

A POP OF COLOR

Intuitive Labeling Solutions to Increase Efficiency at **KING OF POPS**



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Professor Wendell Wilson
GT MID Studio
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Preface



King of Pops is teaming up with Georgia Tech Industrial Design students.

The Master's students have been tasked with conducting detailed research into the King of Pops operations.

Students will analyze collected data and identify areas for improved efficiency and usability.

Identified problems will be further researched and design concepts for potential solutions will be proposed.

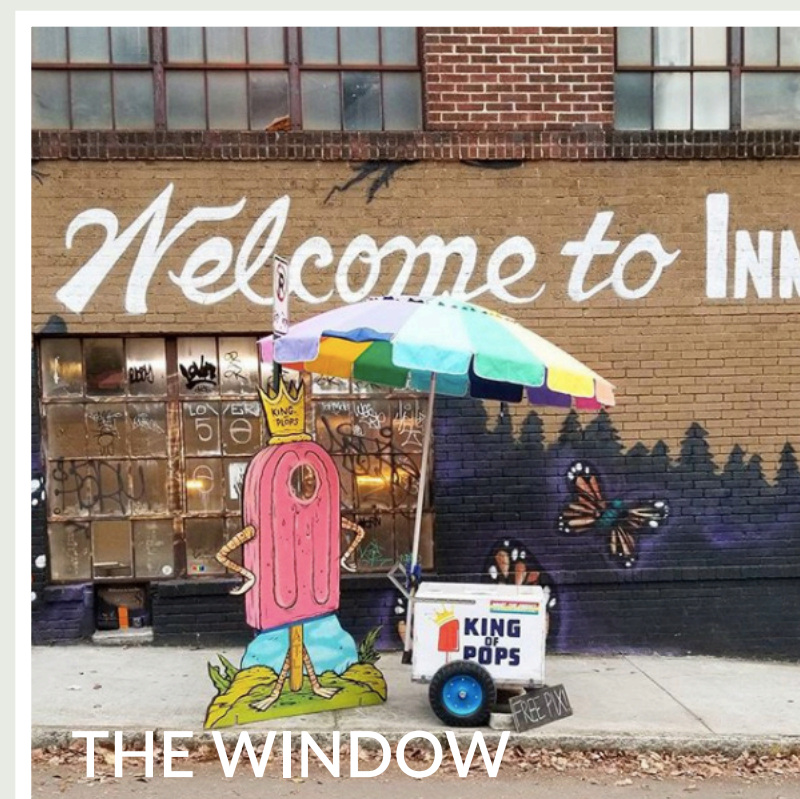
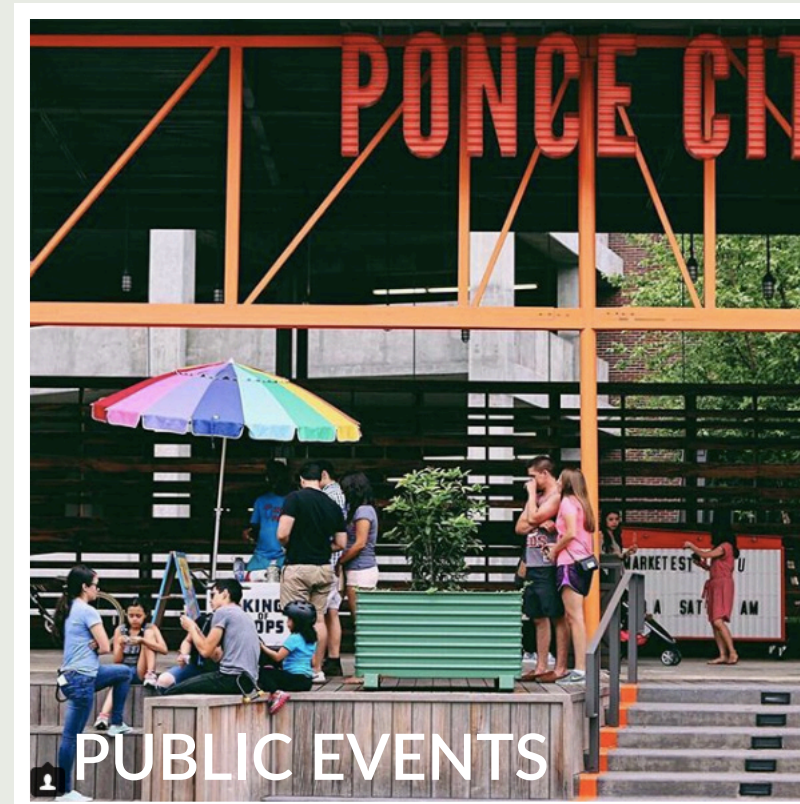
Design concepts will be narrowed down to a single design solution which will be proposed to King of Pops for implementation.

RESEARCH

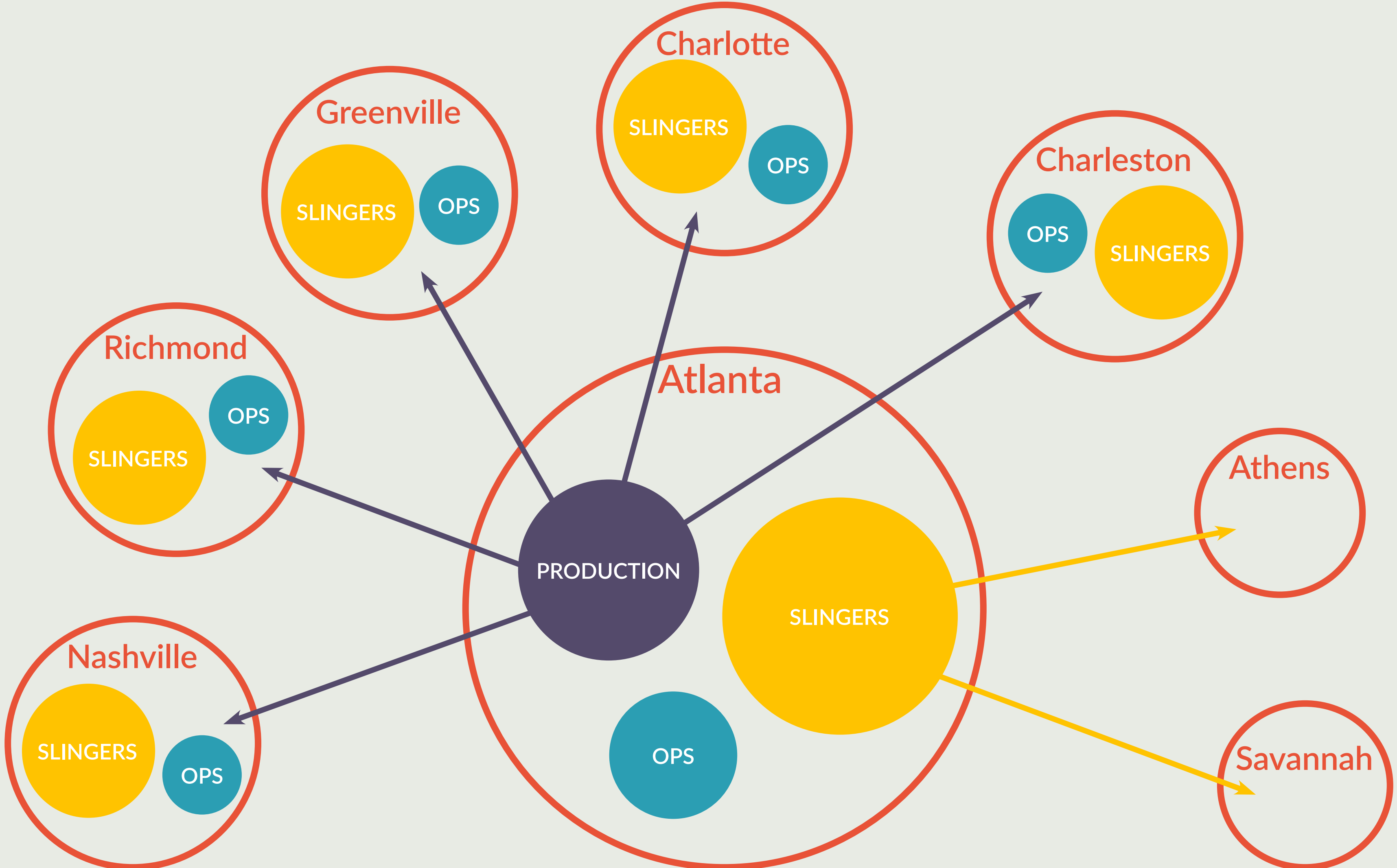


Context - Sale Spots

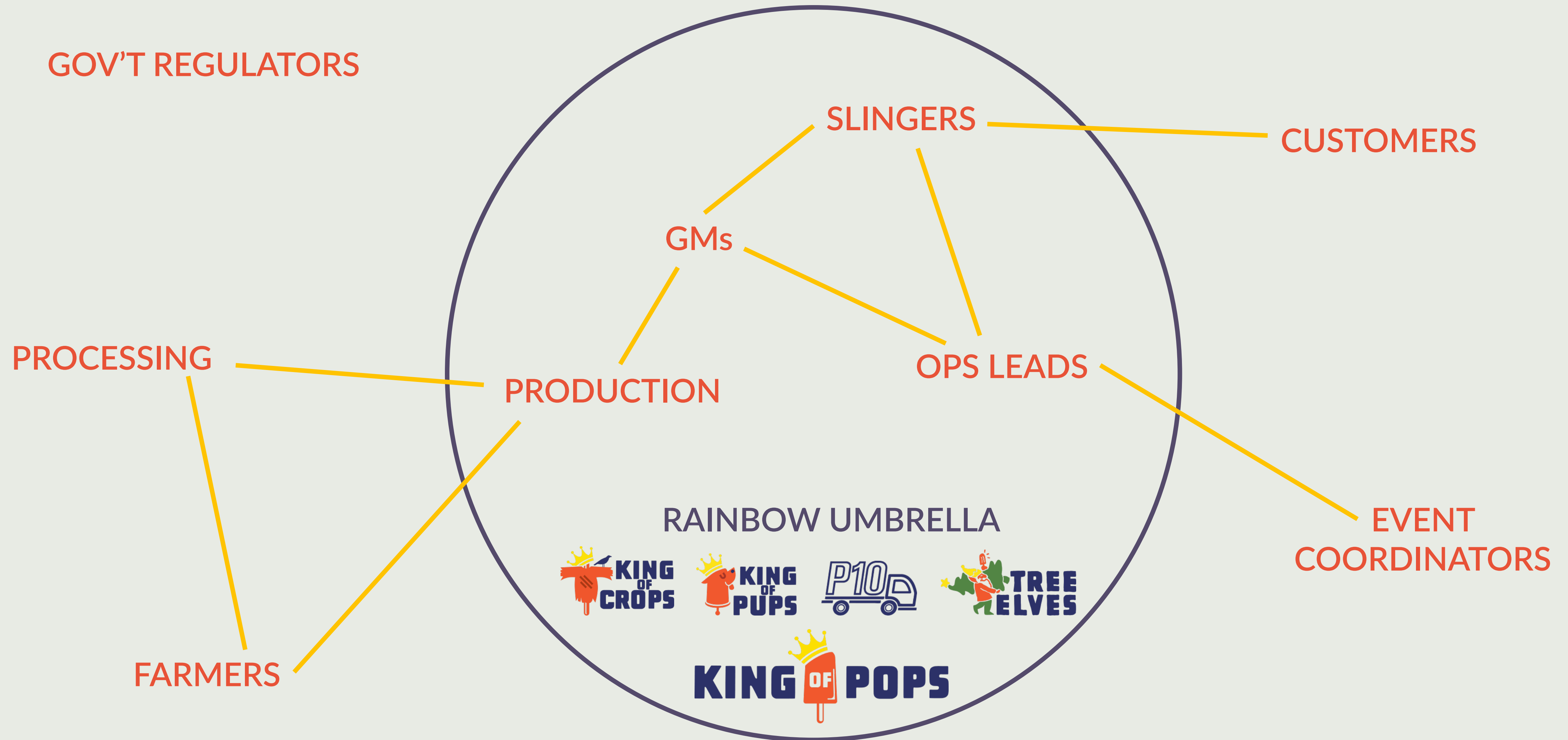
Due to their unique cart-based business model, King of Pops sells and operates in a wide variety of locations.



