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Fall 2023
Project Book

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xFab Lecture and Lab are courses that work together to introduce crafts-based making and digital fabrication charted through multiple historical and social perspectives. The lab adopts a hands-on approach to materials, tools, and processes through instructor demos, plus weekly peer show and tell. xFab Lab is dedicated to un-making. This book documents my exploration towards un-making across different methods.

Project 1:
Cardboard

CONCEPT: How can I reflect bark texture in cardboard?
I used to wander the beach near my house taking in the salty breeze and stepping over rugged driftwood. When I was 8 we had a huge storm: giant logs thrashed against the beach, tossing and turning and forming smaller pieces as they splintered under pressure. I loved the deep recesses of weathered wood and the knots representing the stressors of the tree it once was. As I celebrate my six years of living in New York City, I also remember my eighteen years in Seattle. I want to use cardboard to explore ideas of texture and form.

DESIGN:
First, I wet the cardboard--the fron separated naturally from the back and I found that it emulated tree bark pretty accurately. I was intrigued, and decided to expand the scale to create my own driftwood-like forms. I used an Olfa knife to reveal the corrugated part, and then wet them with a damp towel and watched them dry. I was then left with the dry segments.

TAKEAWAYS:
Experimenting with water, time, paint, glue, and tape in three iterations allowed me to explore the texture of bark in cardboard, paying homage to its original form. I realized that the process of setting the cardboard and letting it dry brought me closer to the bark I saw on trees and in driftwood. I became fascinated with the process as the output in this work.

Project 2:
Basketry

CONCEPT: How can I represent female nipples' pleasure, utility, and policing? Inspired by Tracy Wilkinson, I became fascinated with connecting a weaving to a solid form with loose strands outstretched. These loose strands reminded me of a constellation of nerve endings in a nipple. As a gender queer AFAB person, I wanted to explore a complex and evolving relationship with breasts, specifically female nipples' utility, pleasure, and policing.

DESIGN
I created a base with three 0.03" mild steel MIG wire strands. I then tried to weave in an over-under pattern but the wire was more slippery and stiffer than I expected. So, I rebuilt the wire base with a bowl mold and tape and used suture strands to weave through the structure, as a representation of body augmentation processes. The wire was still slippery, so I covered less area than I expected. Darker strands imply an aereola and nipple, while small blades that stick out like nipple hairs. The breast form remains more abstracted.

TAKEAWAYS
I set out to make a weaving that examined breasts through a lens of gender and queerness. I learned about the impact of materiality itself and scale. My challenges with the wire reflected my newness with the medium. Next time, I would choose a more pliable jewelry wire and I would consider scale - sutures were conceptually meaningful but perhaps not logistically the best given their thin nature.

