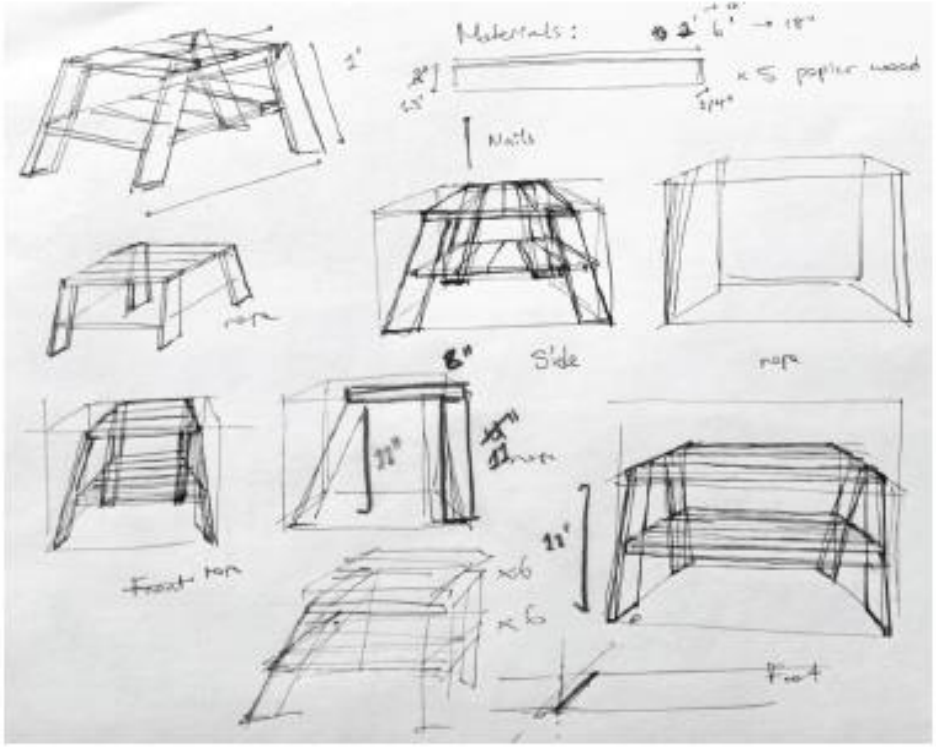
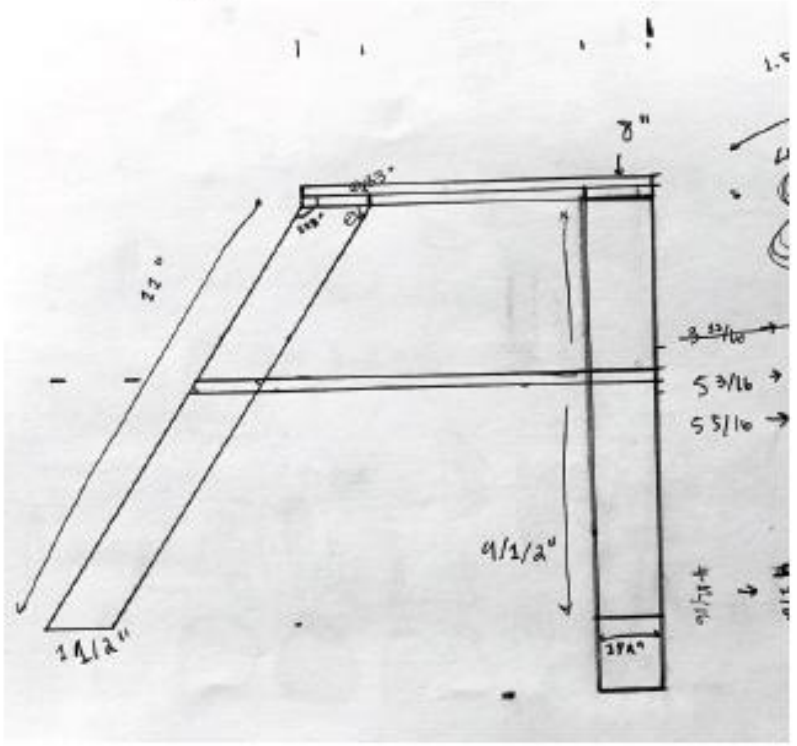
Industrial Design Portfolio

Rebecca Wang

Side Table (Prototype)