Context - Growth in the Southeast



Stakeholders



Research Methods



Shadow Shift with a Slinger



Tours of New and Old HQ



Data Analysis: Journey Map



Q&A with Founder, GM, and Education Leader



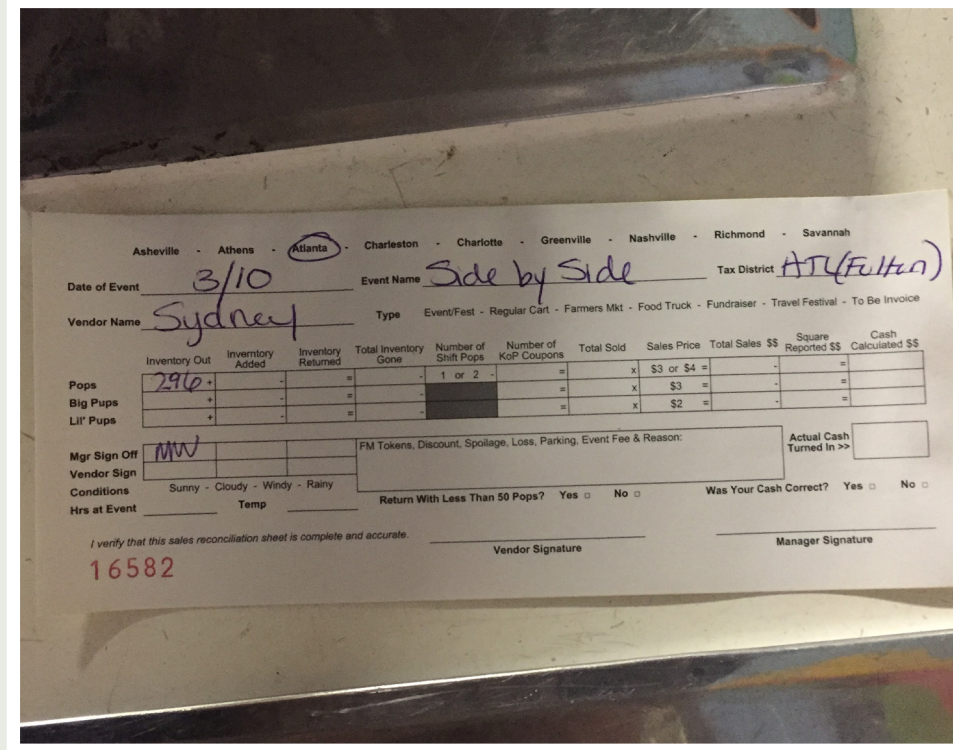
Industry Research



A Day in the Life of a Slinger



Cart is Packed by Ops Lead



Slinger signs into work and finds their cart with sales slip



Slinger gathers other equipment needed for their shift



Slinger loads equipment and cart onto truck



Slinger ratchets cart down



Slinger drives to location and parks



Slinger sets up ramps

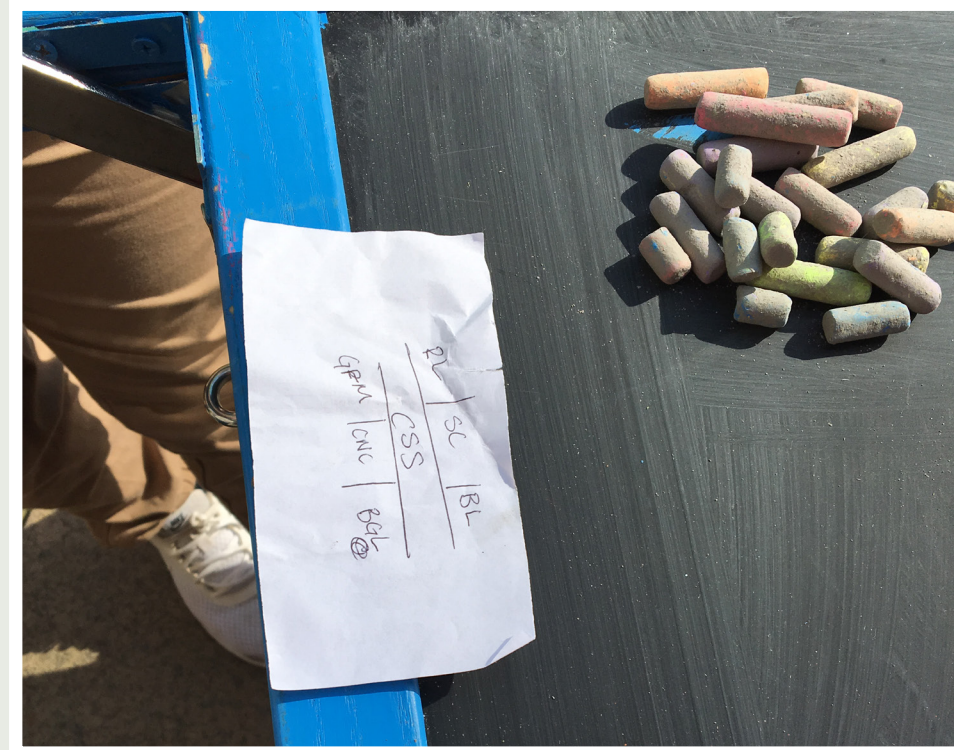


Slinger unloads cart

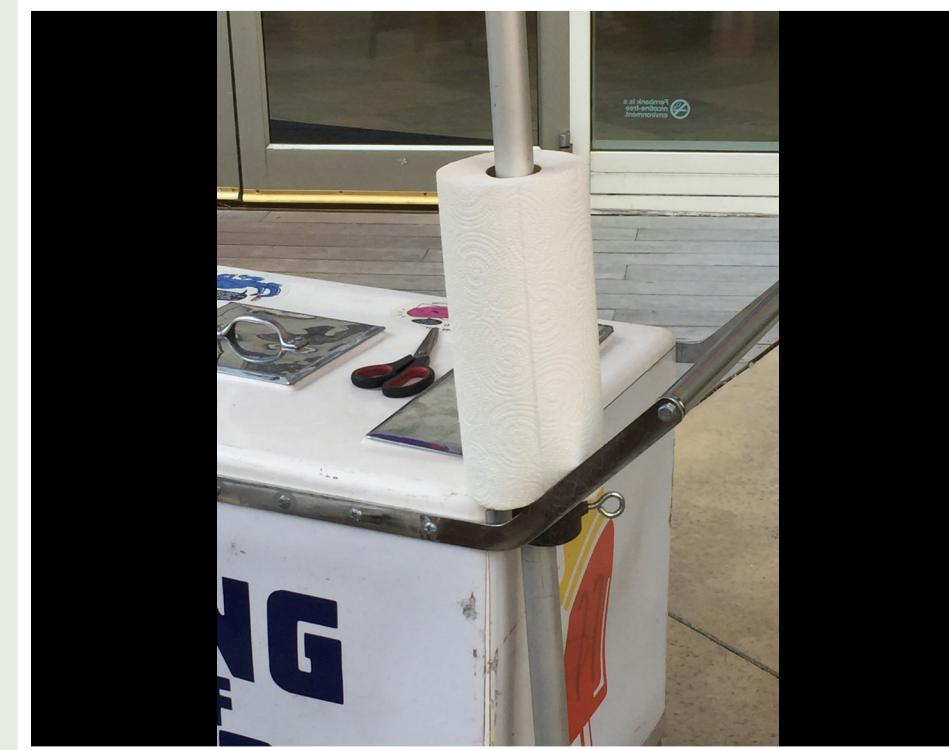
A Day in the Life of a Slinger



Slinger stacks materials on top of cart and finds a location to set up



Slinger writes flavors on chalkboard



Slinger sets up umbrella and paper towels



Slinger sells pops!



Slinger breaks down chalkboard and umbrella



Slinger wheels cart to truck



Slinger loads truck



Slinger drives back to HQ and unloads cart

A Day in the Life of a Slinger



Slinger and ops lead unload and count pops



Slinger puts away other supplies and wipes down chalkboard



Slinger and Ops Lead count money



Slinger signs out of work

Data Processing

Our journey map helped us track the entire process we had observed, while measuring its' efficiency at every step.



Key Insights



Positive Takeaways

Face-to-Face

The face-to-face interaction afforded by the cart is invaluable and one of the main reasons slingers enjoy their jobs.

Flexible Location

Carts allow slingers to get into any location and place themselves in the middle of the action, which is great for visibility and sales.

Visibility

The umbrella not only shades the slinger while they position themselves in the sun, but is a recognizable beacon for customers.

Areas of Opportunity



Supplies at HQ

- many supplies need to be collected
- easy to forget something
- supplies can be insufficient at peak hours

If something is forgotten, a slinger must turn around and retrieve it, which may involve repacking the cart into the truck, or an Ops lead must drive to the slinger's location to drop it off.