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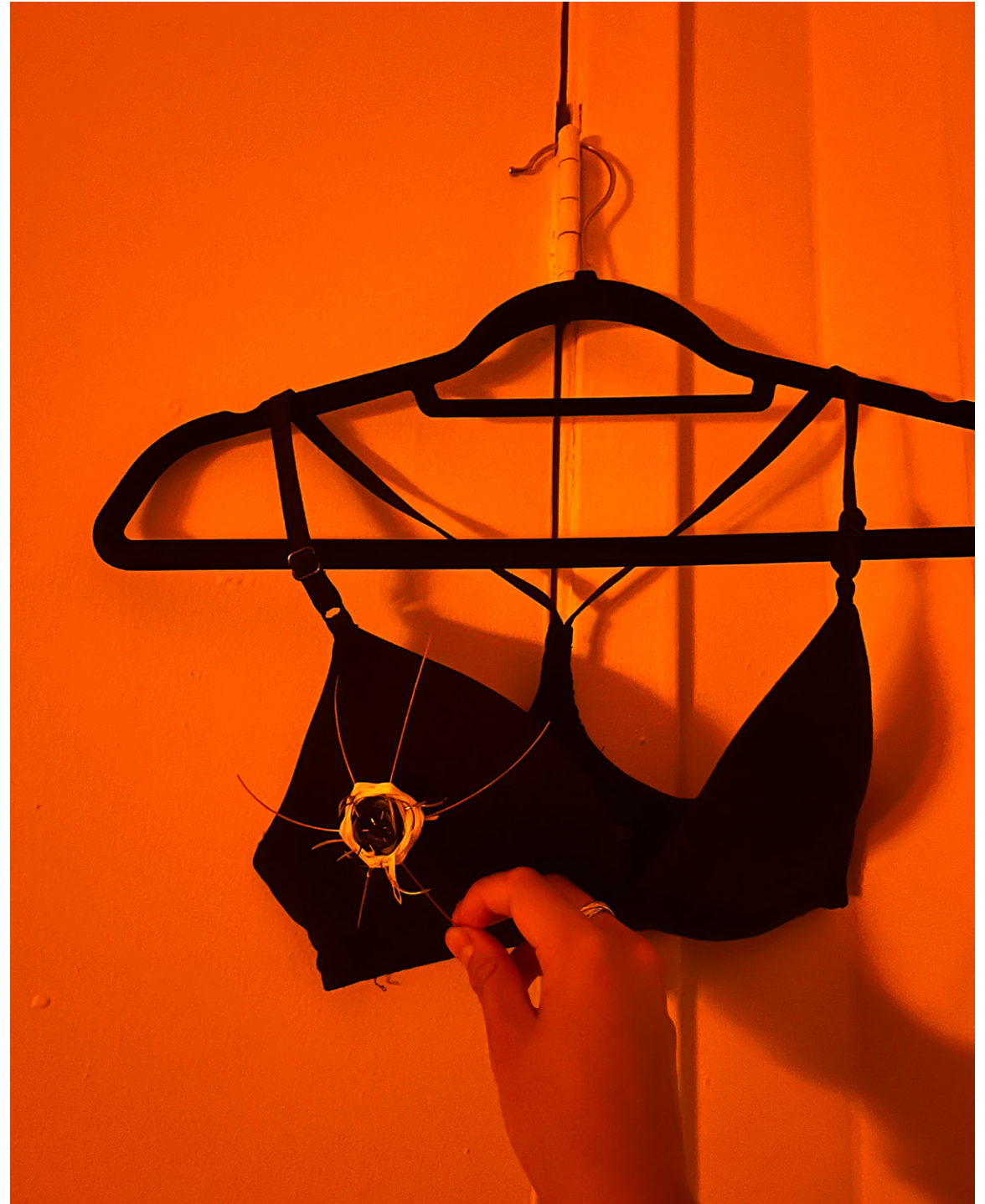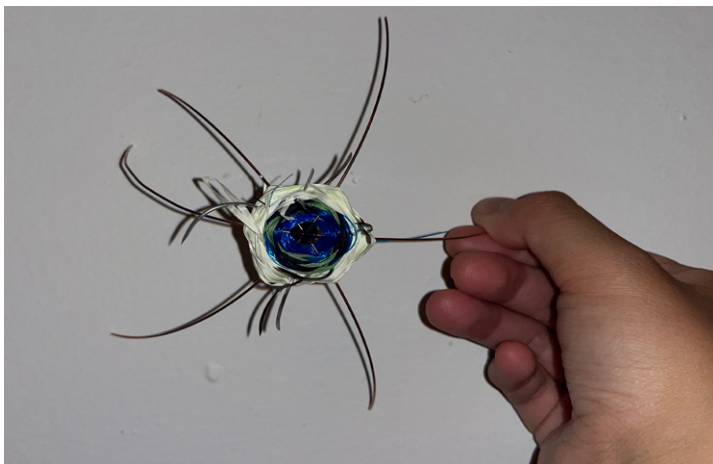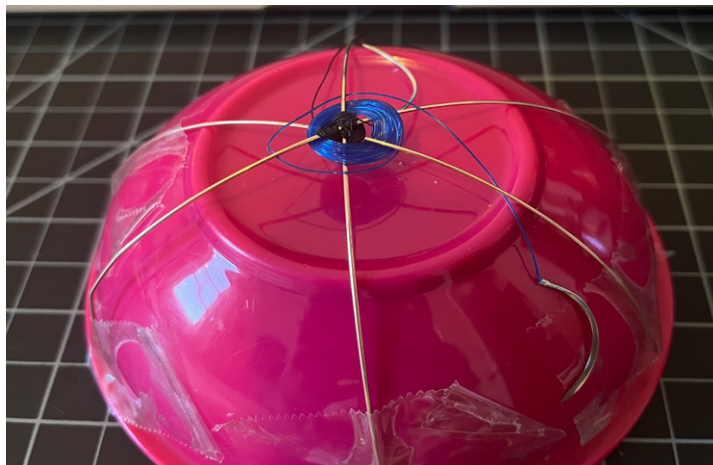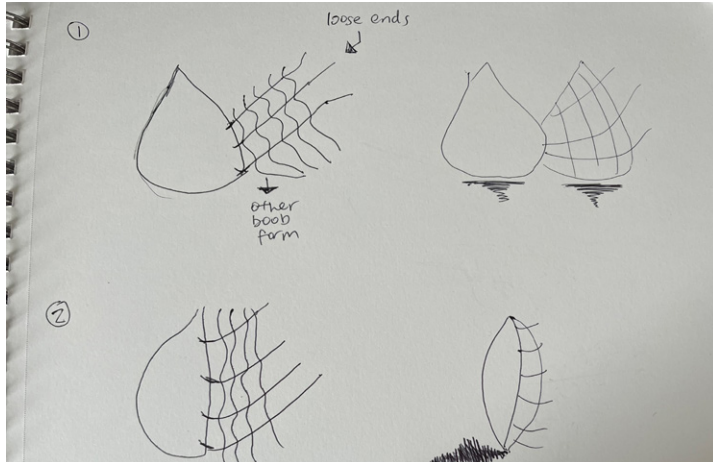
Project 3:
Plushies

