

Caleb Chang

Weight-Adjustable Hatchet

Camping Product Design

Weight-Adjustable Hatchet

Design a functional camping product that not only meets the demands of outdoor enthusiasts but also introduces new solutions from common to unique camping scenarios.

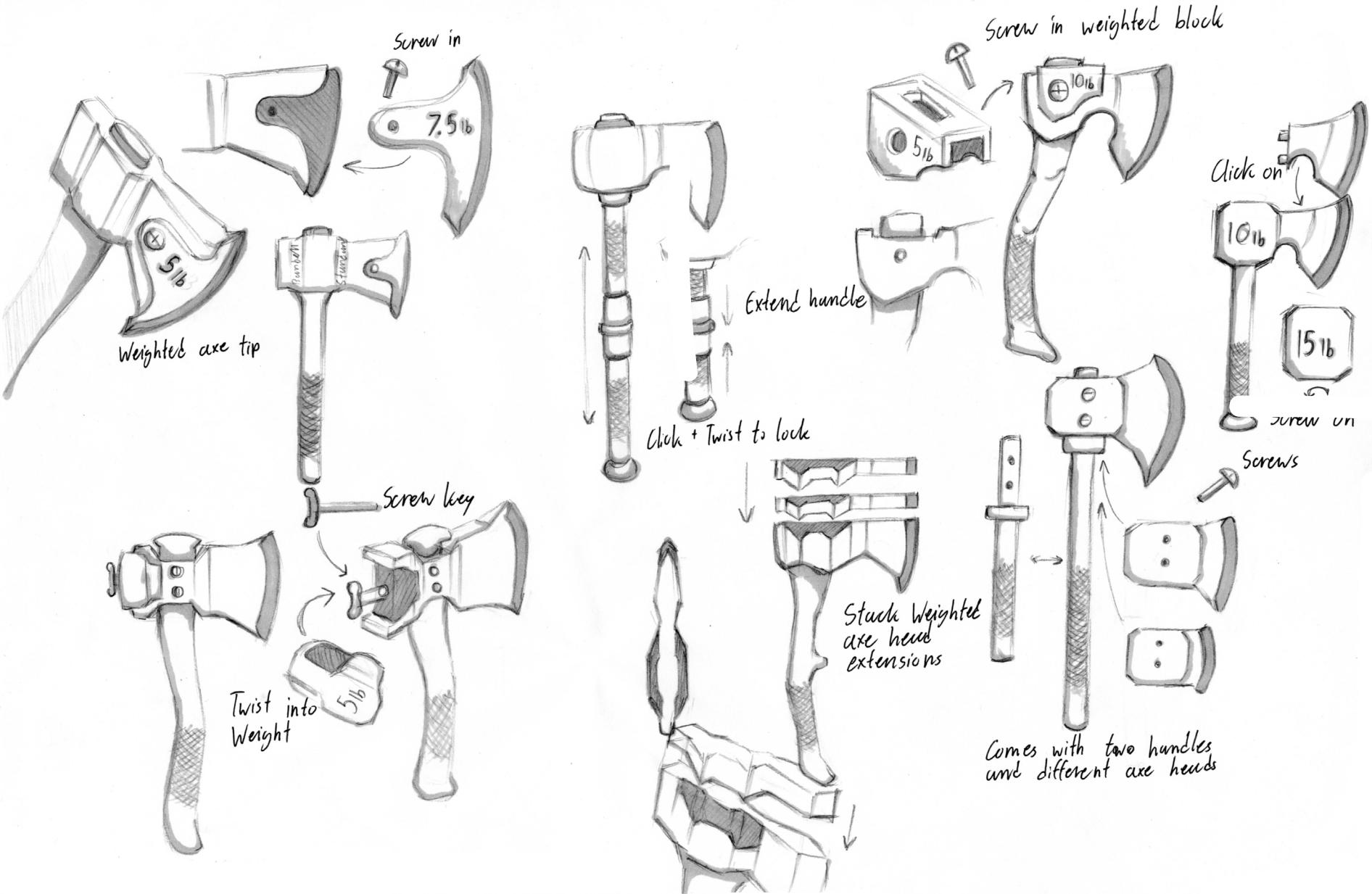
A camping hatchet designed for more efficient wood chopping by utilizing gravity and an adjustable weighted clip (1/2 lb). This removable weight allows users to customize the hatchet's swing, enhancing force and speed as needed.

Ideal for camping and fitness enthusiasts who prioritize sustainability, this hatchet aligns with eco-conscious practices while offering a practical tool for outdoor use. Its design ensures ease of use for individuals with a general level of fitness, contributing to reduced manufacturing waste.

Dimensions: 17.5" x 6.5" x 2"

Materials: Steel, Pine, Spray Paint, Clear Coat, Polyurethane

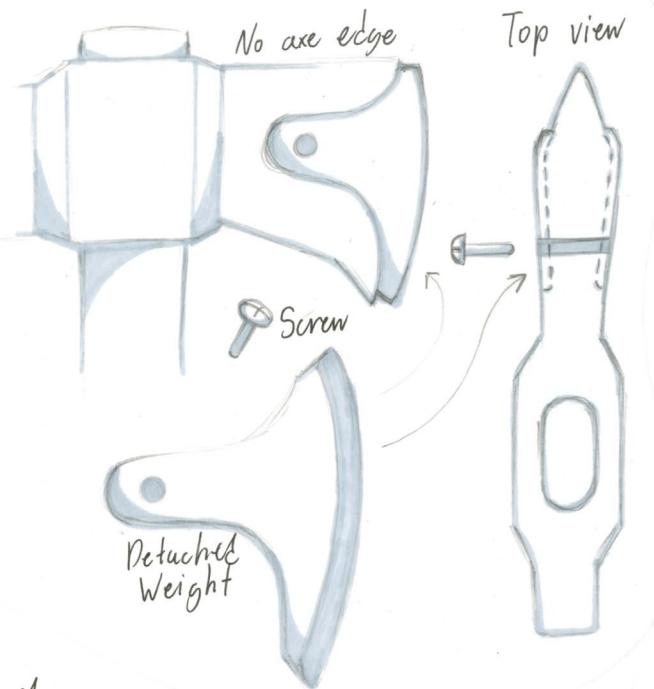




Hatchet concept sketches that explore unique methods of applying weight and visual aesthetics.

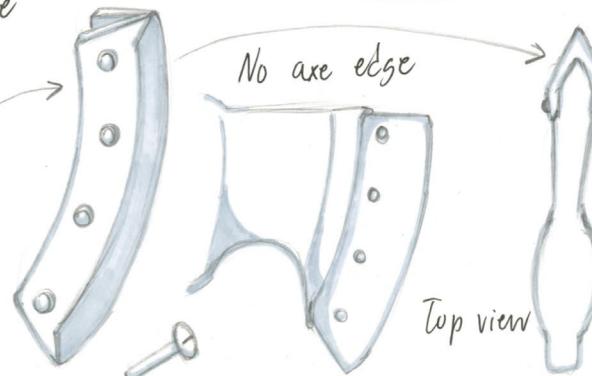
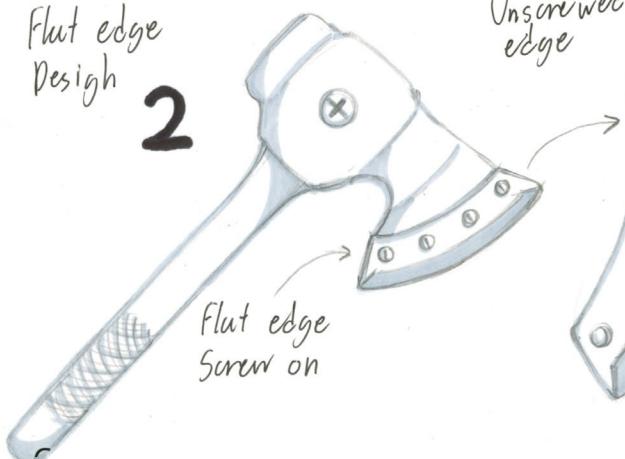
Screw-on
Design