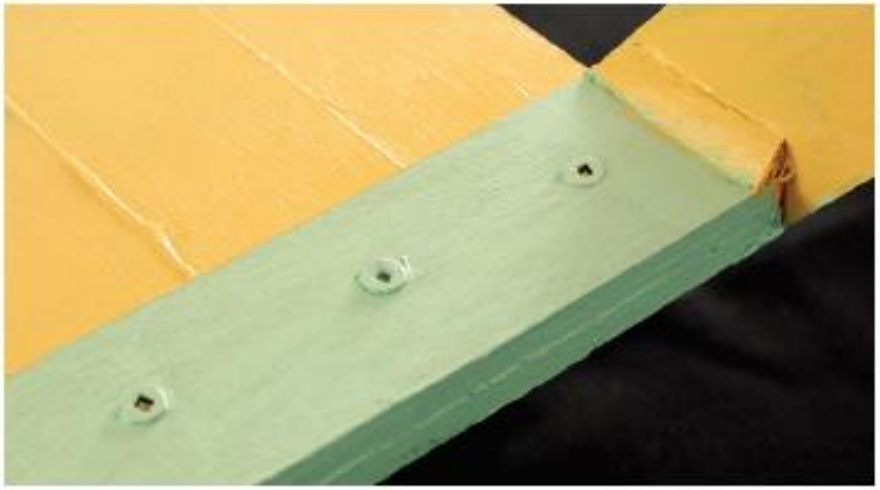


Above: (Left) Sketches conceptualizing the table's design.
(Right) Final sketch drawn to scale with measurements.

Concept: I wanted to make a prototype of a side table that would be lightweight and simple, with easy to access shelves. As a result, my design is a table made of two simple, strong shelves with straight back legs and slanted front legs. The legs are slanted to allow for additional shelf storage space, and create an interesting and dynamic form making this piece a practical and beautiful addition to any living space.

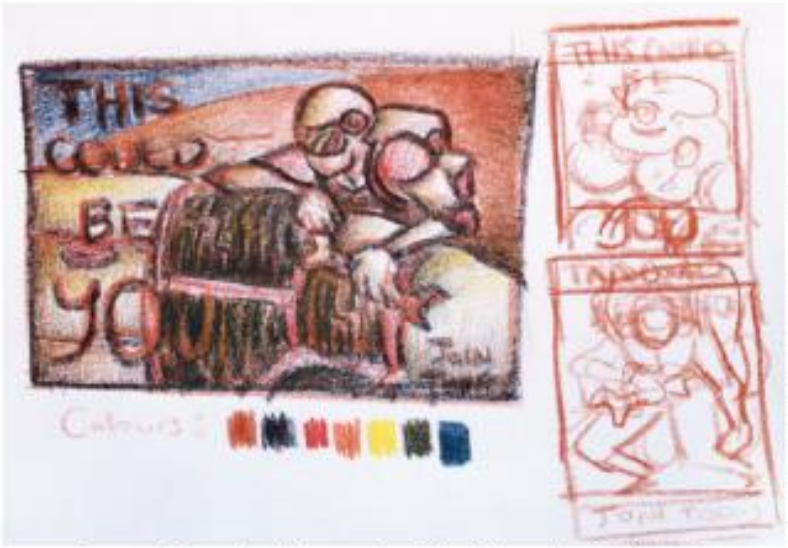
Process: I began with a series of sketches with ideas for the shape of the table. When I settled on the final design, I made a scale drawing of the table from the side to help me figure out how much wood I would need to buy, and the dimensions they needed to be cut to. I began to construct the piece by first gluing together the shelves, and then screwing them together for stability. I nailed the shelves to the legs and adjusted the legs until I found the right shape. After putting more nails into the table to strengthen it, I attatched additional triangular supports where the shelves and legs met. I then painted the piece with acrylic paints.

Medium: 1/4" x 1" x 2' wooden planks, acrylic paint.



Above and Right: Views of the finished table from various angles. The table was painted with an accent colour on the inside to create emphasis on the structure of piece.

Left: Detail of shelf structure. Additional supports were added to the legs for strength. The support was made using scrap pieces of wood left over from construction.



Composition sketches and original thumbnail (above).
Colour studies for final design (below).

Explore Your Future

Concept: Recently, there is a large movement of youth pursuing careers in technological fields. This large poster design is an expression of this idea, through a modern take on propogranda posters. The poster I have designed is made by a fictional space exploration company encouraging youth to join their team and "explore" their futures in technology and science.

Process: I began with creating thumbnail sketches of a figure that represented the youth in a futuristic environment to explore different compositions, and I chose the sketch on the right. I continued to explore different slogans (a key component of a propoganda poster) and colour schemes, making colour studies for the final painting. While I initially began with cool colours associated with space (bottom left), I decided that I wanted to use warmer colours to create a more inviting feeling, as the poster is meant to be persuasive and express the opportunities in technology. I used a combination of the colours in the bottom middle and right sketches when I painted the final poster (see next page).

Medium: Inktense pencil and acrylic ink on sketchbook paper (sketches). Acrylic ink and pencil crayon on watercolour paper (poster).


EXRLORE
YOUR
FUTURE
GALACTIC
CORPS

Figure Drawing

Medium: Conte on pastel paper (above)

Abstract

Concept: An abstracted depiction of my daily journey to and from school.
Medium: Ink, marker, collage, acrylic gel medium, and soft pastel.