CONCEPT: How can I translate "Sleeping on My Dreams" to a plushy?
I was listening to Jacob Collier's song, "Sleeping On My Dreams" and knew I wanted to translate that idea to a plushy. The title serves a double meaning, with literally sleeping (your dreams occupying the space between your head and your pillow) and with not pursuing your goals, ambitions, or dreams. The song is about Jacob's realization that he doesn't want or need to be in this relationship. It reminds me of Velcro, of kind of painfully ripping or pulling apart two things that once were whole. It is the separation of the world they built together within their relationship.

DESIGN
So, I made two plushy figures that live inside of a pillow, which represents their world. If you open a seam, affixed with Velcro, you can reach into the pillow and hold the two figures and see how they may draw or repel each other with random magnets in their bodies.

TAKEAWAYS
I set out to make little human plushies with magnets inside a pillow to represent a world created by two people, inspired by Jacob Collier's song "Sleeping On My Dreams." I learned a lot about the materials themselves, and the process of cutting and stuffing. Next time, I'd stuff as you go, use non-synthetic material better for hand stitching, and plan to cut with more margin than you'd expect.

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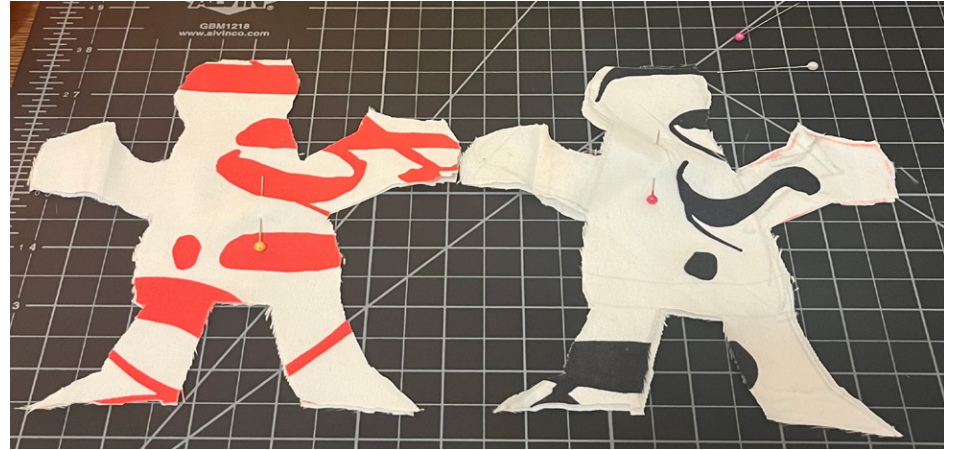
Project 4:
3D Scanning

CONCEPT
I was experimenting with EM3D, a 3D scanning app on my phone. I couldn't scan my whole head perfectly since I was by myself in Brower Park on a summer-like day in the middle of fall. Inspired by Janus, the two-faced Roman god of beginnings, transitions, and duality, I decided to recreate a bust of myself to honor the day that felt like a time of transition.