Materials needed:

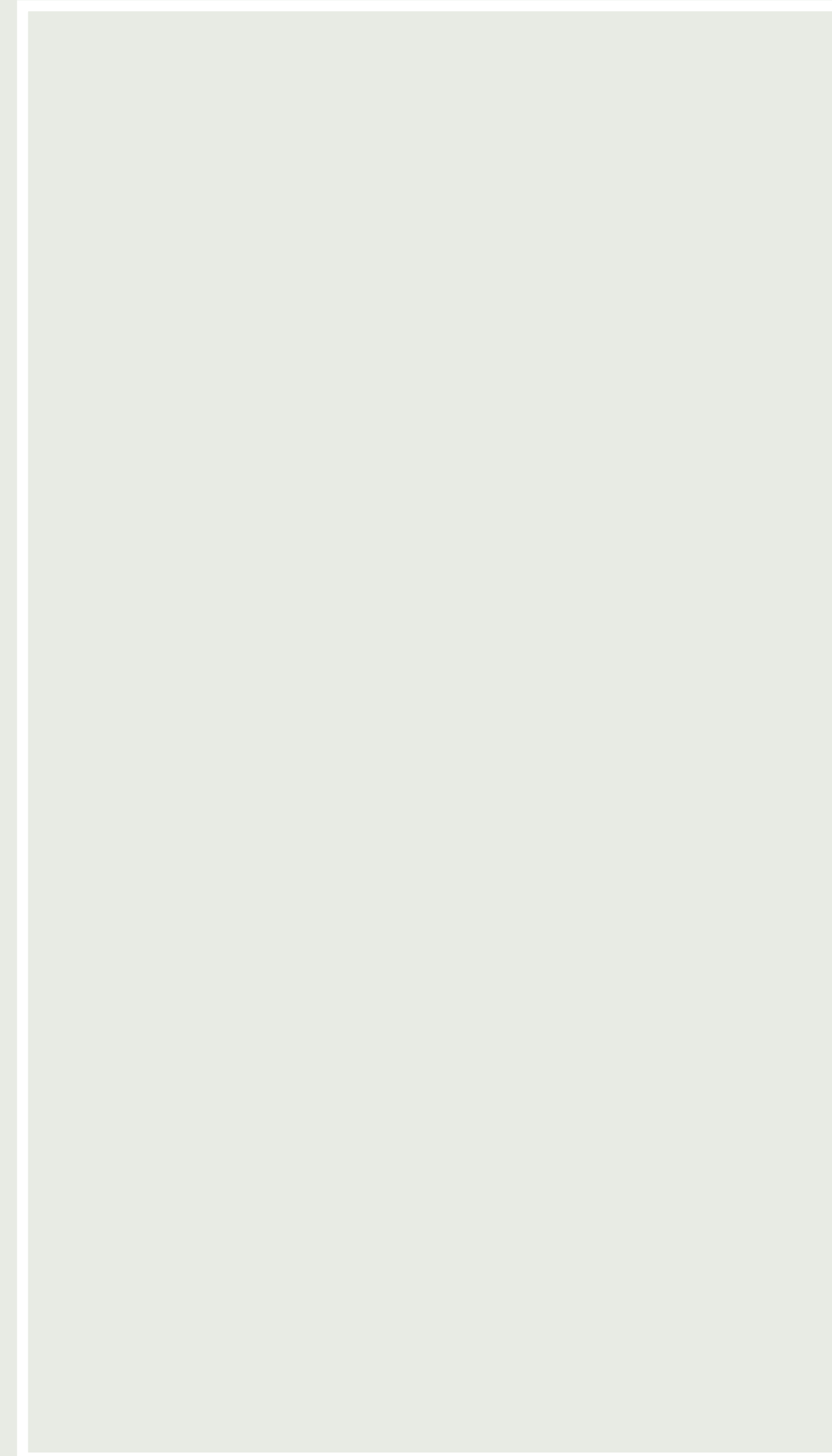
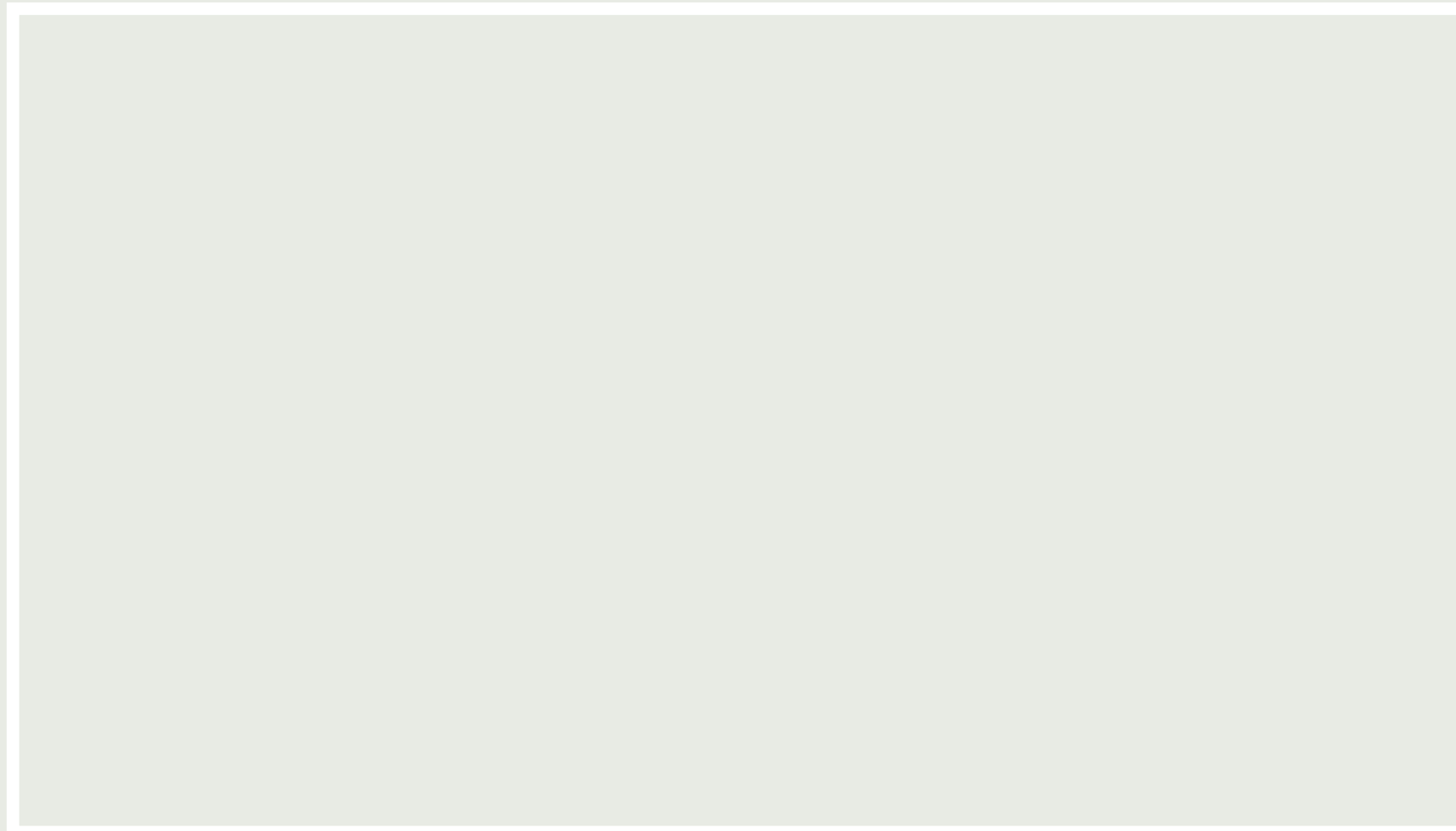
- cart
- chalkboard
- umbrella
- paper towels
- bank
- marketing bubble
- clip
- scissors
- square scanner
- ramps (if using)



Areas of Opportunity

Loading and Unloading Carts from Trucks

- carts are heavy, especially when fully packed
- safety concerns
- passersby are asked for help
- current ramps are unstable



Areas of Opportunity



Transactions

SQUARE:

- Have to use personal device and rely on its data
- Can run out of battery
- Dongle is awkward to use when attached to a lightning port

CASH:

- Customers do not expect a phone interaction after a cash sale and therefore start ordering immediately after the transaction, making entering the transaction into the Square app awkward

Areas of Opportunity



Lighting at Night

- At festivals and other events at night, inebriated people trip over the spotlights on a regular basis
- System is not fixed, up to each slinger to decide how to set up their lights



Chalkboard

- Agressive customers ask to buy pops before slinger is finished chalking their board
- Rain washes away chalk
- No visually pleasing way to attach marketing bubbles to board

Areas of Opportunity

Hawker Bags

- bags are heavy, especially when full
- possibly creating shoulder and back pain
- employee modifications to reduce discomfort
- weight distributed unevenly due to one strap



Research Findings

Our investigation and data analysis revealed several areas of opportunity:



 Supplies at HQ



Transactions with Square



Loading and Unloading
Carts from Trucks



 Chalkboards

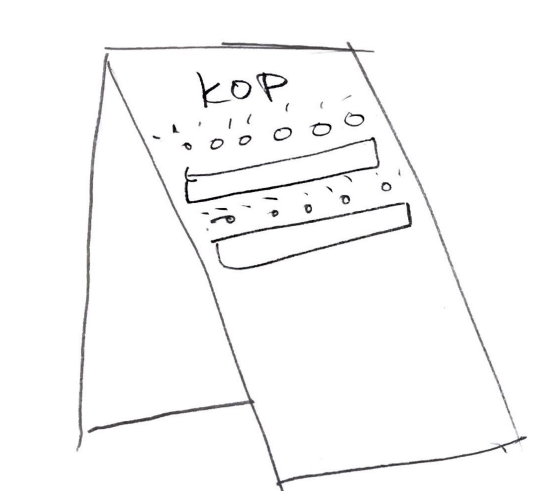


Hawker Bags

INITIAL IDEATION



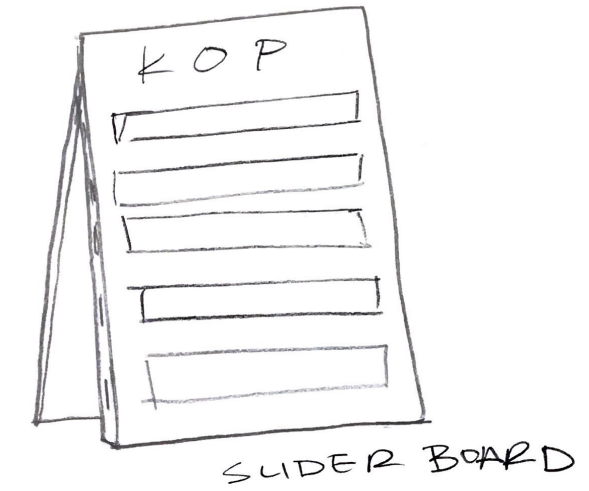
Initial Sketches



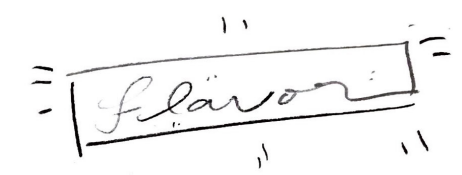
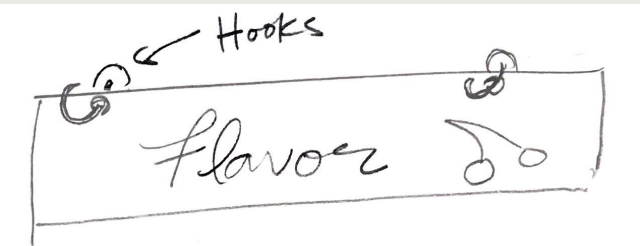
A FEW NIGHT BOARD STRIPS OF BATTERY-POWERED LEDS