1



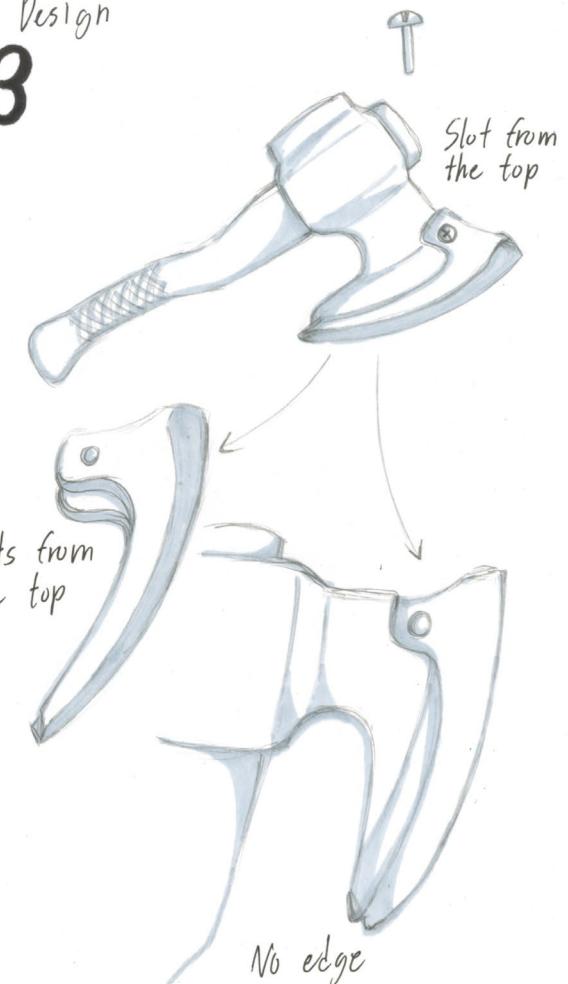
Flat edge
Design

2

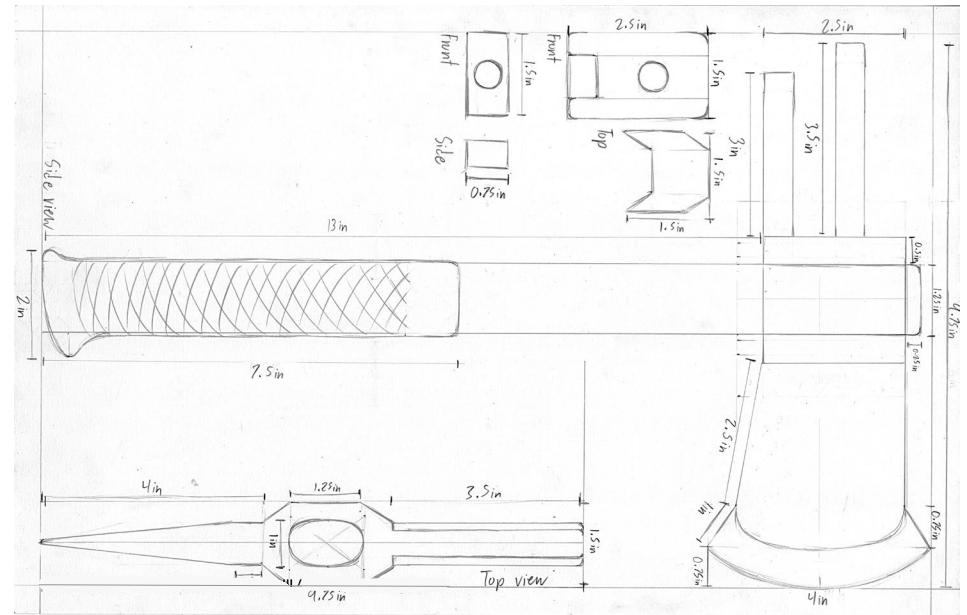
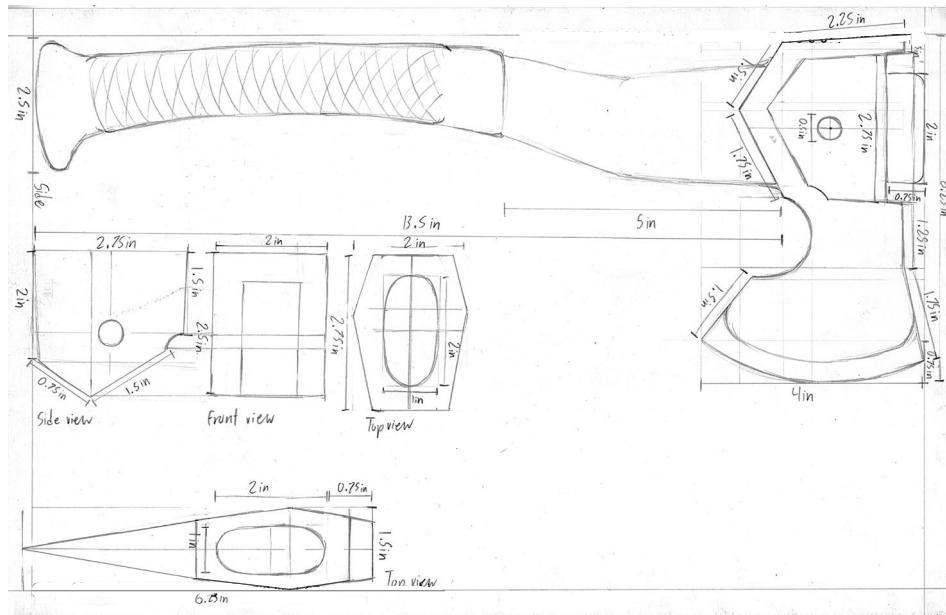


Top-slotted
Design

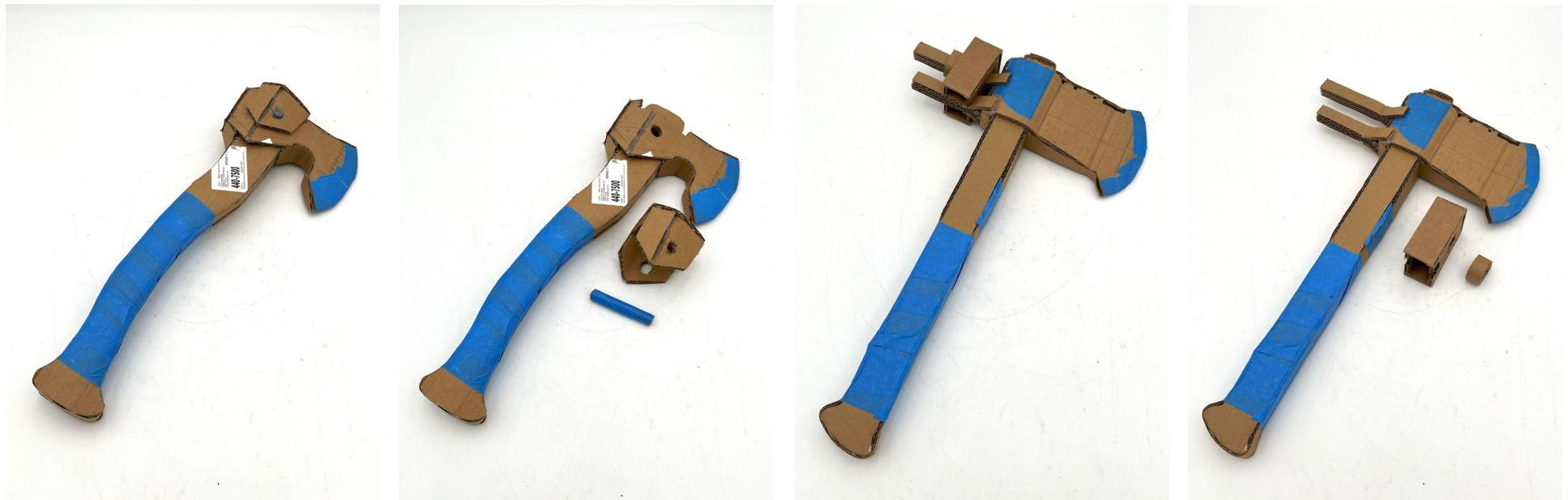
3



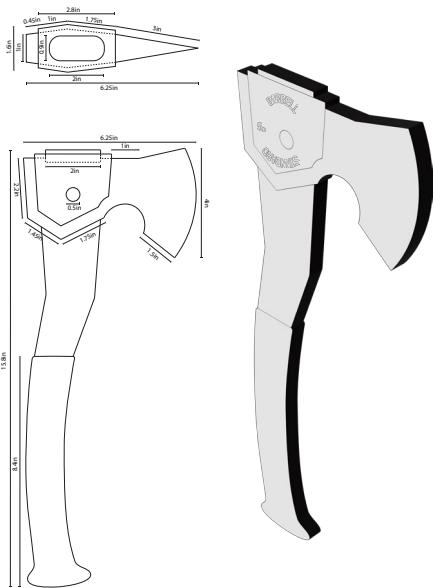
Refined concept sketches that focus on the hatchet's mechanisms and detailed shots.



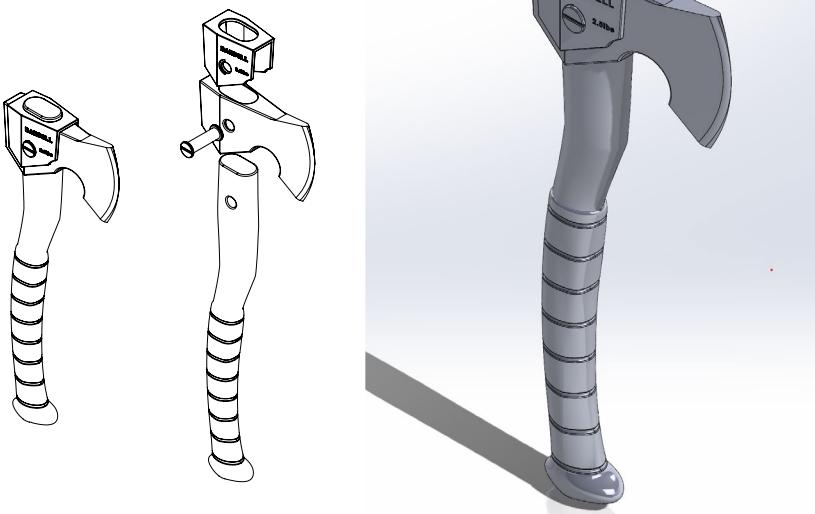
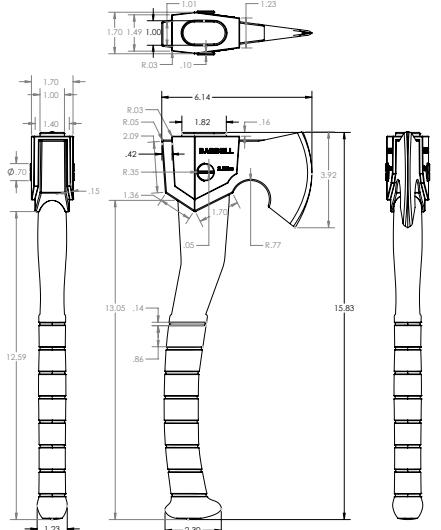
Orthograph sketches that provide different views and measurements of the hatchet and their components.



Cardboard models that explore the hatchet's ergonomics and testing mechanisms.



Adobe Photoshop orthograph and renderings that help establish a color and material theme.



Solidworks orthograph and digital model for precise final dimensions and functional mechanism.



Weight Clip

Axe Head

Screw

Wood Handle

Rubber Grip



Keyshot renderings with full and exploded shots, applying color, materials, and defining components.



Cutting, welding, grinding, carving, assembly, and finishing process.



Physical model with actual materials for further testing of ergonomics and mechanisms.



Weight-Adjustable Hatchet

Final Pictures

Caleb Chang



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Reflection

This project was a transformative learning experience that strengthened my creativity, adaptability, and technical skills. Initially, I focused too narrowly on a single idea, but embracing innovation led to a unique, self-sustaining design.

Perfectionism occasionally slowed my progress, but I learned to balance quality with efficiency, improving both the final product and my overall satisfaction. Reflecting on my choices helped me see new possibilities, and in the future, I'd prioritize flexibility and experimentation.