DESIGN
I took a scan of my head, one with my hat and one without. I am making slightly different faces, just as Janus. I then put the scans in Blender, cleaned the scans up, positioned them, and played with the lighting. View in SketchFab here:

TAKEAWAYS
Next time I scan, I will get better angles so I can create a more seamless and complete figure. The level of detail captured and missing are both interesting--the glitch aesthetics of these scans allow you to view the figures internally or 'between' faces, a perspective that a completely accurate scan may not offer. It'd be fun to become more proficient at Blender to be able to better manipulate scans.

Project 5:
Hybrid Crafts

CONCEPT

I broke down Holly Herndon's 'Jolene (feat. Holly+)' into visual and audio parts. Herndon's video features her digital twin covering the famous song in her own voice using machine learning. Thus, I approached hybrid crafts as an exploration of visual and sonic realities.

DESIGN

For the visual reality, I built an avatar of myself in Metahuman and imposed it on different photos from my life in Photoshop. I chose an image of an old park by my house, with my dog who has since passed. This is not obvious to the viewer. For the sonic reality, I took an old text message I sent to a friend and recorded me saying it with different effects: my real unedited voice, my voice pitched up an octave, and my voice pitched down an octave. The last is just my voice. Back to back, the listener's perception of reality is challenged.

TAKEAWAYS

In this hybrid craft, I tried to explore visual and sonic signifier of reality. Visually, it felt most successful when my avatar was scaled correctly and in more believable environments (for example, being outside). Sonically, I really like the repetition and ability to hear my voice begin from something machine-like and robotic to its original form, allowing you to question and better understand my voice and, more broadly, aspects that make a voice natural.

Project 6:
Additive Making

CONCEPT
Inspired by circular sculptures by Ruth Asawa, I began to get curious about the nega-
tive space in between the wire coils. This sculptures looks springy, airy, and boun-
cy. By focusing on the regular increments of negative space, I attempt to recreate it
with marshmallows.

DESIGN
I used marshmallows to try to capture the springy negative space. I layered them in
several ways, considering both vertical and angled stacks. In an effort to only use
one material for additive making, I burned off sections of marshmallows to get them
to stick together. I tried to create a coiled pattern to build a circular form.

TAKEAWAYS
The biggest challenge was to maintain a consistent method of sticking together the
marshmallows, which ultimately made this experiment less successful than the ideal.