COMMUNITY ART (KIDS) (IF YOU WIN YOU GET X POPS)



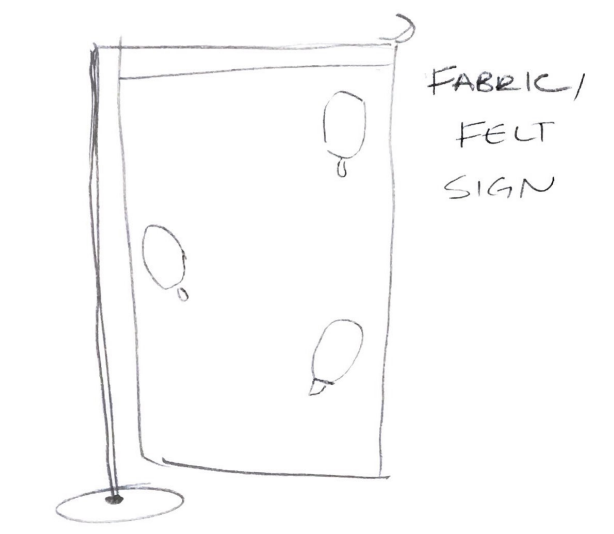
SLIDER BOARD



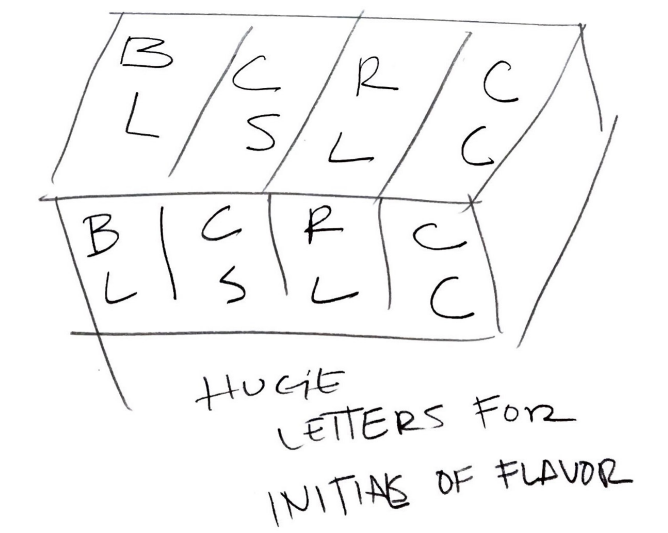
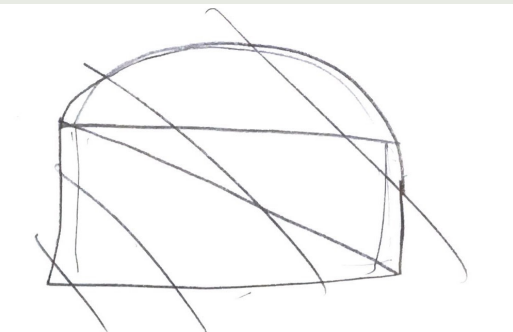
BACKLIT W MARKER



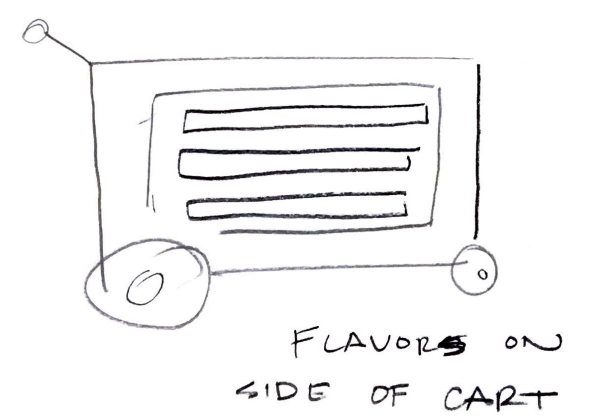
OR ONE OF THE KOP FONTS



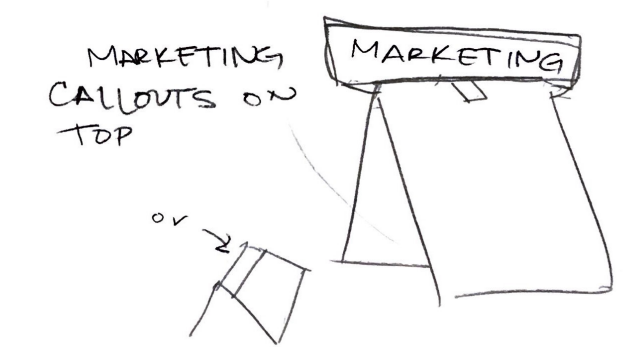
FABRIC/ FELT SIGN



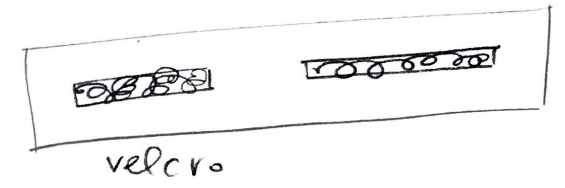
HUGE LETTERS FOR INITIALS OF FLAVOR



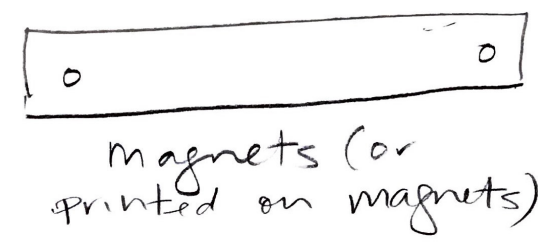
FLAVORS ON SIDE OF CART



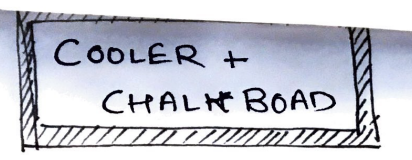
MARKETING CALLOUTS ON TOP



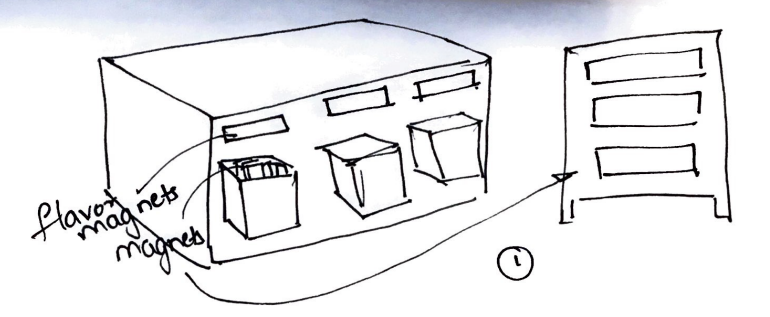
velcro



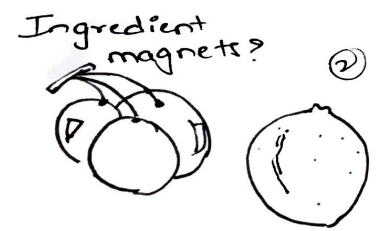
magnets (or printed on magnets)



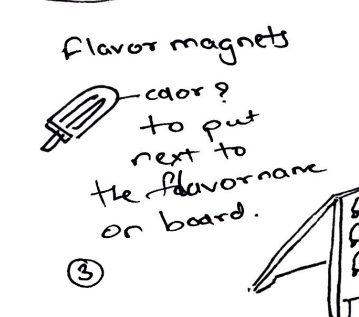
COOLER + CHALK BOARD



Flavor magnets

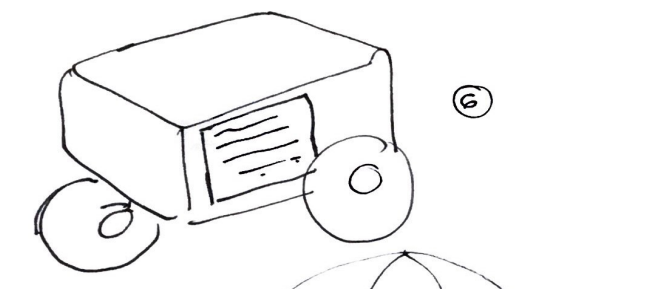


Ingredient magnets?

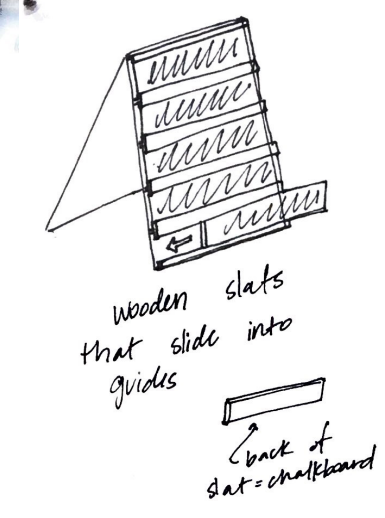
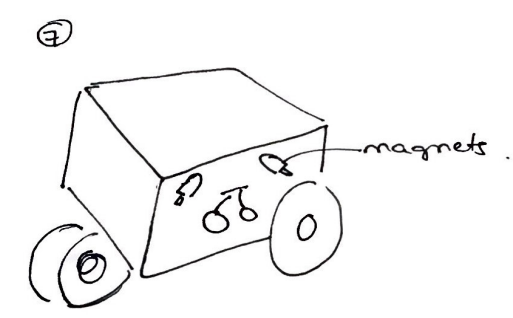


Flavor magnets - color? to put next to the flavor name on board.

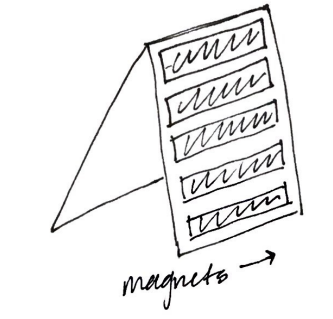
Make cart side a chalk board



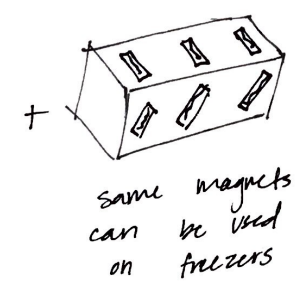
Make cart side magnetic - metal plate?