Developing a fresh hatchet concept challenged me mentally and physically, pushing me to refine my design process and problem-solving skills. I enhanced my proficiency in Adobe Photoshop, Illustrator, SOLIDWORKS, and Keyshot while strengthening my orthographic and model-making abilities.

Above all, I learned that progress matters more than perfection. Letting go of rigid expectations allowed me to meet deadlines and create something I'm proud of.

Streamlined Electric Shaver

Selfcare Product Design

Streamlined Electric Shaver

Design an aesthetically pleasing selfcare product that deals with a user's pain-point through research, interviews, and experimentation.

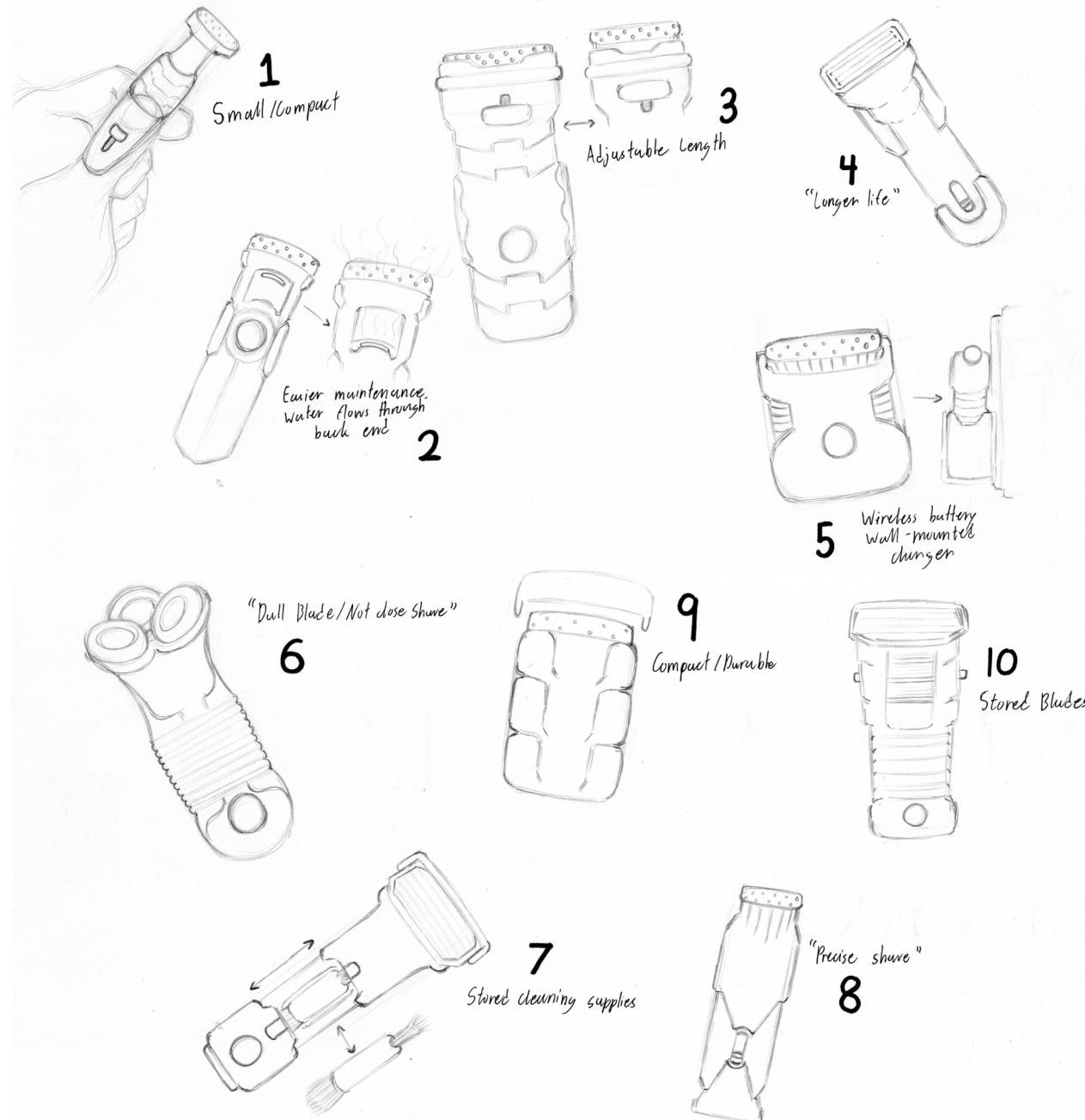
A sleek electric shaver designed to enhance the shaving experience with an innovative cleaning feature. It includes a hatch on the back shell that, when opened, allows water to flush through the shaving blades and out the foil, efficiently removing trapped hairs.

This design caters to male users seeking a streamlined, hassle-free way to maintain their shaver. The target demographic ranges from young adults to adults.

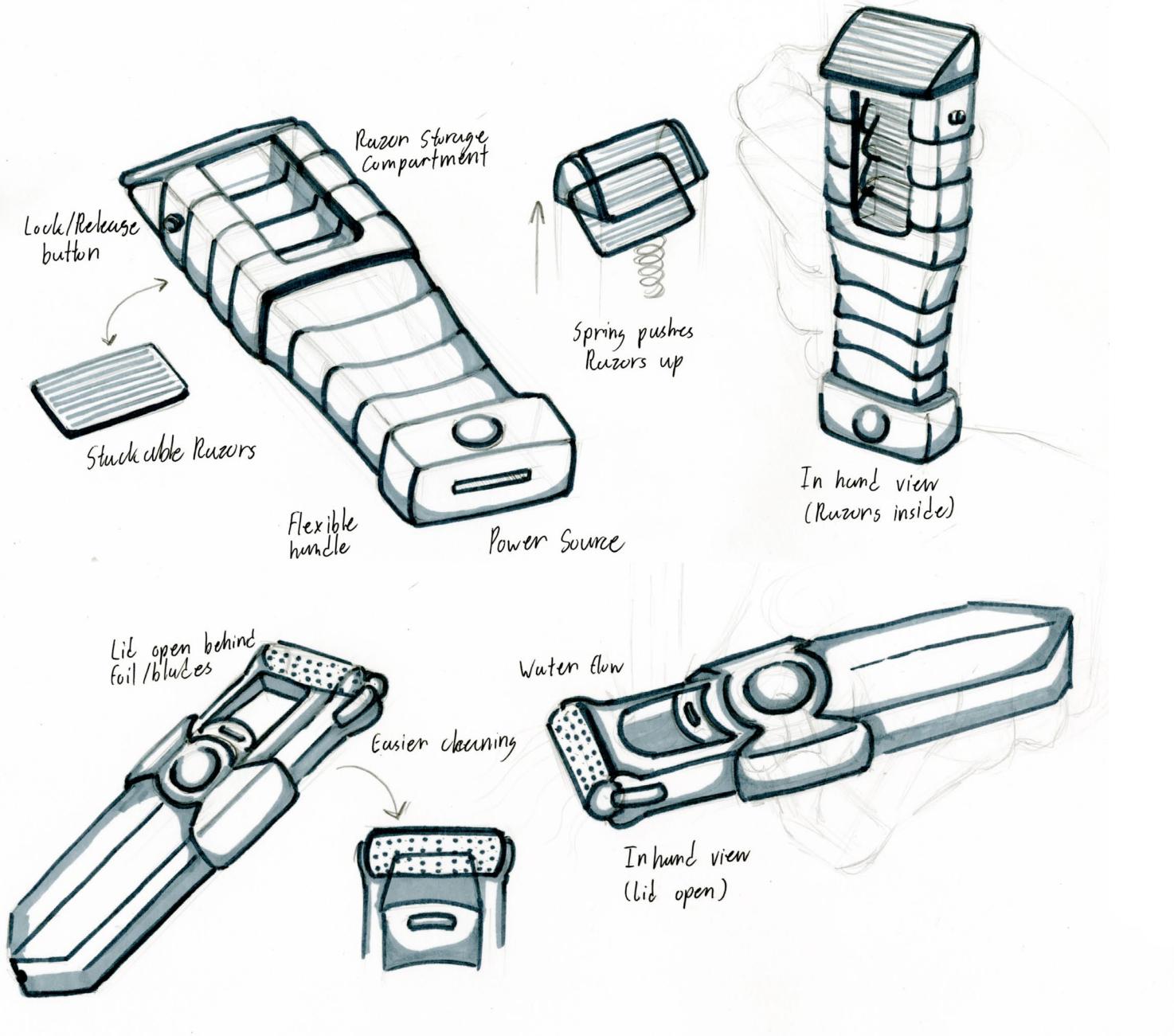
Dimensions: 6" x 2" x 1.5"