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vertical stack

Pre-stuck affordance

angled stack

melt side & use like glue

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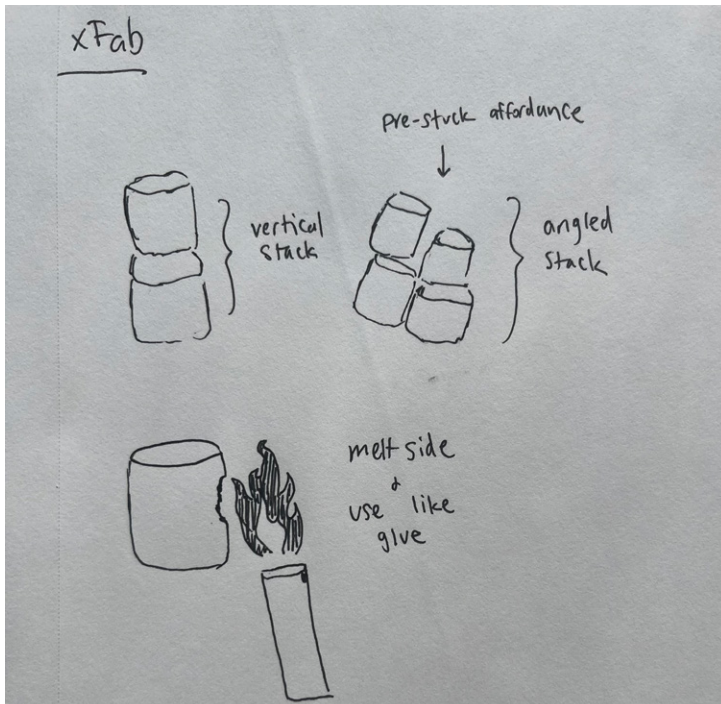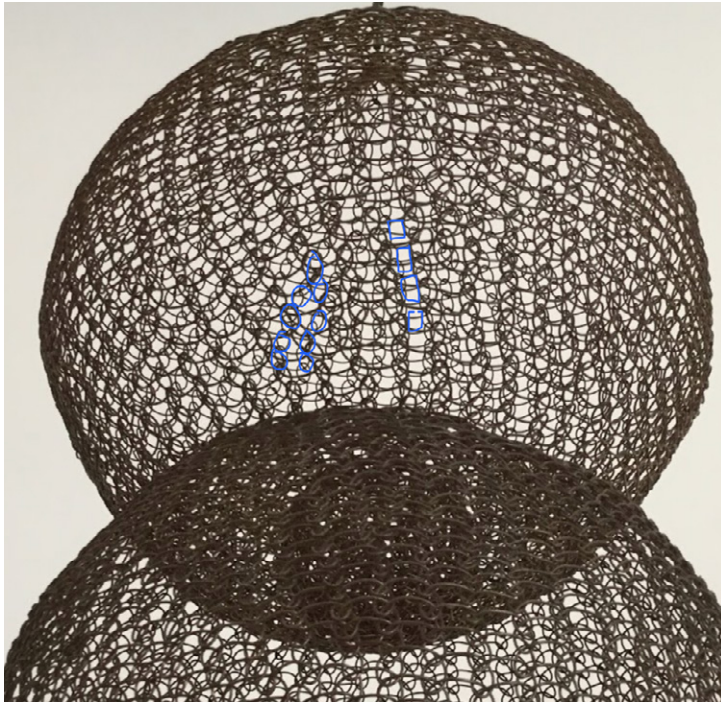
Project 7:
Molding + Casting

CONCEPT
I wanted to create something modular and tactile for molding and casting. I looked through the discards of the 3D printer and found a satisfying shape. I decided to create something impermanent and permanent, so I chose ice and silicone to experiment with the look and feel of two different opaque materials.

DESIGN
I used alginate to make a mold for both. I first cast silicone, and decided to use an angular part of the 3D printed part that would result in a pyramidal positive. The angle served as a helpful affordance for ease of removing the positive.

TAKEAWAYS
Next time, I'd leave the mold and cast in the freezer for less time. Per modular furniture, I think it would be cool to make a small piece of furniture from silicone. Or maybe an ice chair if I was somewhere cold!

Project 8:
Etching + Engraving

CONCEPT
I knew I wanted to use electric etching as my method for this week, so I wanted to
make something linear. The equality sign, the logo for the Human Rights Campaign
(HRC) came to mind. So, I tried to recreate it!

DESIGN
I set up my materials and tried two methods: blot and stroke. The blots yielded a
finger-print pattern, while stroke felt like water color, and I felt like I could use
it as a brushstroke. The first round I was not as precise with using a straight tape
stencil. For the second round, I prioritized that because I wanted to create some-
thing as smooth and even as possible.