Wooden slats that slide into guides



magnets ->



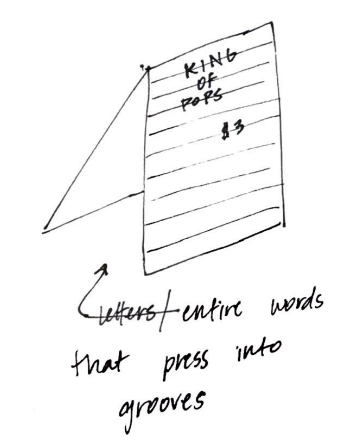
same magnets can be used on freezers



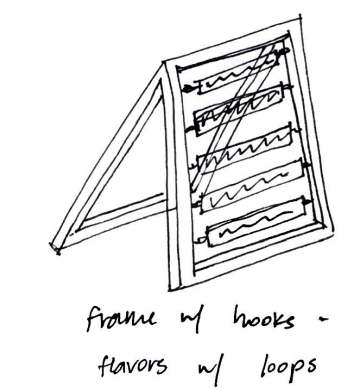
can include images of flavors



photo of pop in background magnets -



letters/entire words that press into grooves



Frame of hooks - flavors w loops

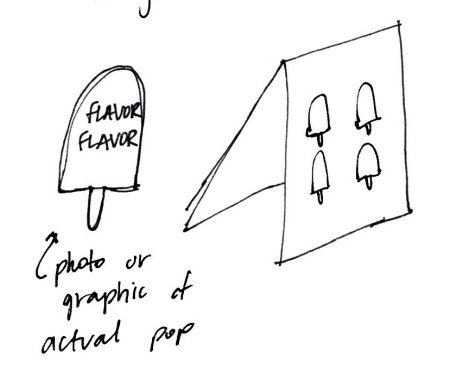
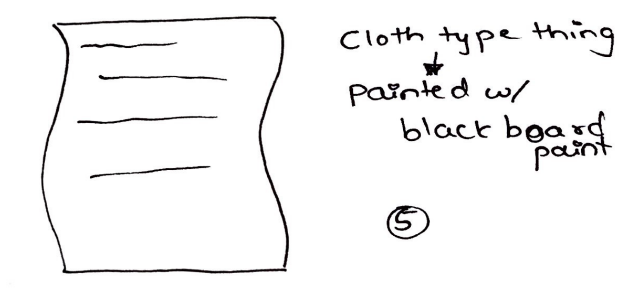


photo or graphic of actual pop

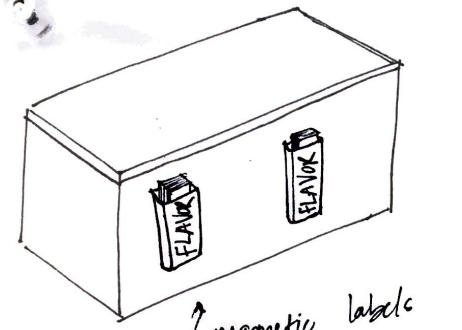


slots in the board

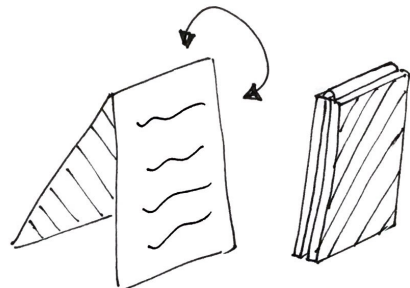


Cloth type thing painted w/ black board paint

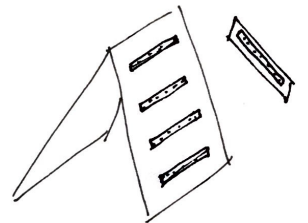
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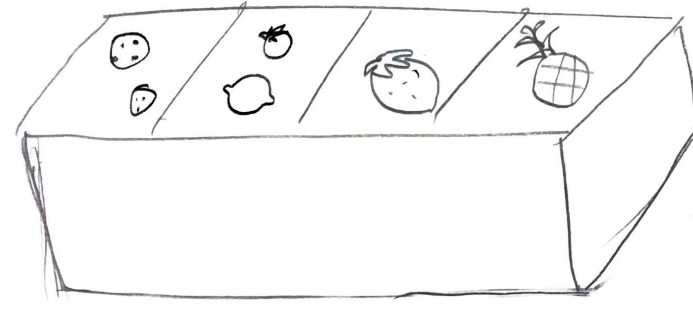
magnetic labels for freezers that hold menu labels



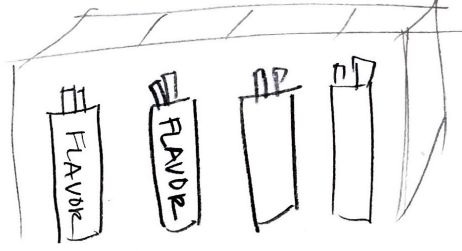
double linged chalkboard or whiteboard to protect writing done at the



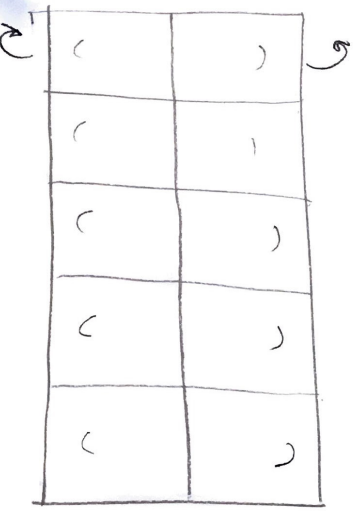
velcro on boards - flavors



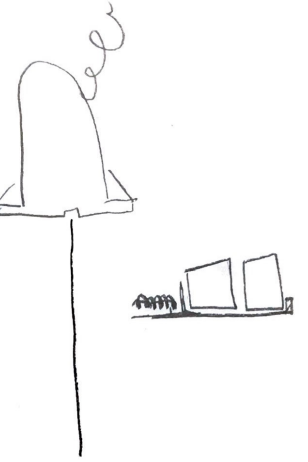
COLORFUL MAGNETIC STRIPS W/ ILLUSTRATIONS COORDINATED?



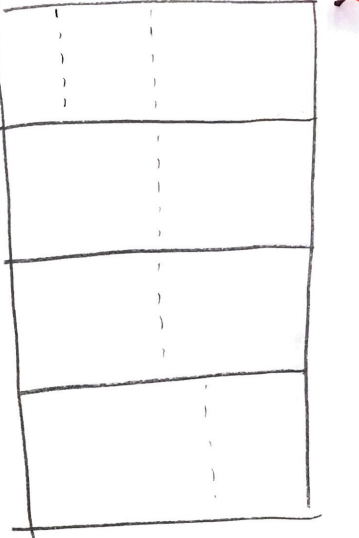
SLEEVES OF STRIPS (SLEEVE IS ALSO LABELED) ATTACHED W/ MAGNETS



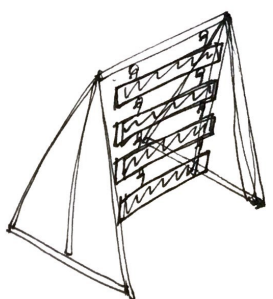
MULTI DOOR - OPENS TO MIDDLE



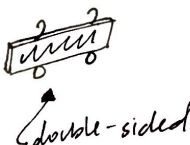
SPRING-LOADED FOR BOXES



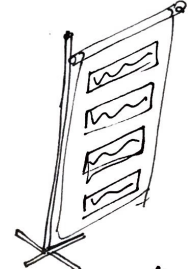
Removable vert. Partition



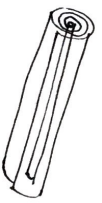
Frame - Flavors look on to each other



double-sided



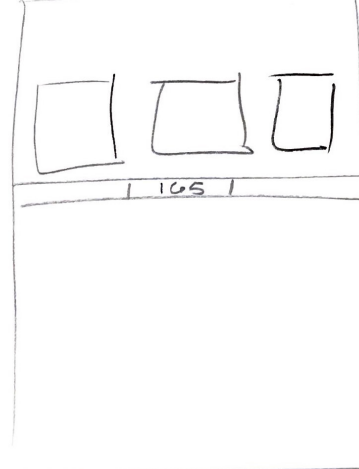
fabric "flag" w/ velcro-ed flavors



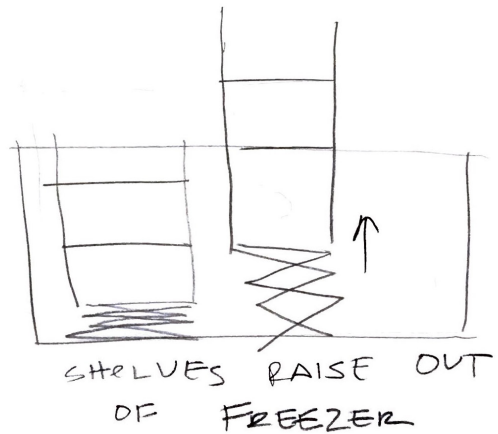
can be rolled for transport



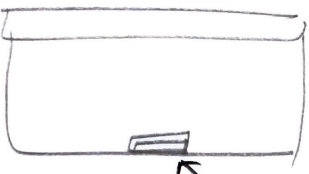
spray-printed plywood(?) boards for flavors - rustic feel



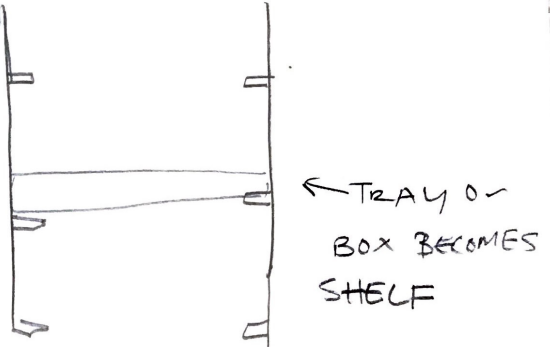
DIGITAL SCALE BUILT INTO SHELF TO KNOW HOW MANY POPS