Materials: PLA, Resin, Spray Paint, Clear Coat

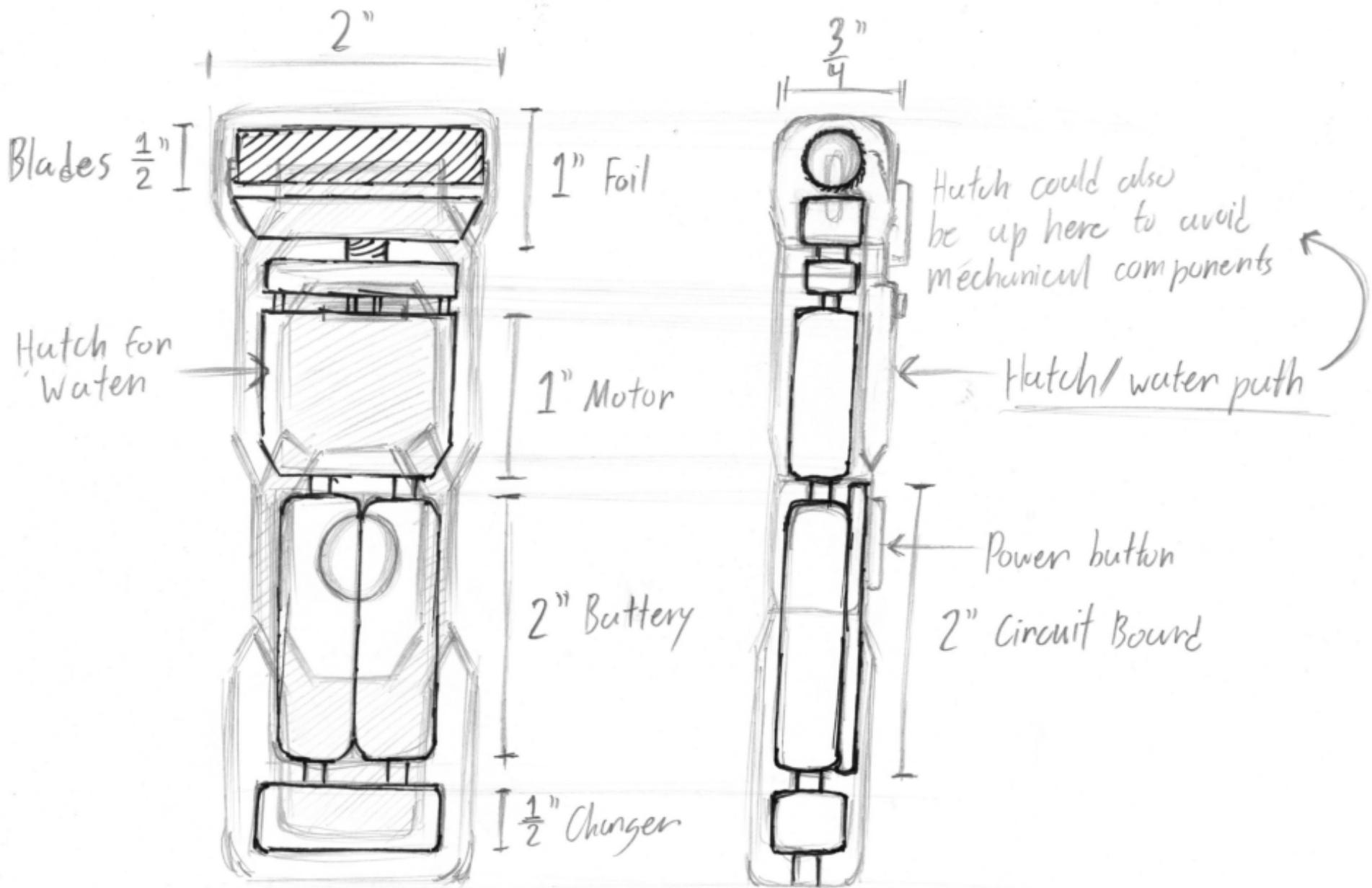




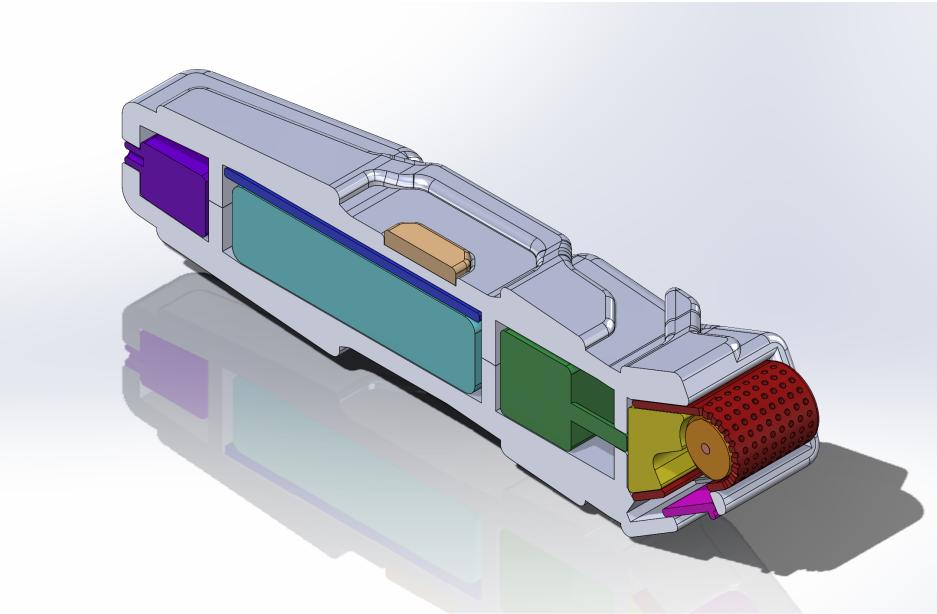
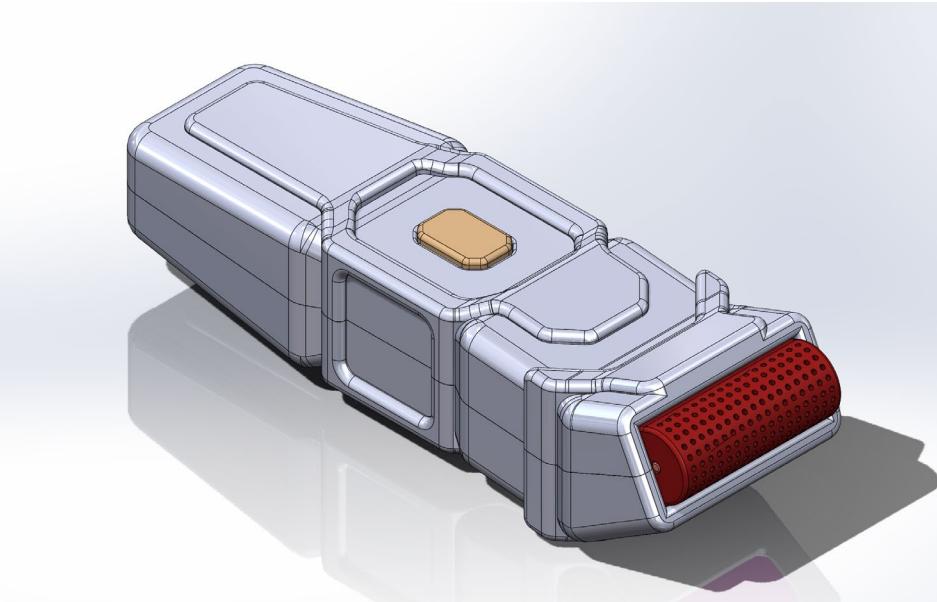
Electric shaver concept sketches based on research and user needs through unique mechanisms.



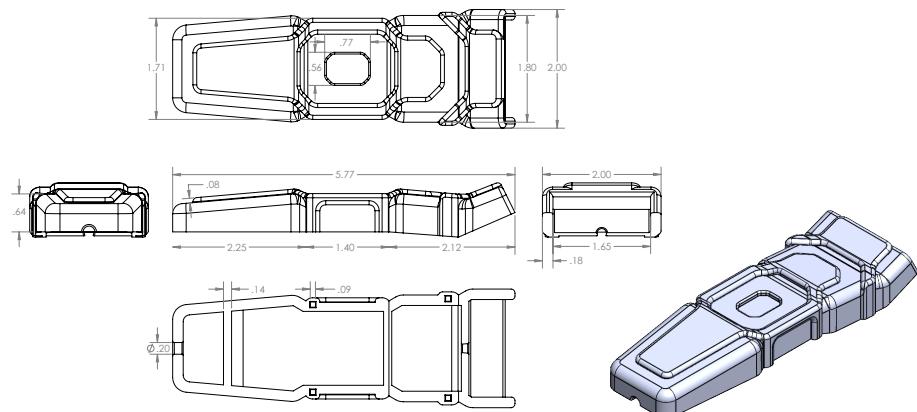
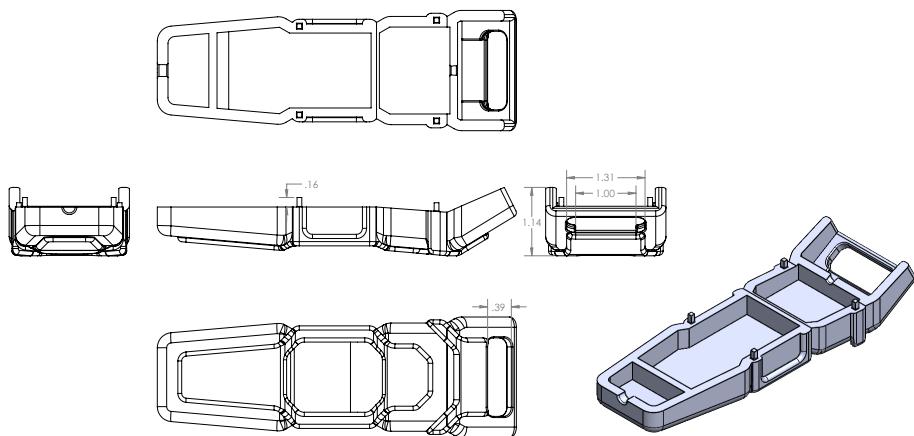
Refined concept sketches that focus on the electric shaver's mechanisms and detailed shots.