Relations

Concept: This illustration features two friends who had a fight, but a meeting in the rain helps them to reconcile.
Medium: Marker, watercolour and pencil crayon.

Obsolete

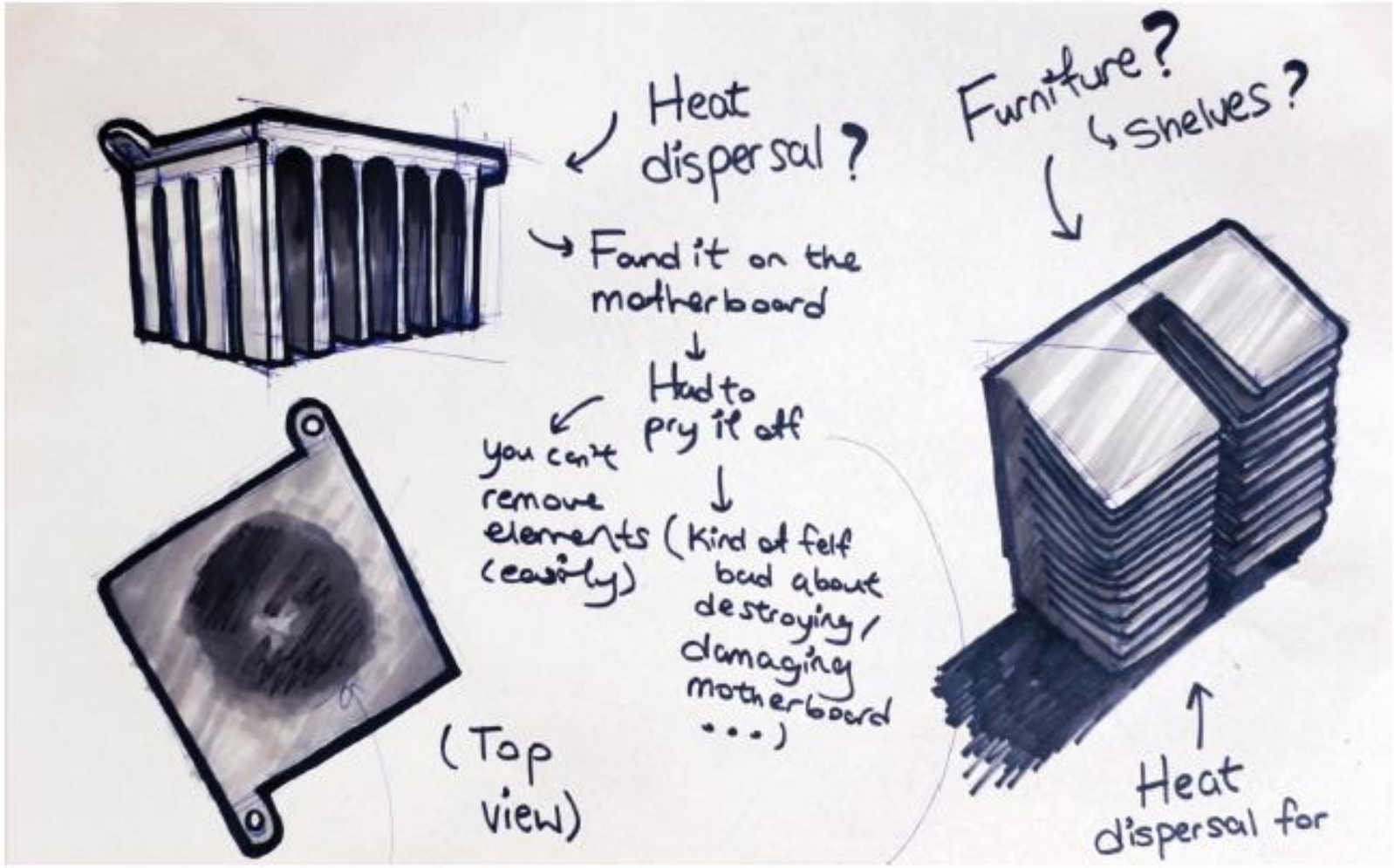
Concept:
Computers are a strong example of obselesence. They become out of date in a few years, because they are incompatible with new technology, forcing users to purchase new computers. In this project, I took apart an unused old computer to learn more about this technology, specifically how the computer is built and what kinds of materials can be found inside of an old computer (how many of these products contain important pieces of technology which are still functional and valuable, but remain unused or thrown away). I also took the parts taken from the computer and re-used them to make small sculptures.

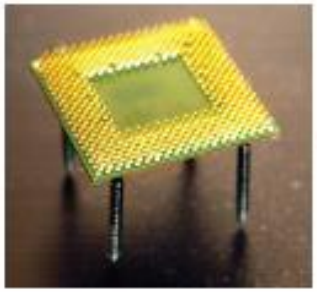
Process: I began by taking off the case of the computer, and then I took pieces out of the computer individually, including a USB card, the hard disk and the motherboard. I gathered these materials so that I could observe them more closely, and so that I could use them later as materials for creating sculptures. I also took notes on my process of deconstructing the computer, recording the pieces that I found by sketching them, and wrote down my thoughts during the process.