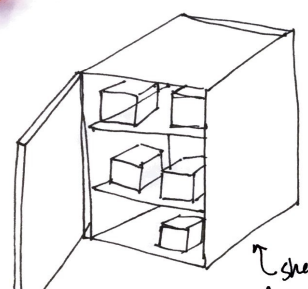
SHelves RAISE OUT OF FREEZER



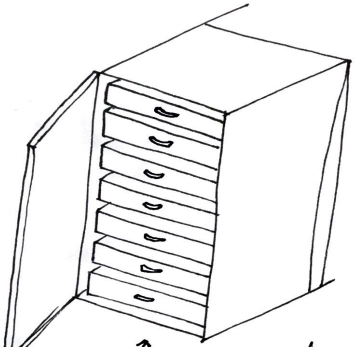
FOOT PEDAL OPEN



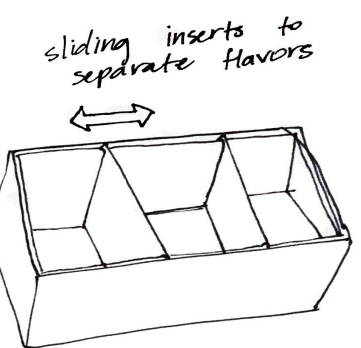
TRAY OR BOX BECOMES SHELF



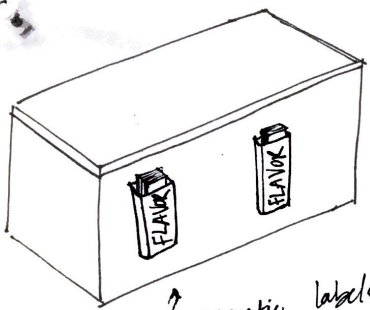
shelves for boxes



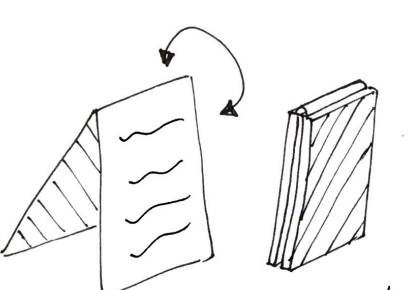
drawers inside for pops



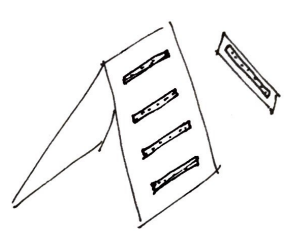
sliding inserts to separate flavors



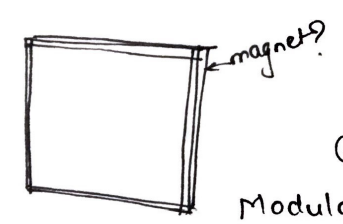
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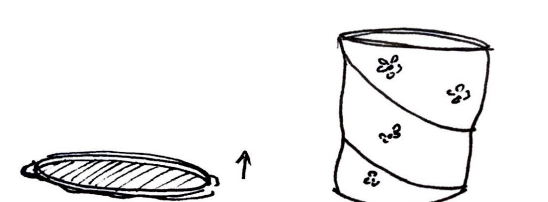
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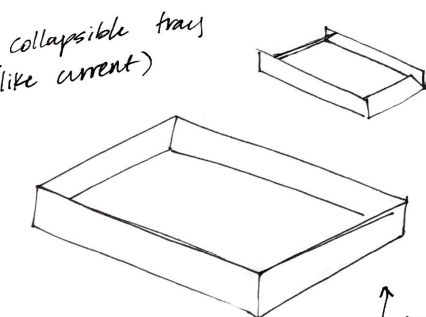
velcro on boards - flavors



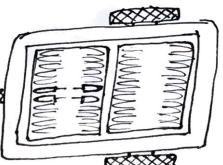
Modular boxes with magnetic corners/sides.



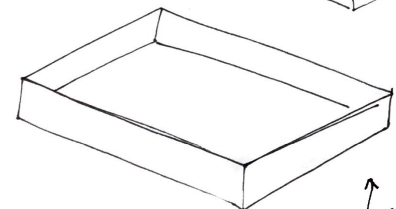
clothes hamper style box? But not circular.



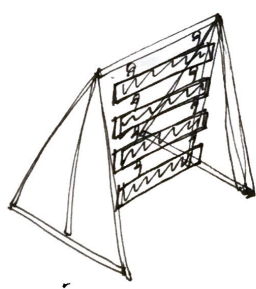
collapsible trays (like current)



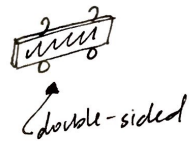
section of cart w/ trays



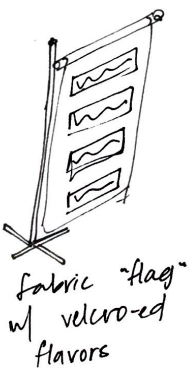
small enough to fit in carts



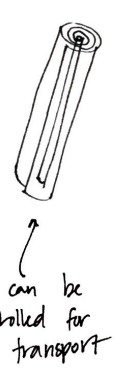
Frame - Flavors look on to each other



double-sided



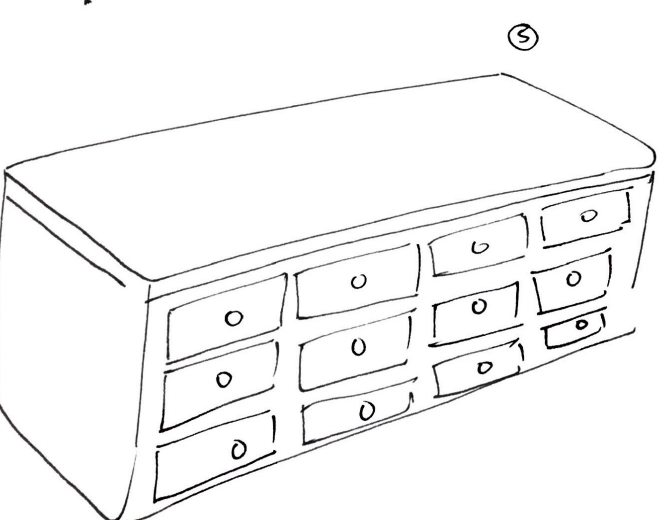
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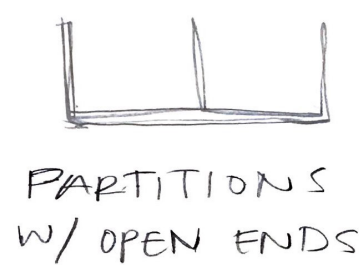
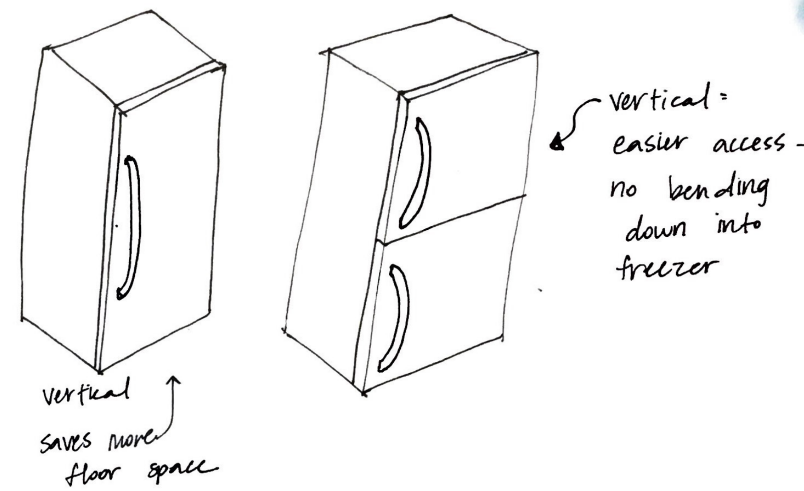
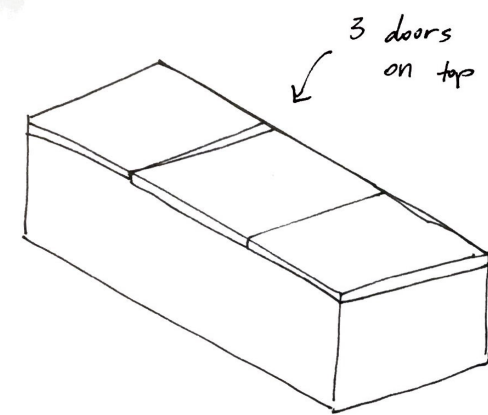
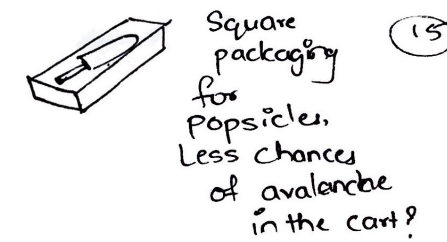
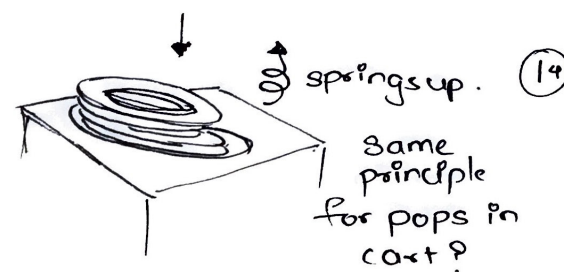
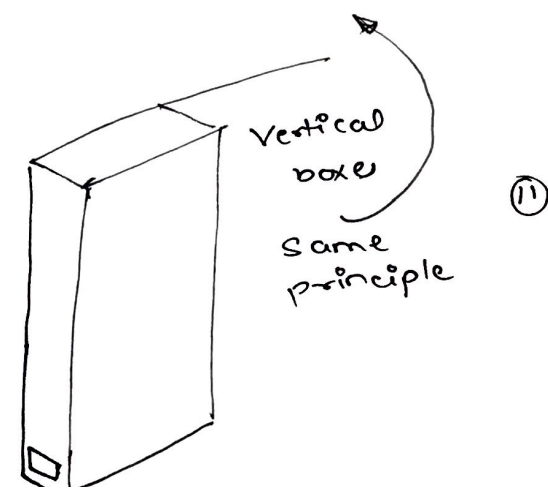
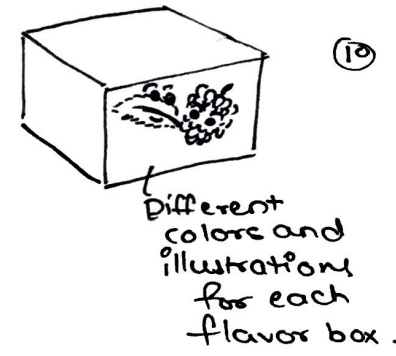
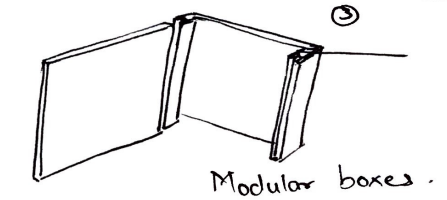
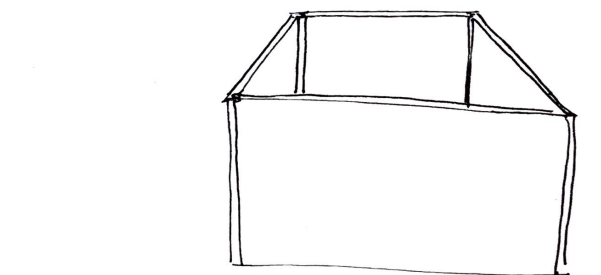
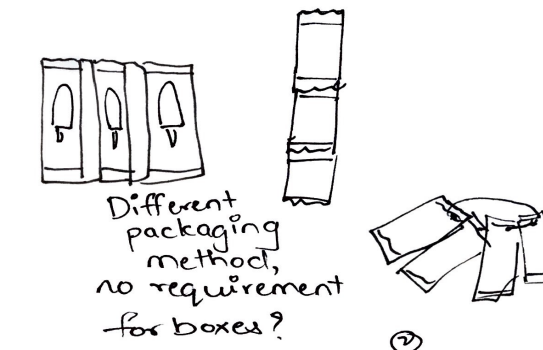
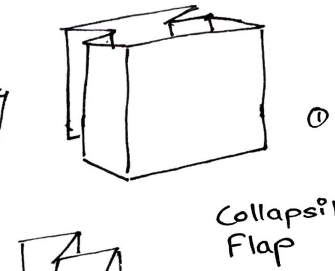
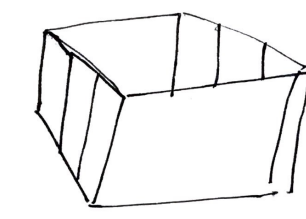
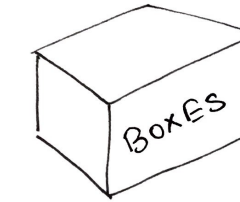
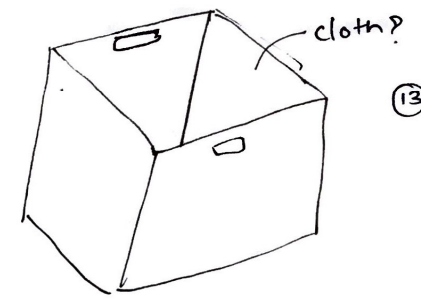
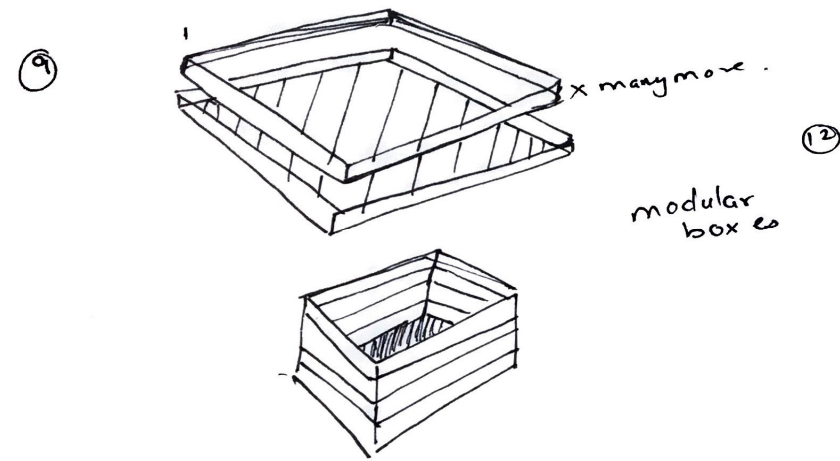
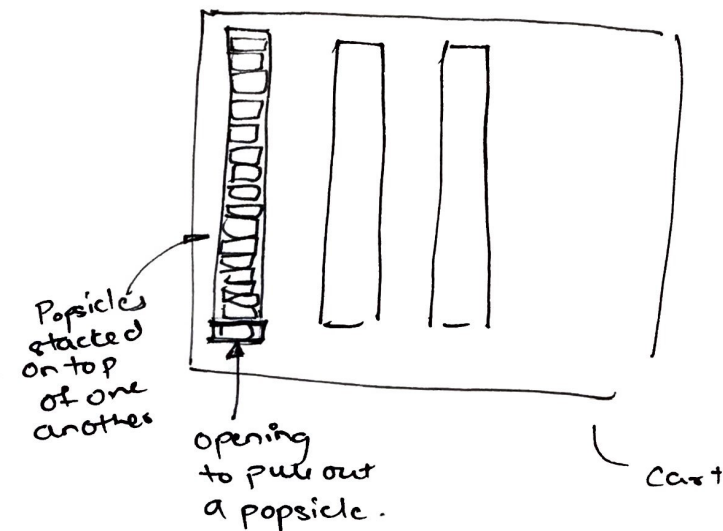
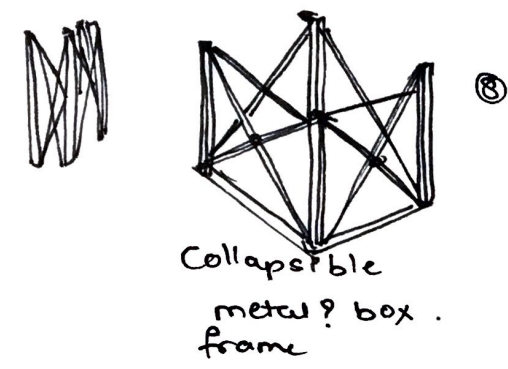