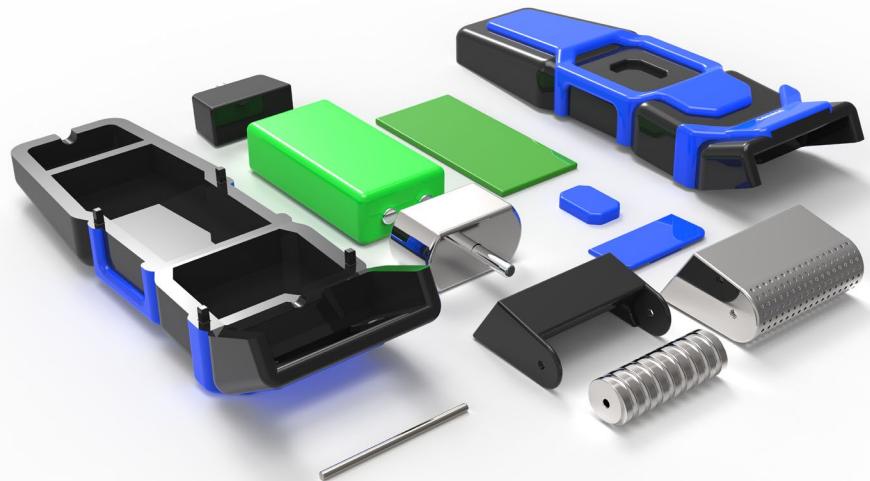
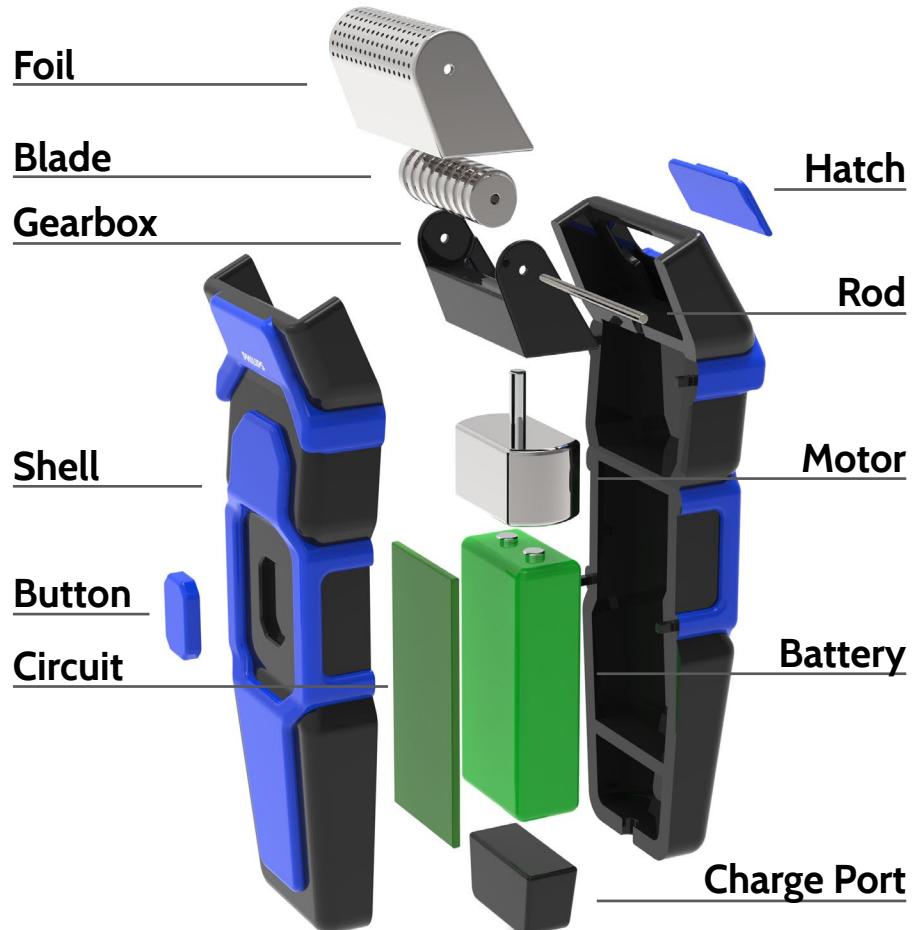
Internal component sketches that explore how the product would work with new mechanisms.



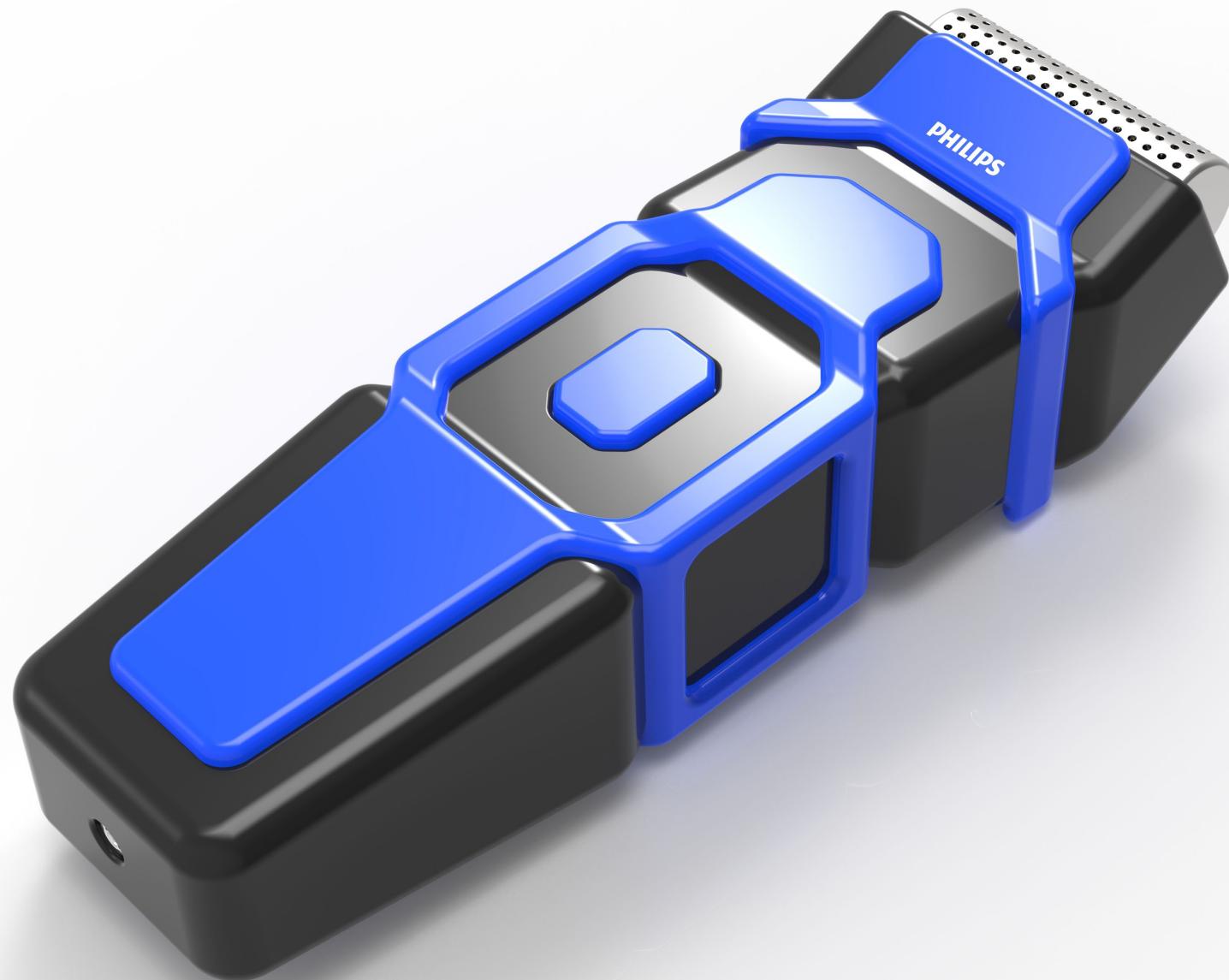
Solidworks digital model that implements internal components, mechanisms, and aesthetic.



Orthographics that give precise model measurements of the top and bottom shells.



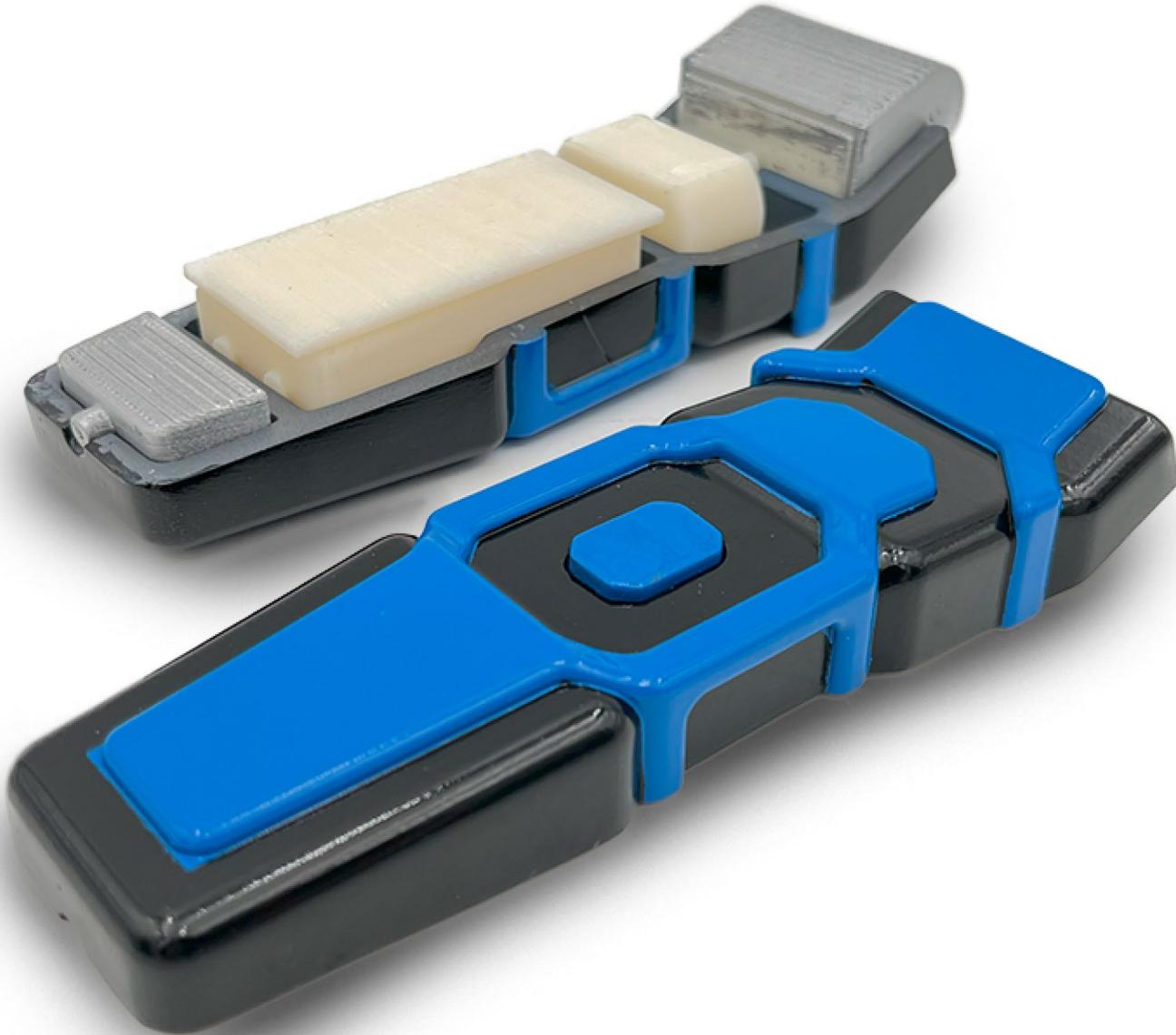
Keyshot renderings with exploded shots that visualize the internal components and the hatch function.