In an effort to not waste the materials that I had taken from the computer, I created a miniature table and bench using the CPU and a Ram card, as a means of expressing the waste of valuable resources and technology. While the final product of this project were two small sculptures meant to express the waste created through obsolesence, the primary purpose of this process was to learn more about how the technology that we take for granted works.

Medium:
The two sculptures were created using a Ram Card, CPU, and screws taken off of the motherboard.
The notes were taken using pen and marker on drawing paper.

Top Right: Taking apart the computer.
Right: Notes and drawings recording my thoughts during the process of deconstructing the computer.





Notes for computer heat dispersal elements (above). The two sculptures created, a miniature bench made from a RAM card (far left) and a miniature table made from the CPU (left). These sculptures are meant to represent the waste that obselesence creates.

Chair Sculpture

Concept: This chair sculpture is inspired by the design and social movements in the 1950's. The form of the chair was based off of the shapes of furniture during the time period, while the colours of the chair (purple and yellow) represent the beginnings of consumerism, and the association of material wealth with success.

Process: I began creating this chair by experimenting with different simple, round forms in polymer clay. I wanted to create a chair form made of only one piece, as this was a common chair design found during the 1950's. Once I created a round, cupped form that I liked, I boiled the clay and attatched pieces of brass rod to form the legs of the chair. Finally, I painted the chair to give it a "plastic" look, to better represent the material that the chair designs that the sculpture was inspired by are made of.

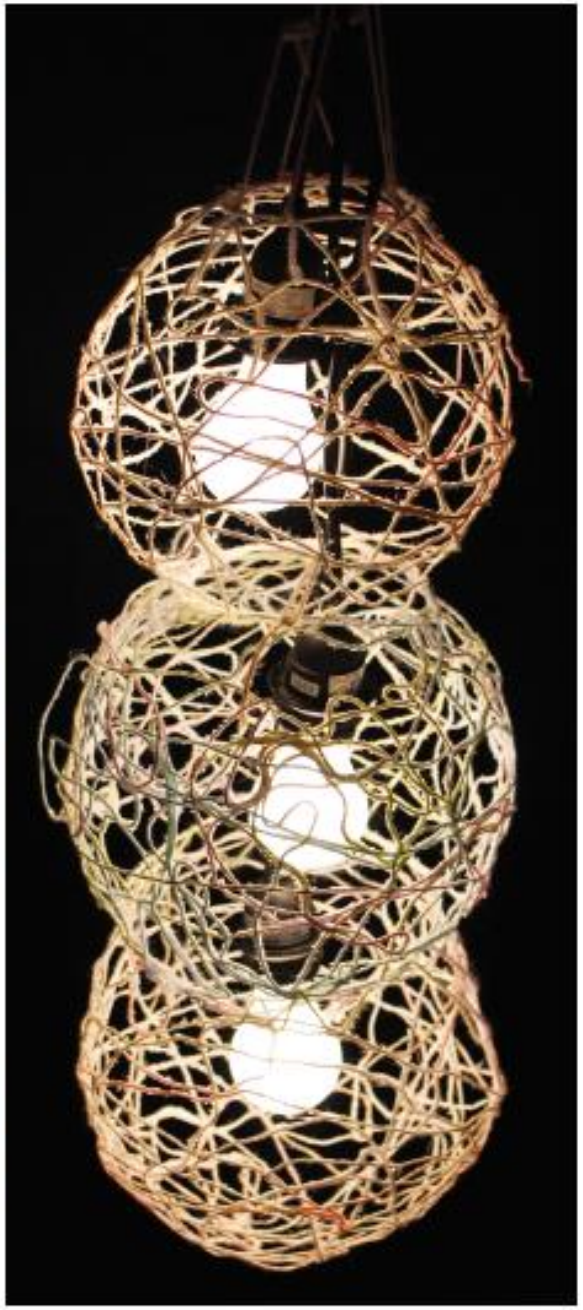
Medium: Polymer clay covered with acrylic paint, brass rod, and hot glue.

String Lamp

Concept: I was inspired by hanging pendant lamps made with thin strips of material that create a sculptural structure, which highlights the form of the material and allows light to shine through. I wanted to create an extension of this idea by creating a three light pendant lamp that could be made with household materials such as yarn and glue.

Process: I began with sketches exploring different shapes of lamps (above right). Once I decided that I would use yarn and what the shape of the lamp was, I began creating the form by wrapping yarn soaked in cornstarch and glue around balloons (above left). I used balloons as they would help me create a rounded form, and I could vary the size of the lamp forms. Once the yarn dried, I popped the balloons and took the forms that I made and tied them together (above center). I then inserted three pendant lights into the lamp and tied the lamp to the wires to secure the position of the lights. I also secured the three seperate wires together to allow for easier handling of the product.