TAKEAWAYS
Next time, I could play around with the etching texture and the subject I'm etch-
ing more intentionally. I focused more on aesthetics, wanting to create something as
smooth and even as possible, but I think there's more potential to play around with
the texture. For example, the 'pressing' gesture in the bottom half reminded me of
an abstraction of fingerprints. This could be a nod towards the lives lost during the
AIDS crisis if done with more intention. For now, it was a happy accident.
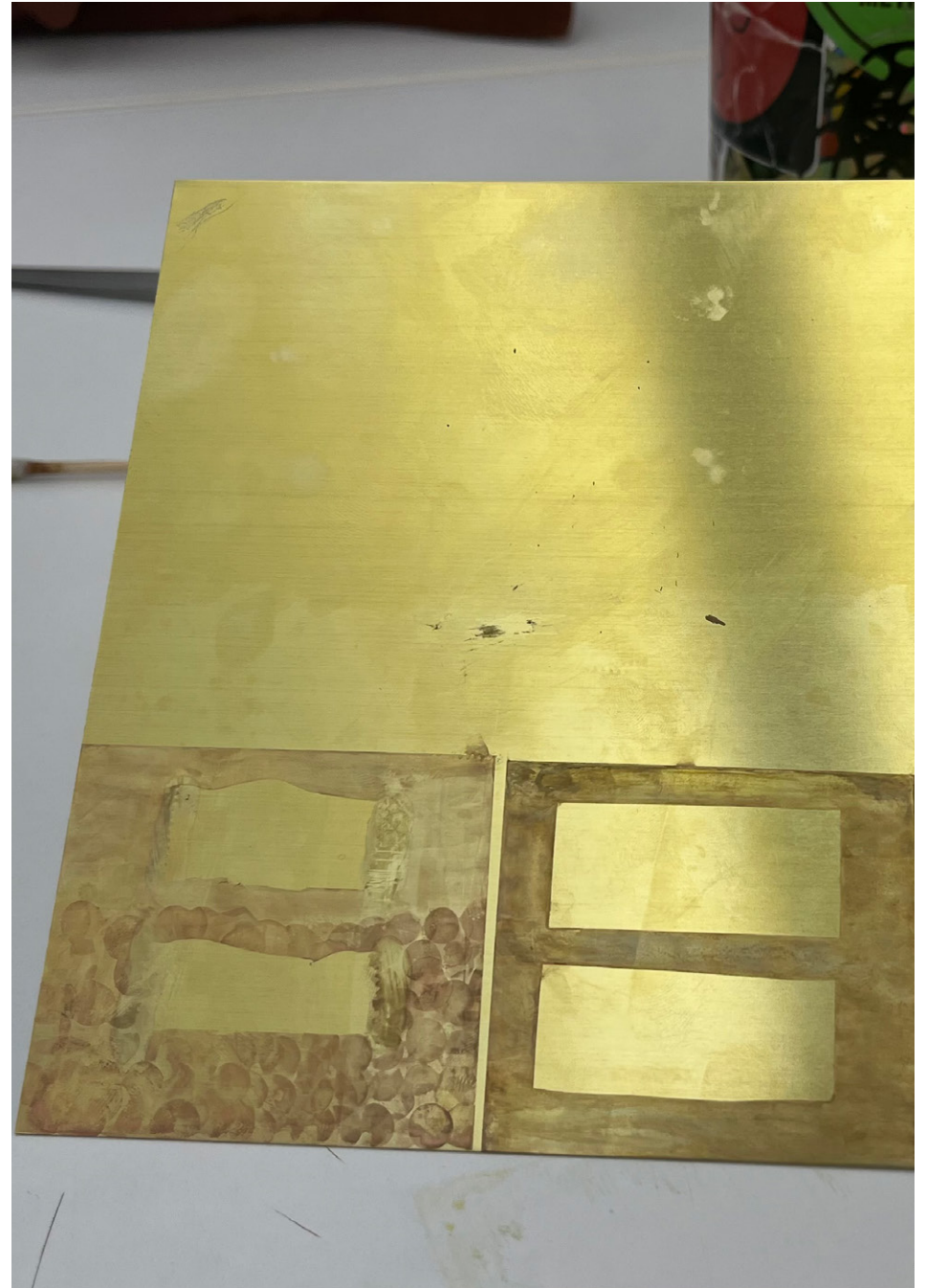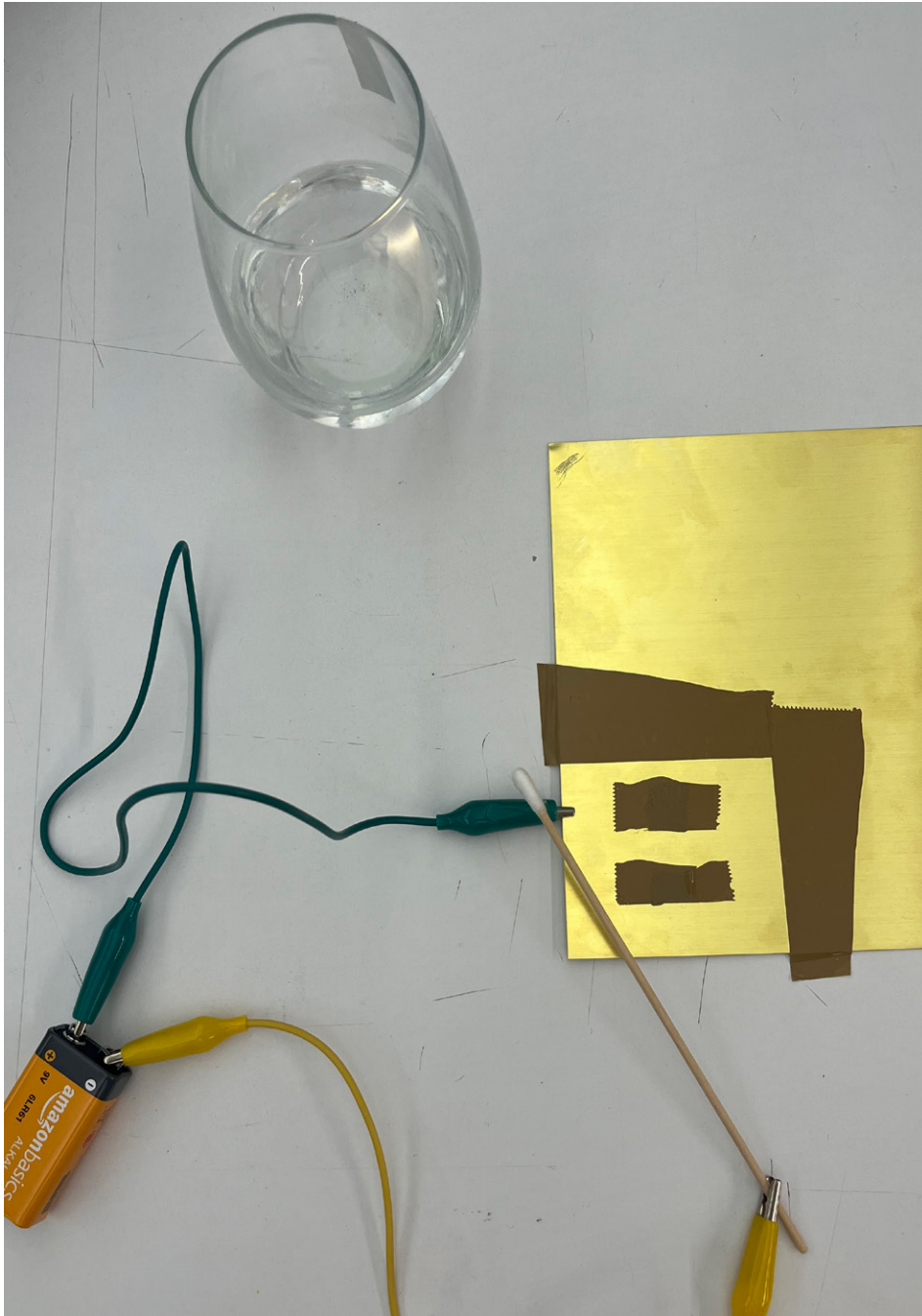
Project 9:
Electronics Design