Drawers system for cooler?

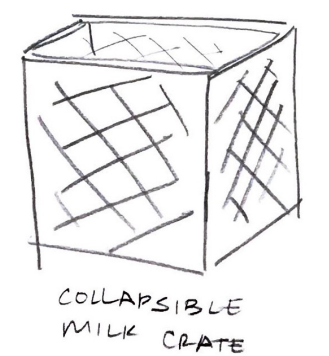
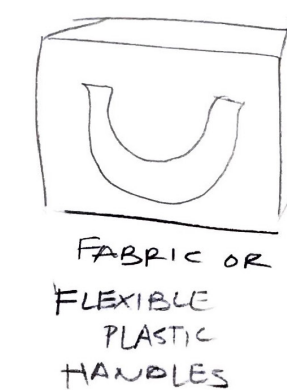
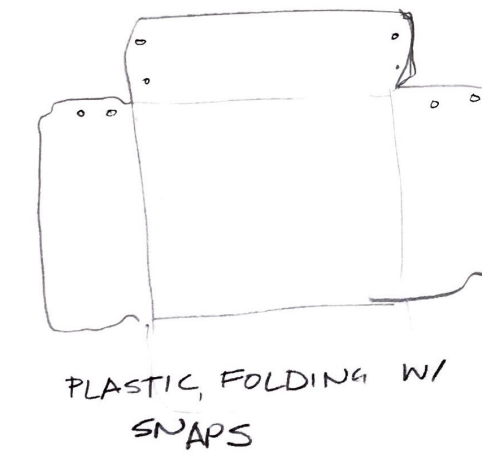
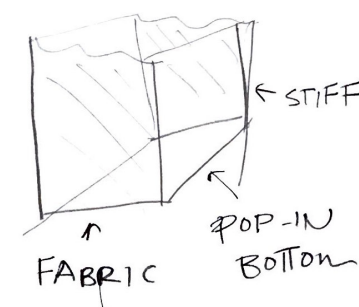
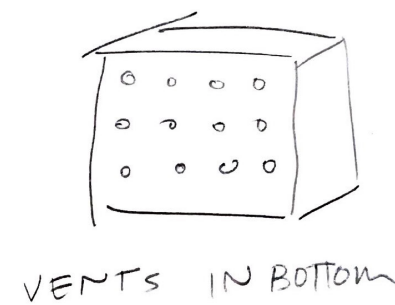
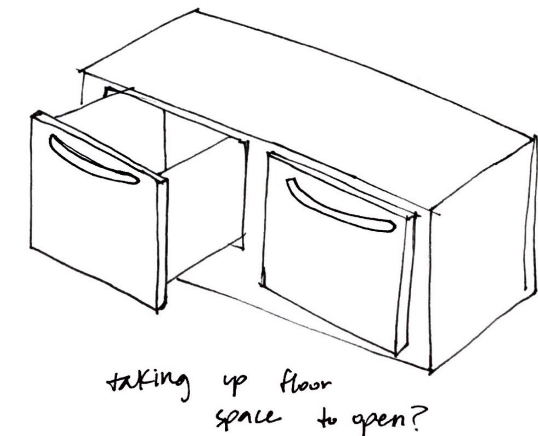
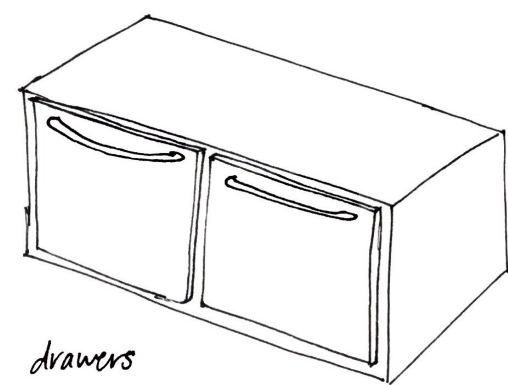
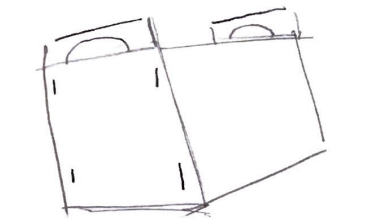


Redesign cart Drawers or cart?

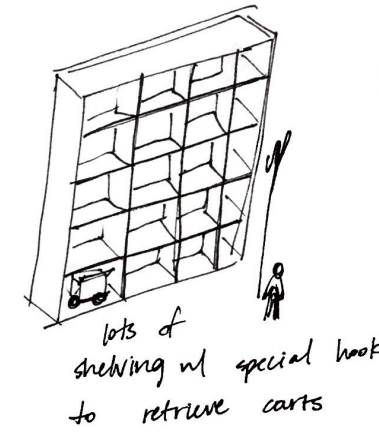
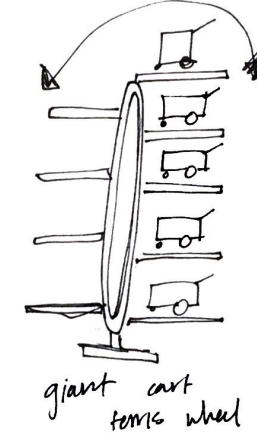
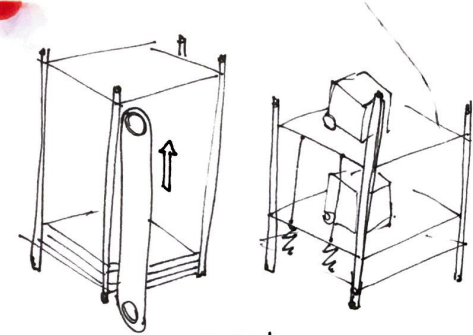
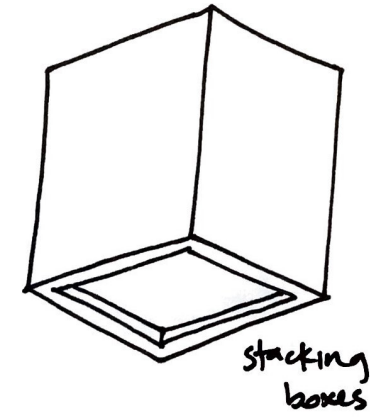
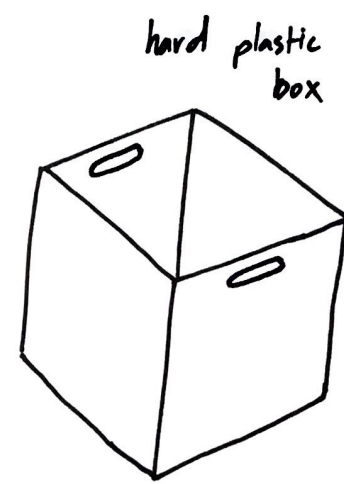
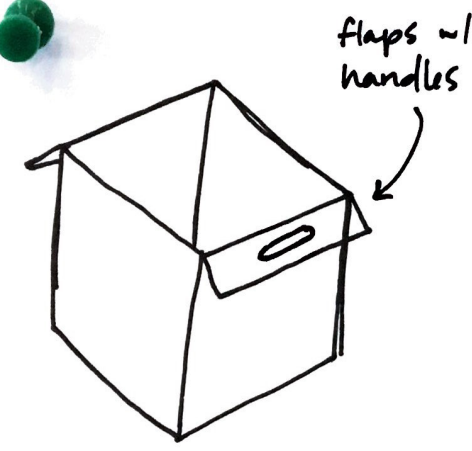
Initial Sketches