Medium: Yarn



Above: Completed lamp consists of three forms that are connected together and contains three lights.
Center: Details of lamp.
Right: The lamp, turned on, creates a beautiful effect of light shining from inside of the sturcture.

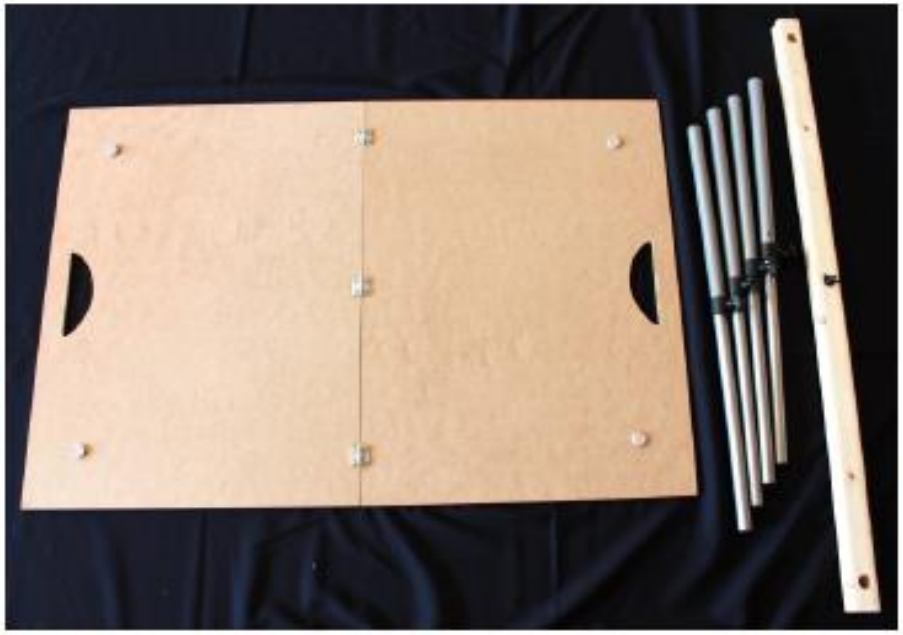
Folding Portfolio Table

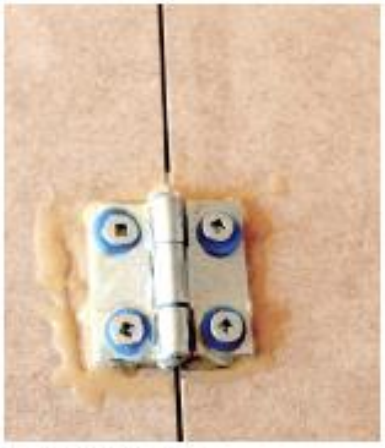
Concept: The design for this portable folding table was inspired by a need for a convenient method of carrying my artwork. A large portfolio case is not practical for carrying smaller work or travel on public transit, as it is hard to hold, and lacks the rigidity needed to protect the work inside. Another need that I wanted to meet with this design is the need for portable workspaces - I find it frustrating when I need a flat surface to work on, but there are no tables. I designed the case so that it doubles as a folding table when set up with portable, height adjustable table legs that allow for quick and easy set up of a temporary working area.

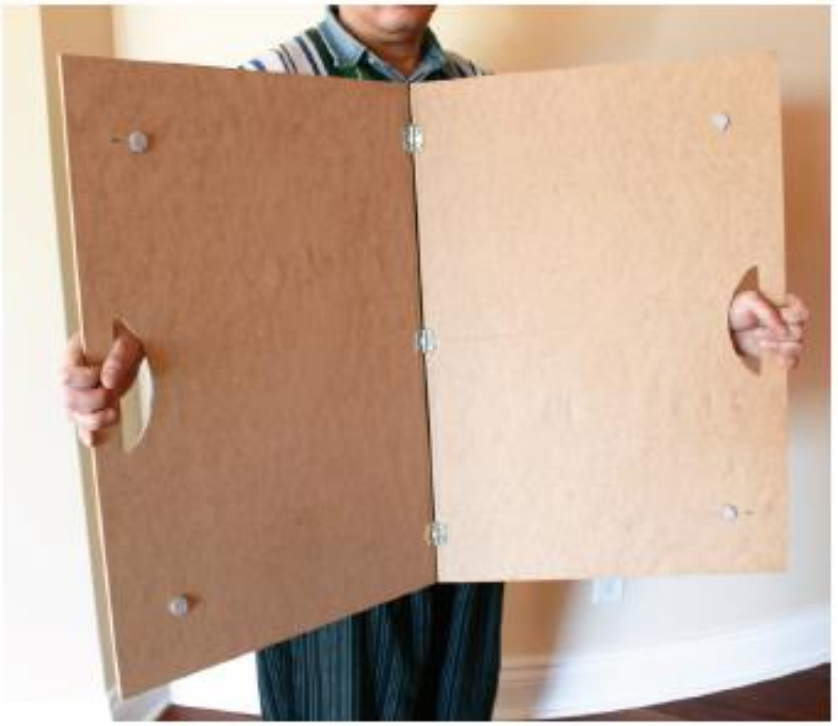
Process: I began with some sketches exploring the idea of a folding table which doubles as a portfolio case (left). Once I had decided on the overall design of the table, I began to work on a cardboard prototype (above), which focused on the folding motion of the portfolio case as well as investigating the potential shape of the handle. This made me consider how I would build the final table with hinges and how to draw the handle. After I decided on the final size (2' x 3'), I bought a 1/4" MDF board, because it is lightweight, but still provides the rigitiy intended by the original design. (Continued on next page)