CONCEPT
This week our class collaborated to make a Rube Goldberg machine. It included a fluid motion, a magnet toggle, and viscosity component. The machine is supposed to turn off the light in our classroom--we tried to leverage the affordance of a wall to help us.

DESIGN
Joy, Soumya, and I worked on the mechanism that would physically turn off the switch. We were using cardboard scraps, a spoon, ball pit balls, styrofoam scraps, string, jewelry wire, balloons, and tape. We made a pully system, so that the marbles falling from the first part would drop into a cup, causing the other side to raise and lift a support that would allow a spoon to hit a switch. We iterated numerous times, and classmates Rei and Seri helped us refine: using the back of the spoon with a ball or a rubber band to create more tension to snap.

TAKEAWAYS
This is really hard! There were a lot of moving parts. I think next time we could think more about the speed of the ball at different points in time. For example, the ball was moving too fast by the time it reached our bucket.
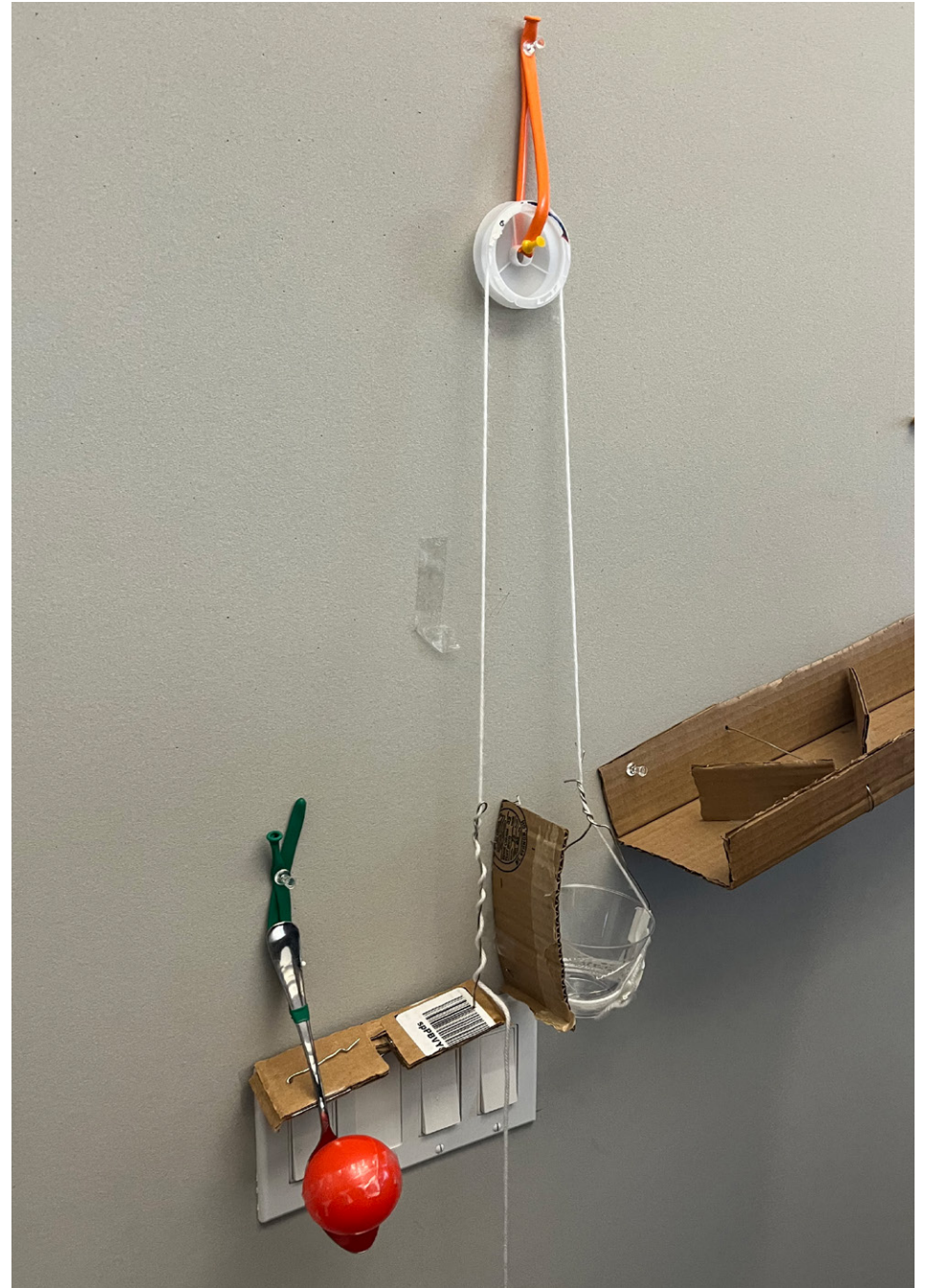
Project 10:
Sensing + Actuation

CONCEPT

I wanted to better understand the leaves in my backyard, so I did leaf chromatography this week. A pathway separates my and my neighbor's house. The leaves along this path represent a feeling of home. It was special because my family was in town for the break. My uncle is a former chemistry professor and my aunt is an artist--both were super eager to help, and we got to collaborate for the first part of the project.

DESIGN

I gathered about one handful each of green, yellow, and red leaves from the pathway. I then got all my materials set up: knives, cutting boards, glass jars, coffee filters, paper towels, isopropyl alcohol, and a pan. The whole process took about five hours!

TAKEAWAYS

It was challenging to isolate the color. The glasses I had made it hard to track the actual chromatography process--I would be more rigid about time for observing the color next time. It was challenging to see the isolated, components of color for each type of leaf.

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