A photoshop rendering context shot of with the shaver in use to show its ergonomics.





Streamlined Electric Shaver

Final Pictures

Caleb Chang

Reflection

Throughout my design journey, I embraced challenges that refined my concept and deepened my understanding of materials, processes, and precision, especially in 3D printing. Initially, complexity was discouraging, but prioritizing user needs and gradual improvements over perfection allowed for more innovation and feasibility.

If I could redesign my project, I'd take a bolder, more creative approach while maintaining efficiency. Experimentation and documenting progress proved invaluable, reinforcing that design is a continuous process of learning and exploration.

Engaging with research, user feedback, and diverse perspective elevated my approach to professional design. Synthesizing knowledge into a final product was both rewarding and enjoyable, setting a new standard for my future work.

HP OMEN Phone

Consumer Electronic Design

HP OMEN Phone

Design a phone that incorporates elements from a brand through visual aesthetics, demographic needs, and successful ergonomics.

A phone design inspired by the gaming products made at HP OMEN. It draws in aspects of a sleek, geometric design language, and integrating gaming performance aids like fan vents.

Ideal for gaming enthusiasts who want to take their mobile experience to the next level. Anyone struggling to run high-end and demanding mobile games on their phones would enjoy the higher performance on the HP OMEN Phone.

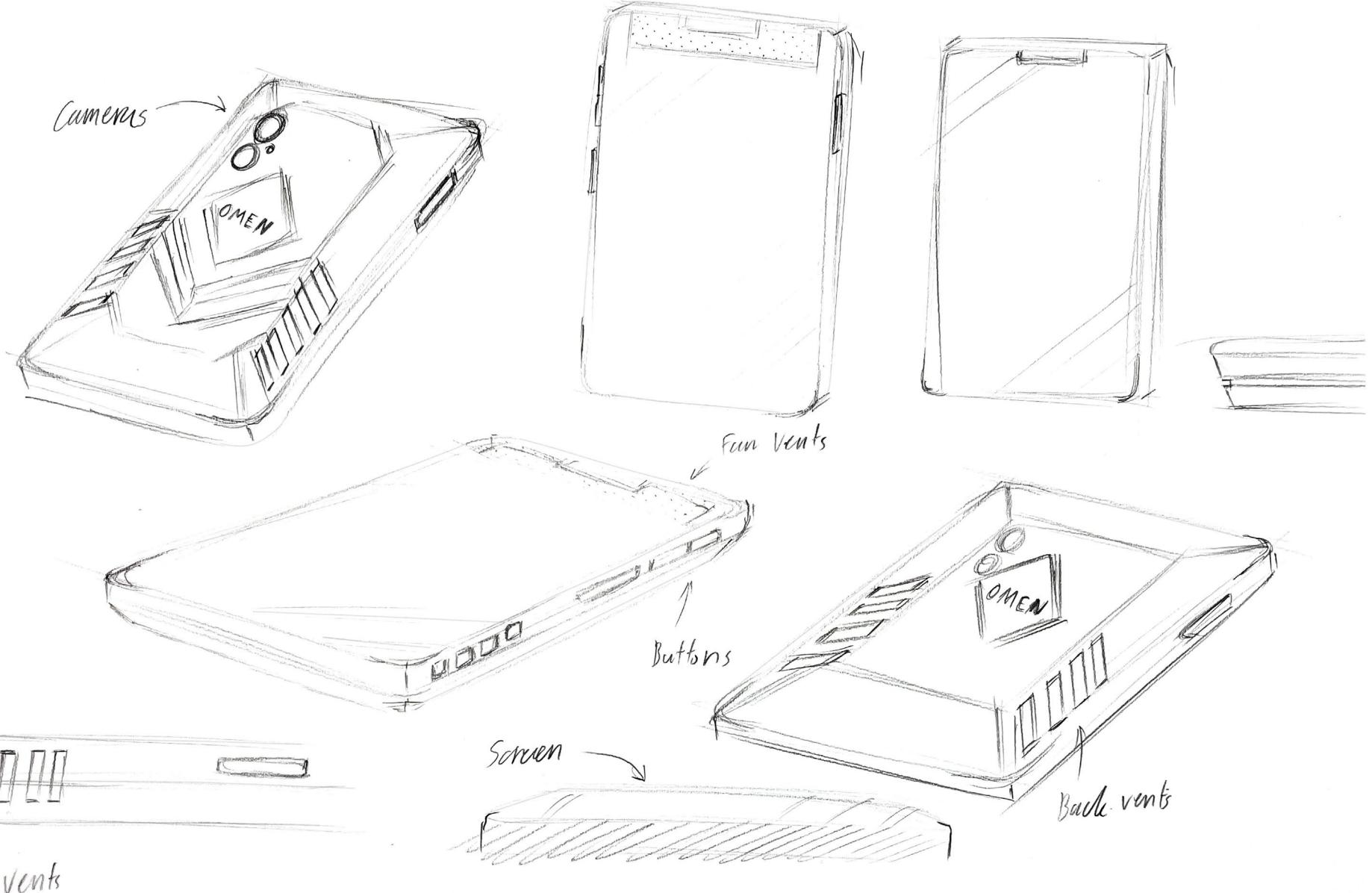
Dimensions: 140mm x 70mm x 8mm"

Softwares: SolidWorks, Keyshot





Research of HP OMEN products to define a design language, color palette, and form breakup lines.



Phone concept sketches that experiment with the brand form language and incorporating fan vents.



A SolidWorks model to finalize form language and fan vent concepts digitally.

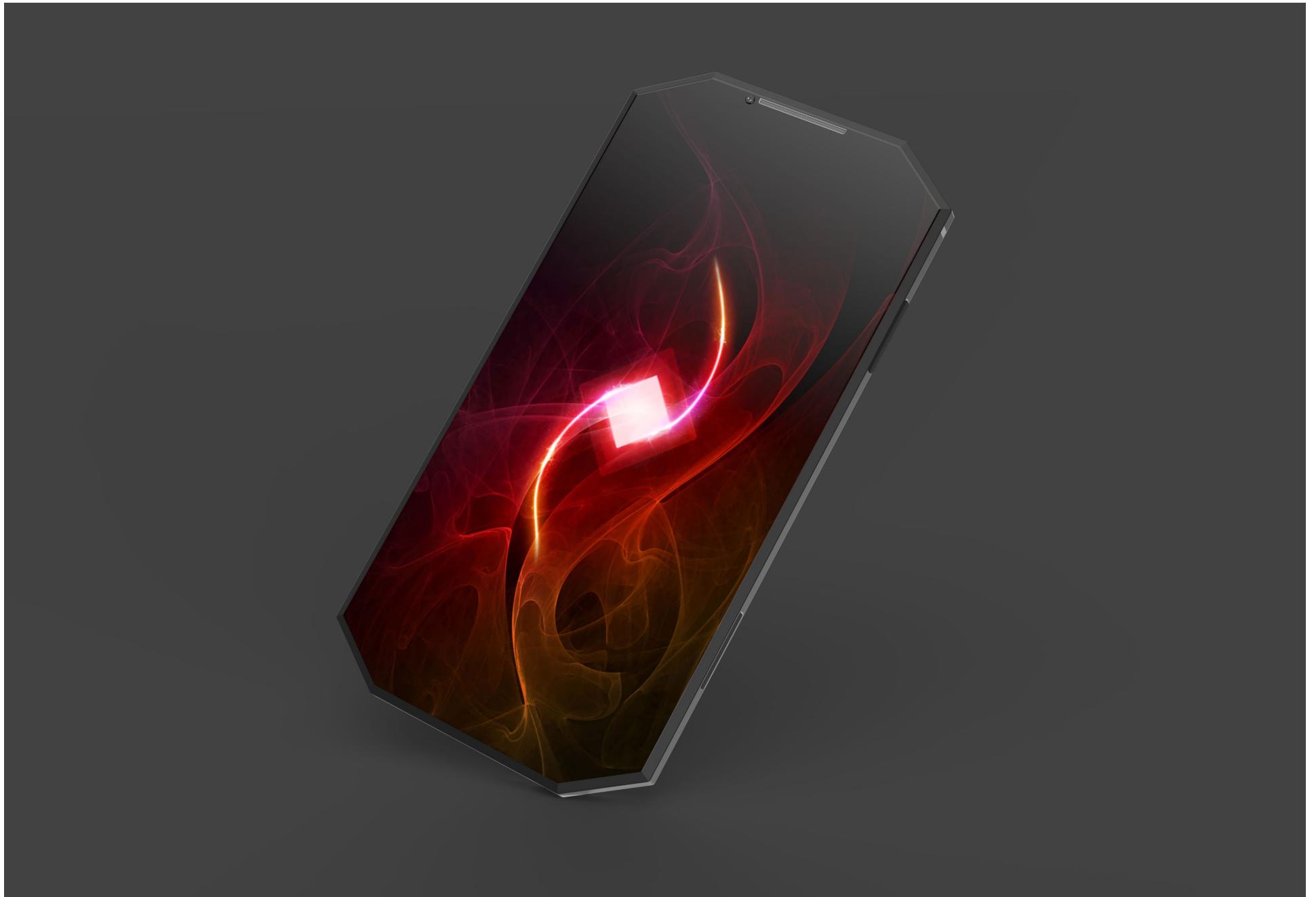


HP Omen Phone

Final Pictures

Caleb Chang





Reflection

This project posed a unique challenge-in that the prompt asked to create a design that challenged an inherently simply object, a phone. Because of this, it allowed me to tackle the problem with a wide variety of creativity, while utilizing inspiration found from existing brand form language to create a well-crafted phone design.