Medium: 1/4" x 2' x 4' MDF Board, hinges, metal tubes, 1" x 1' 3/8" x 8' wood.

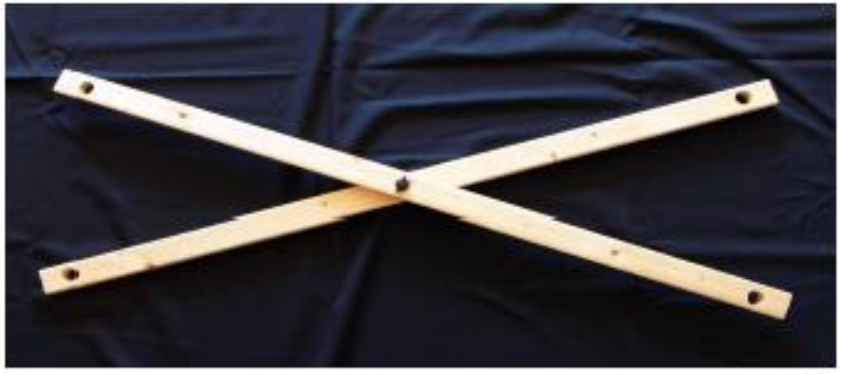
Process: I began to work on the final table by drawing the shape of the handle on one side of the board, then drilling three holes - one large hole in the center and two on the edges. I attached the two halves of the table using three small hinges and screws, then folded the halves together and drilled holes through the other board for the other handle. Once the holes were drilled, I began to carve out the final shape of the handle using a router. I drilled two holes on the edges of the handle to create a rounded shape for more strength, and have the portfolio case be more comfortable to carry. (Continued below)

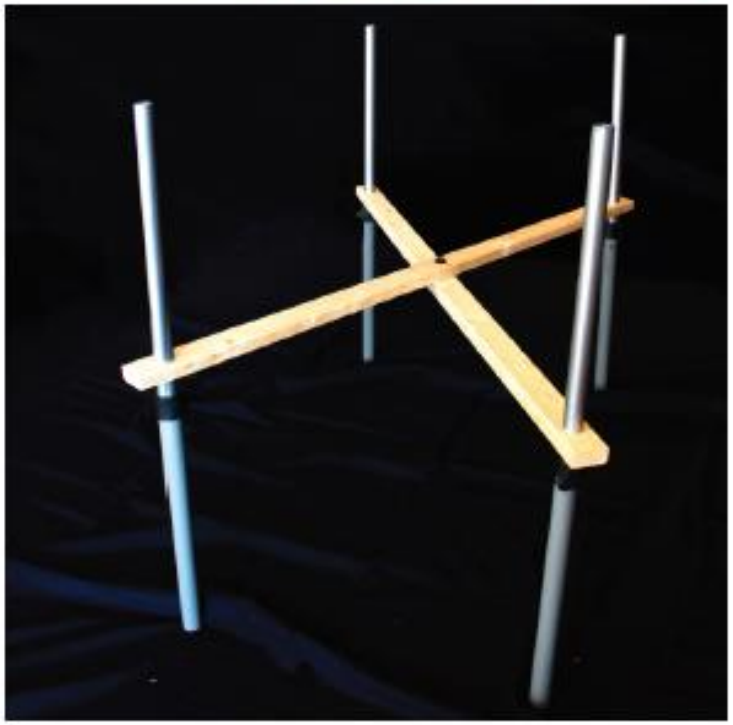






The legs of the table (see left and next page) were made using repurposed metal poles from an old product and allowed for adjustable heights. Once these poles were cut to size to allow for a maximum height of 2', I drilled holes through two pieces of wood (see top of next slide) to form a crossbrace for the legs. The table is set up by putting the legs through the crossbrace, adjusting the width of the brace and the height of the legs, and unfolding the table and placing it on top of the legs.





Treasured

Concept: This photo is part of a series depicting adventure in natural environments, inspired by my childhood love of the stories about explorers. This photo is a depiction of an adventurer who has found a rare treasure.

