable structure, measuring no more than 6" wide, 18" tall, and 18" deep. Because of the nature of wood, the slots that I cut could not be utilized in the folding process, so I needed to be able to un-slot the wood and carry it stacked next to each other, potentially wrapped with rope or into a bag. I chose to tie a rope around the folded pieces, drill holes into one piece of wood and tying a bowline knot and an anchor loop knot on either ends of the rope as the anchor for the handle.

This project was one of the most rewarding throughout the semester. Like mentioned before, though tedious, it was valuable and interesting regarding the knowledge accumulated for the process. I will likely not be building a chair in the near future, but I'm proud to say that i was successful in doing so at least once. In particular, the fabric hinges that made up the folding aspect of my project were very fun and satisfying to do. I can see myself holding on to that specific piece of knowledge for any future projects; 360 hinges are beneficial! I'm glad I pushed my design to my content, and followed through with it in the face of difficulties.

transformation photos