If I were to design another phone, it would be interesting to explore different brands and experiment with completely unique form languages. Even branching out and design different consumer electronics all together would challenge me in areas newer areas.

This project benefited me by allowing to build upon and use existing skills I've learned, and push them further to design a successful product. The opportunity to design a new product and implement branding let me fully use my creativity and gain a better understanding of the design process overall.

Crescentide

Furniture Design

Crescentide

Design a piece of furniture that tailors toward efficiency and reduces expenses in the manufacturing process through utilizing the same pieces to create a cohesive and appealing product.

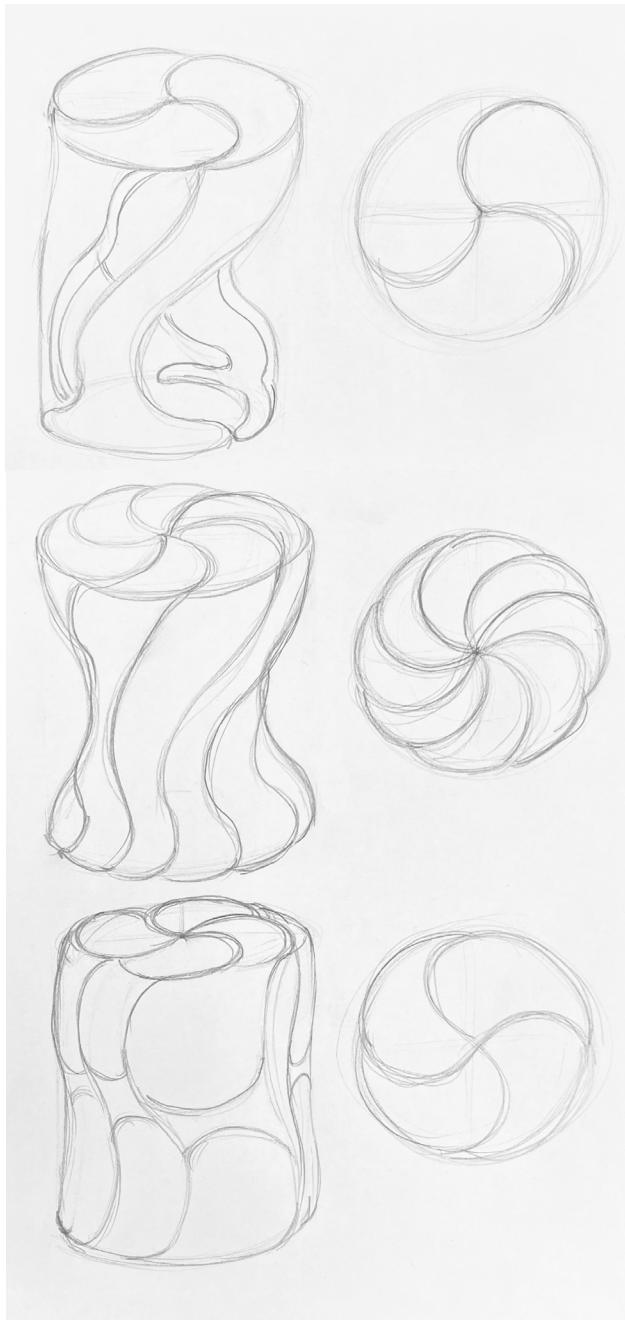
The Crescentide stool is a bright and colorful design that promotes efficient manufacturing by using a single component, eliminating the need for additional parts. Inspired by the organic spiral patterns found in nature, such as waves and foliage, the name Crescentide reflects this theme.

Its vibrant, plastic-like aesthetic appeals to a younger demographic, aligning with the playful qualities of plastic toy products in the industry.

Dimensions: 17" x 14 " x 14 "

Materials: MDF, Wood Glue, Primer, Spray Paint, Clear Coat, Sanding Seal

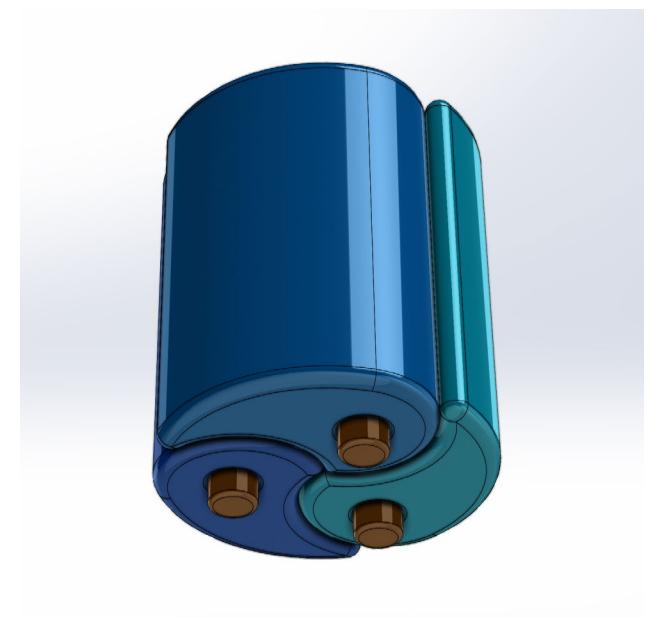
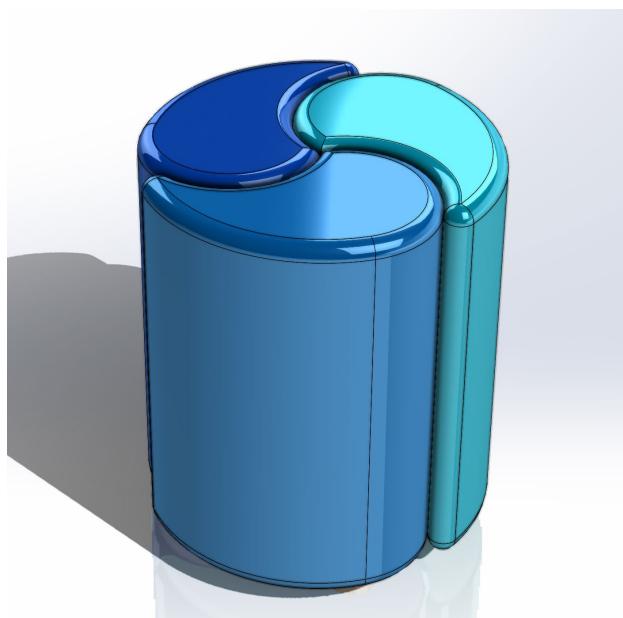


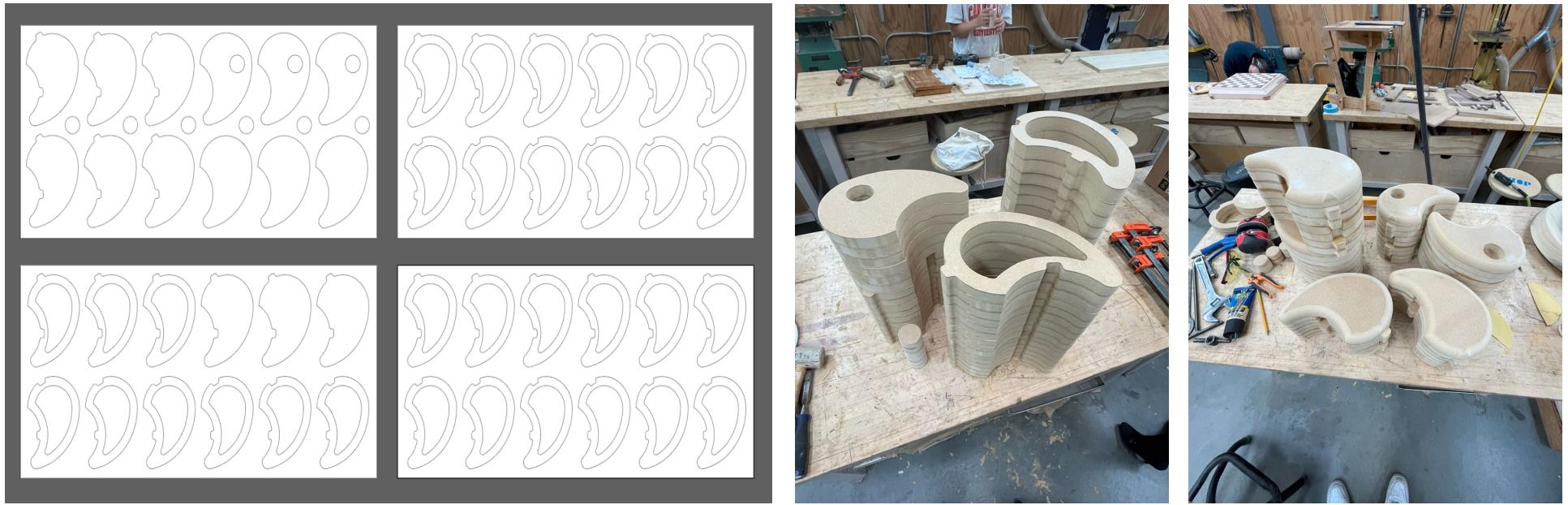


Concept sketches that explore unique ways to combine duplicative parts. Solidworks model to establish color and scale.



Cardboard models that explore the stool's ergonomics and testing proportions.





CNC, joining, sanding, sealing, and finishing process.



Physical model with MDF that further tests ergonomics and final aesthetics.



Reflection

This project presented challenges, but each one became a valuable learning experience that contributed to my growth. Though setbacks sometimes caused delays, they ultimately enhanced my understanding and problem-solving skills.

Balancing minor refinements with addressing significant issues strengthened both my design and abilities. While I initially opted for a simpler approach to maintain feasibility, I'd love to experiment with more intricate designs in the future. Improved planning and preparation would streamline the process, making it more efficient and enjoyable.

This project deepened my understanding of hands-on design, manufacturing techniques, and material considerations. Most importantly, it reinforced the importance of progress over perfection, and embracing challenges as opportunities for growth for more advanced future projects.

Two-Hander

Furniture Design

Two-Hander

Design a chair that engages itself with temporality, sustainability, and a “skin and bones” design philosophy through the use of unique connections, joinery, and weaving techniques.