Process: I chose to work in a local trail to reflect the natural environment where these stories about explorers take place. I tried experimeting with various kinds of shutter speeds and lighting conditions, to try and make use of the environment and the reflective quality of the jeweled doorknobs that I was using as the treasure. I discovered that placing the jewels against a dark background emphasized the reflective quality of the material, so I chose to use a dark tree stump as the background.

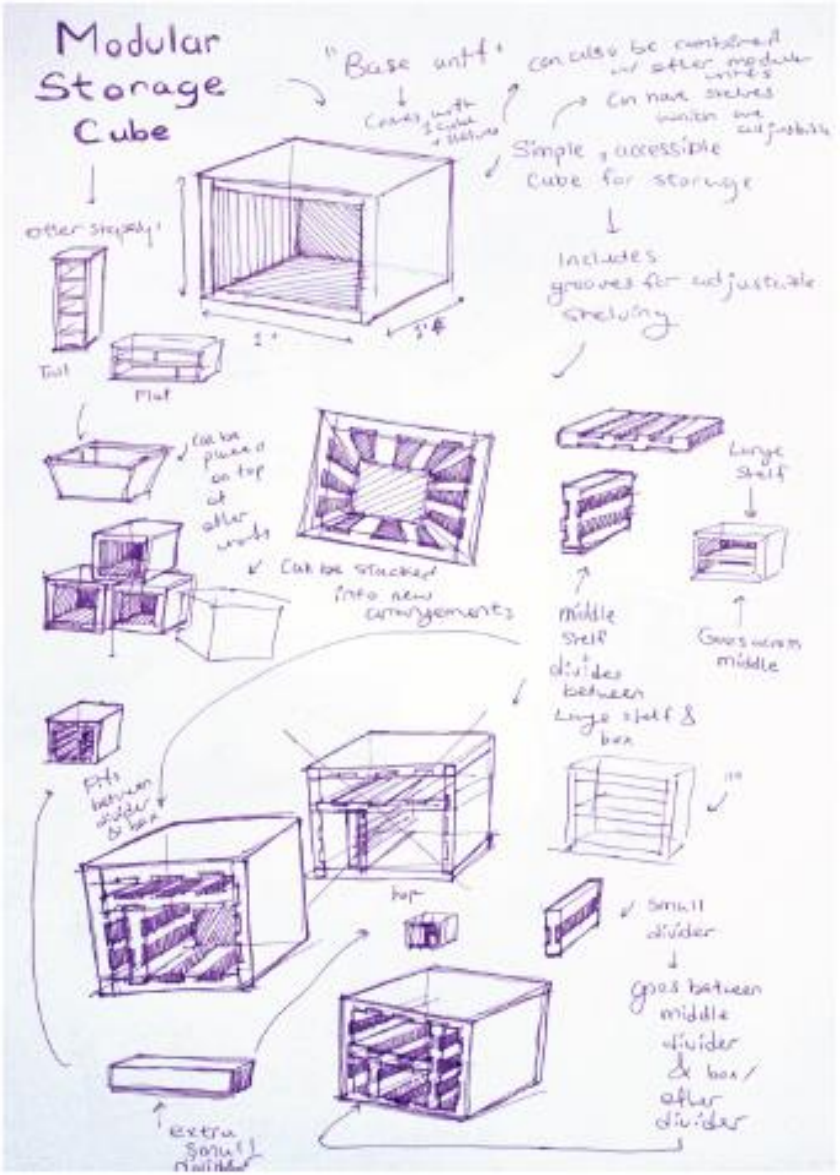
T-Shirt Design

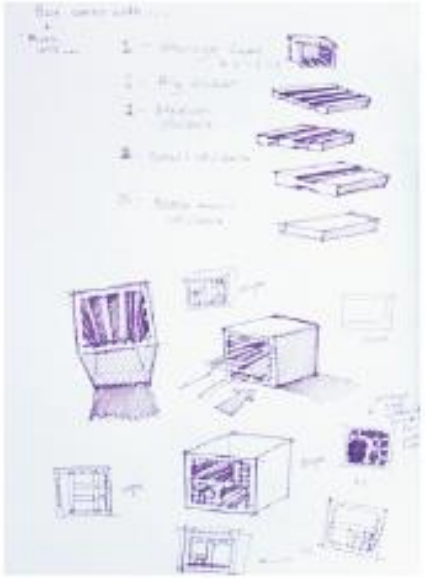
Concept: This illustration is part of a collaborative t-shirt design done as a part of Merivale High School's Communication and Design Focus Program. The prompt was to depict yourself as a fantasy character. I chose to design a mascot of a forest elf to represent myself, relating to my interest in nature and the gentle side of my personality.

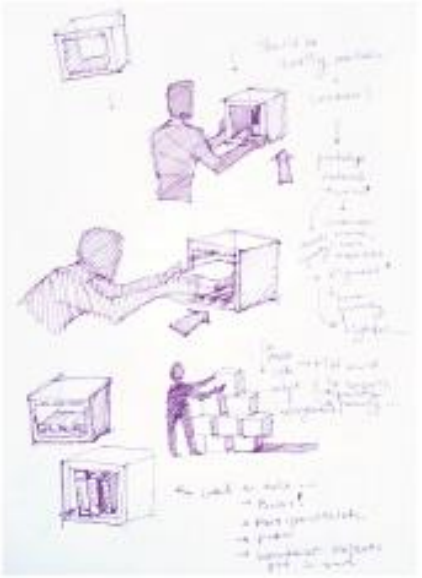
Process: My original sketches experiment with different versions of my outfit, including a cape and boots to match the forest environment, and a potential accessory that could symbolize nature (the flower). Once I found a design that I liked, I created the final illustration (top center) using ink and screentone.

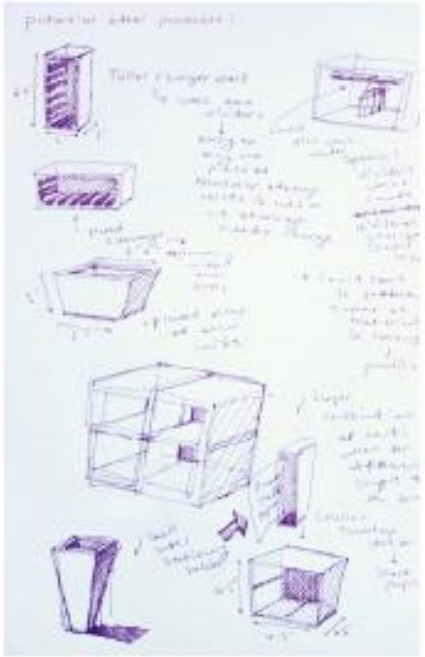
Medium: The sketches were made using pencil and acrylic ink. The final illustration was made using acrylic ink, acrylic paint and screentone. The t-shirt was made using silkscreen on fabric.

Modular Storage Cube









Concept: This storage cube is one of a series of modular storage devices inspired by a need for customizable storage that could be modified based on personal needs. The user begins by purchasing a "base unit", a 1' x 1' x 1' cube with grooves and different divider sizes. The user customizes their storage by buying more dividers or storage devices, then arranges the devices together. The cube that I have built is a functional prototype.

Process: I began with a series of sketches exploring the size and shape of the cube and potential other storage products. Once I decided I would build the base unit, I calculated the size of the cube and dividers as well as the positions of the grooves.
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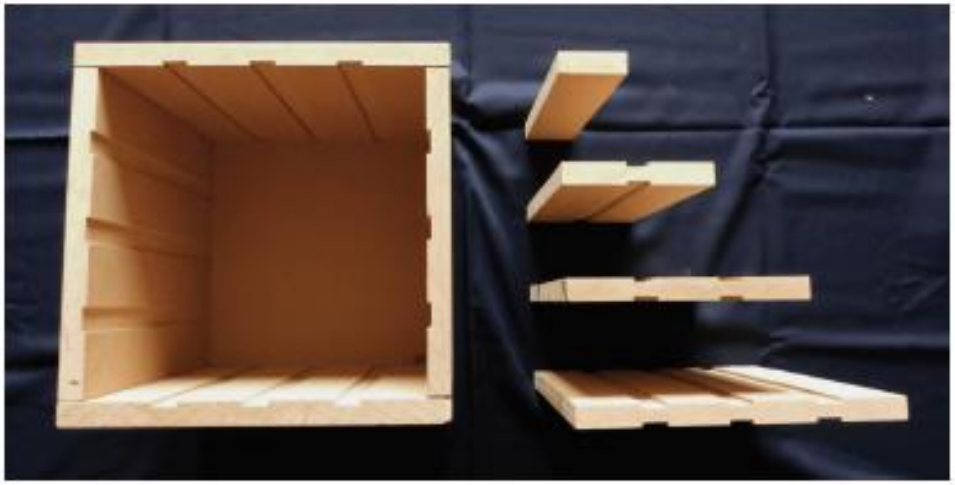

Process: I purchased 3/4" MDF board to build my prototype. I chose this material because it was a good match for my original design sketches, which used a thick, smooth material for the cube, as I wanted the design functionally strong and simple.

Once the board was cut to size, I created grooves in the four walls of the cube, and on both sides of the dividers, by using a router. I made grooves on the sides of the cube to have the cube be customizable through different arrangments of the dividers, and have it be easy for the user to arrange the cube based on their needs as the dividers can be simply re-arranged by sliding them into to the grooves. I decided to create three grooves on the sides, to keep the design simple while still allowing for large, medium, small and extra small dividers to be used. The cube was put together, and was tested for its durabiliy and practicality by experimenting with different divider sizes and arrangements (top) and placing different objects inside of it (left).

Medium: The sketches of the product (above) were drawn using pen on sketchbook paper. The prototype was built using 3/4" MDF board.