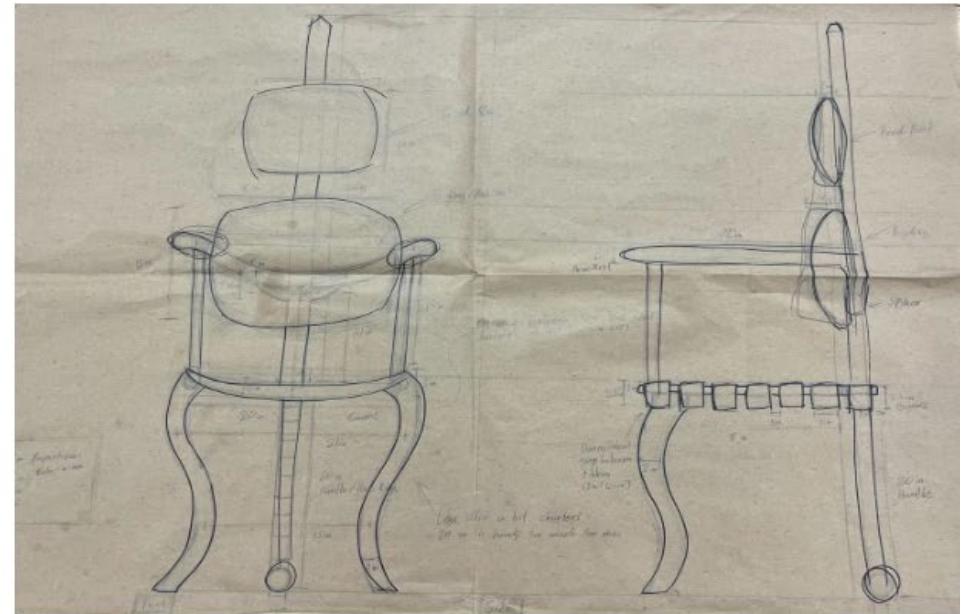
A chair that prominently features a sword-inspired design, incorporating a distinct depiction of a “zweihander” as its backrest. The design embraces the “skin and bones” philosophy, reflected in the minimalist structure of the armrests and seat. Gradually sloping wooden layers serve both aesthetic and functional purposes, seamlessly forming the chair’s legs.

This piece is perfect for fantasy and medieval enthusiasts who appreciate functional decor that aligns with their personal interests.

Dimensions: 5.5' x 2' x 2'

Materials: Steel, Birch Plywood, Clear Coat, Beeswax

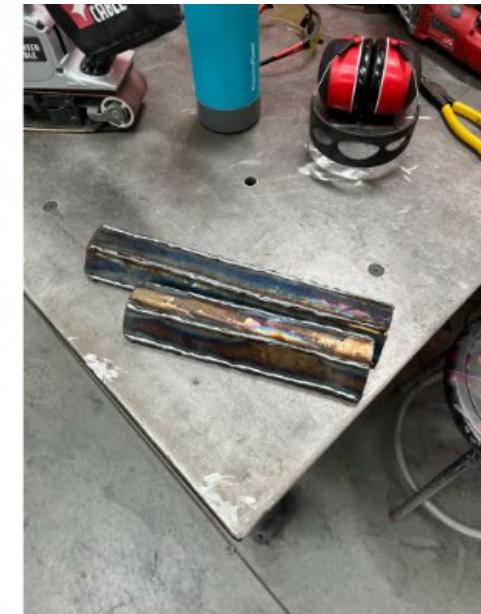




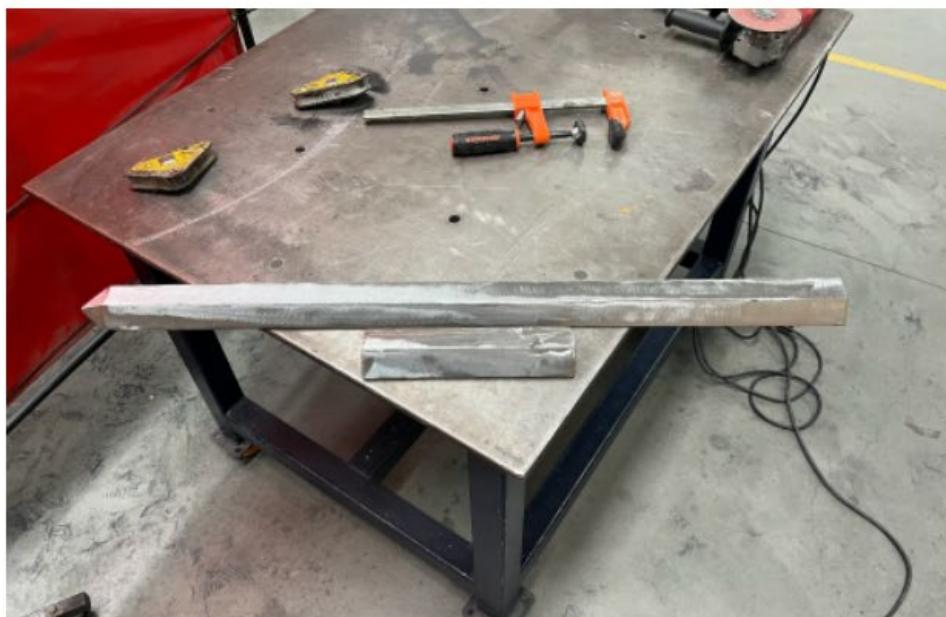
Cardboard mini-model that experiment with theme and aesthetic. Orthograph sketches that estaplish proportions and measurements.



Cardboard model that finalizes the ergonomics and aesthetic. Cardboard templates for final model.



Cutting, joining, sanding, welding, grinding, and finishing process



Physical model with real materials to further test ergonomics and aesthetics.



Two-Hander

Final Pictures

Caleb Chang

Reflection

This project was a journey of growth, creativity, and problem-solving. Every challenge strengthened my skills in materials, machinery, and design. Exploring new aspects of creation expanded my knowledge and sparked fresh ideas.

If I were to redo this project, I'd incorporate a bold yet abstract medieval influence while applying what I've learned to make the process even more enjoyable and the final result stronger.

Blending functionality with personal passion made this experience truly rewarding. Embracing imperfections led to improvements, and the skills I gained, both technical and creative, will continue to shape my future work.

Knight Light

Furniture and Lighting Design

Knight Light

Design a light source that has the capability to become its own packaging to promote sustainability while allowing the light to interact with surfaces and openings in unique ways.

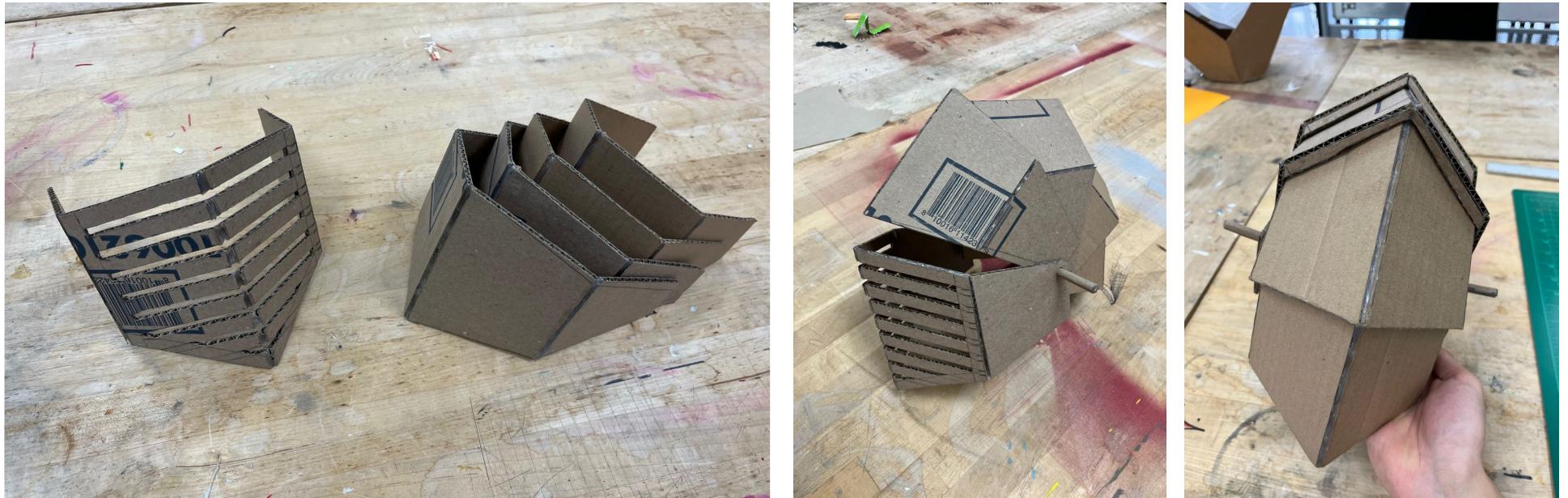
A lamp that doubles as a “knight light”, designed in the shape of a knight’s helmet. It eliminates the need for traditional packaging by cleverly rolling into a hollow sphere that stores both the helmet’s mane and the lightbulb. The grill-like openings on the faceplate create a distinctive lined light pattern in the dark, enhancing its medieval charm.

The fantasy-themed lamp appeals to those who appreciate its unique aesthetic, particularly a younger audience drawn to its imaginative design.

Dimensions: 10” x 18” x 18”

Materials: Cardboard, Paper, Hot Glue, Spray Paint, Clear Coat, Light Bulb, Cord





Cutting, folding, gluing, jointery, and finishing process.



Physical model to study it's aesthetics, functionality, and mechanism.



Knight Light

Final Pictures

Caleb Chang



Knight Light

Final Pictures

Caleb Chang

Reflection

While I faced challenges with material choices and model-making, these setbacks became important learning experiences. They allowed me to experiment with the product's mechanisms, strengthen my problem-solving skills, and ultimately improve future projects.

If I were to redo this project, I'd explore different materials to enhance both stability and flexibility, preventing past issues while expanding design possibilities.

This project was an exciting challenge, pushing me to adapt and apply problem solving skills in unique ways. It was a rewarding experience that deepened my understanding of product design.