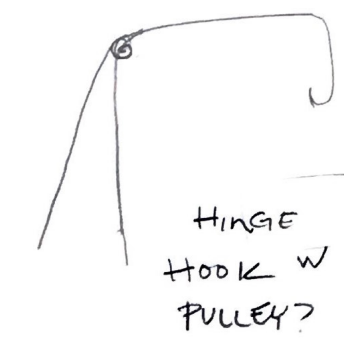
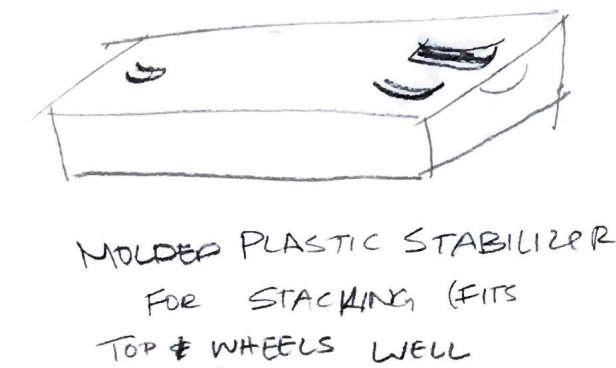
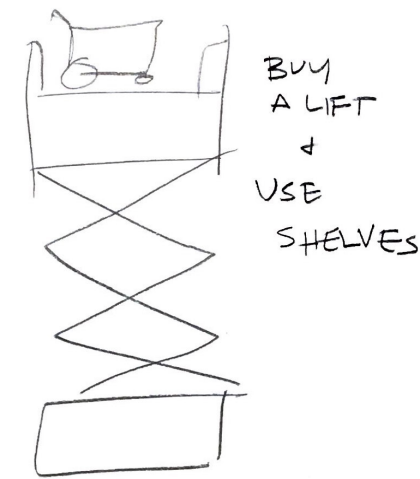
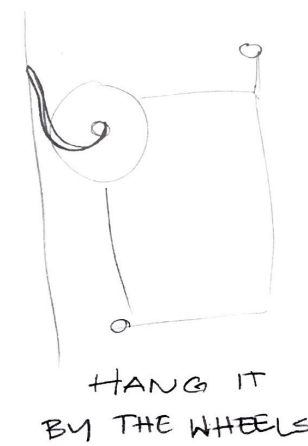
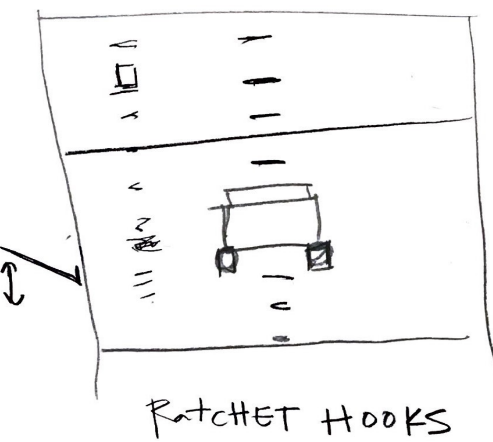
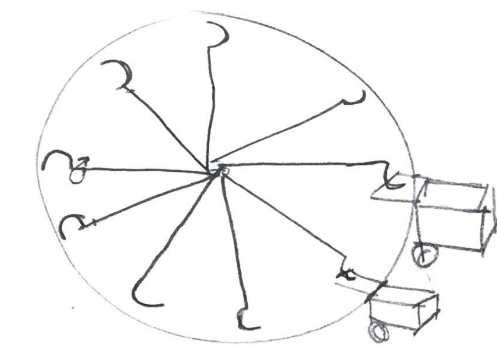
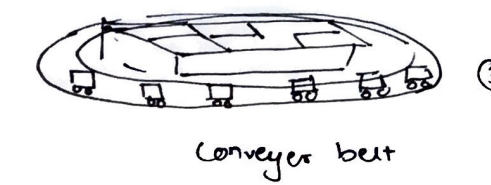
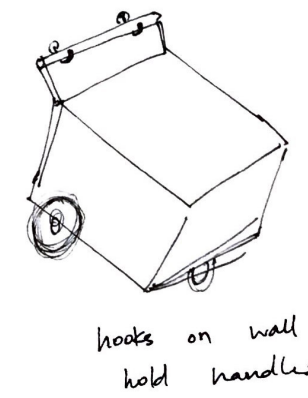
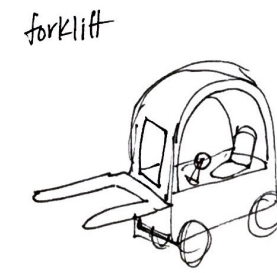
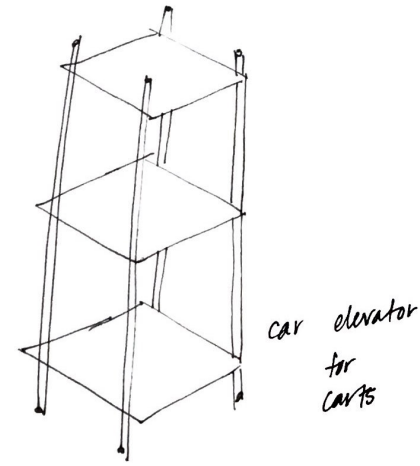
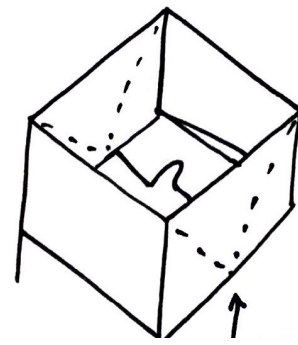
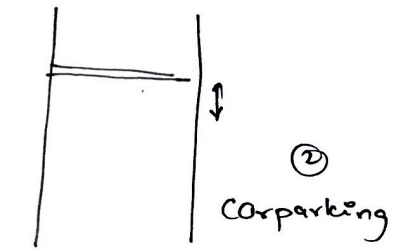
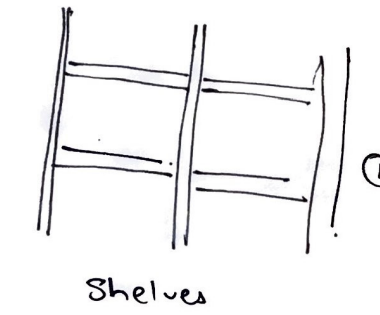
- MATERIALS
- ALUMINUM
 - STAINLESS
 - NEOPRENE
 - HARD PLASTIC
 - CORRUGATED PLASTIC
 - FLEXIBLE PLASTIC SHEETING
 - WAXED CARDBOARD



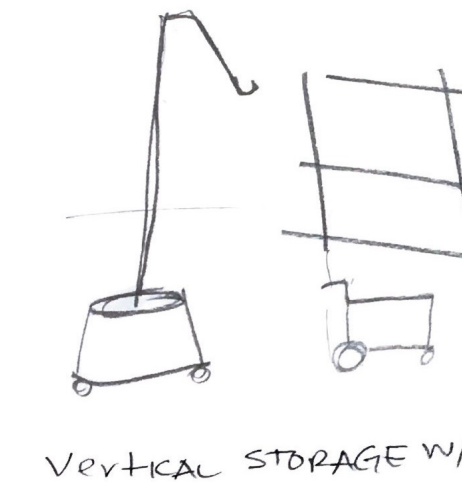
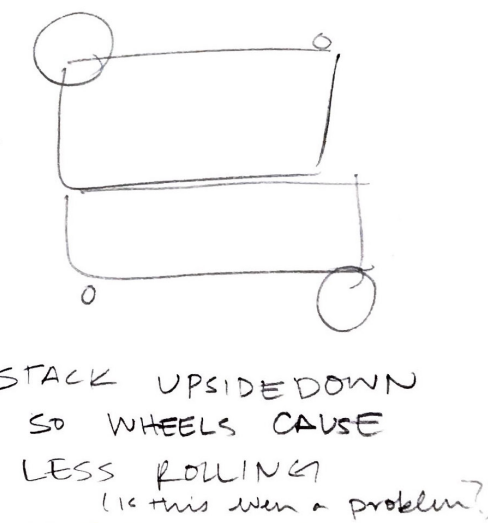
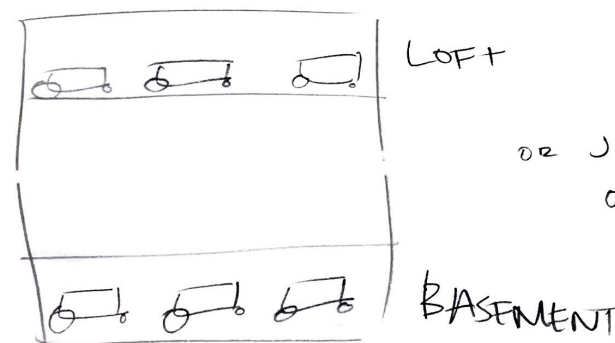
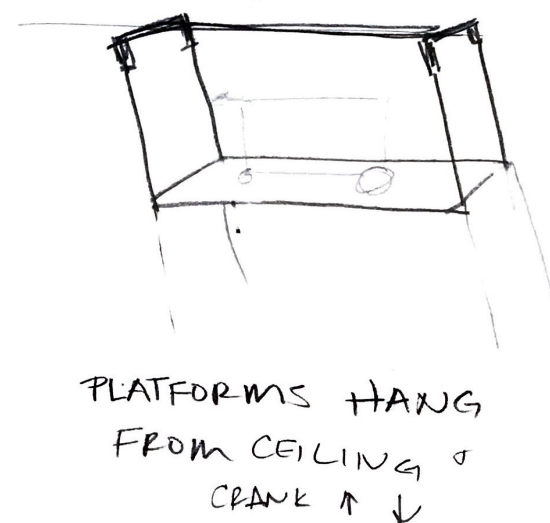
Initial Sketches



Cart Storage.



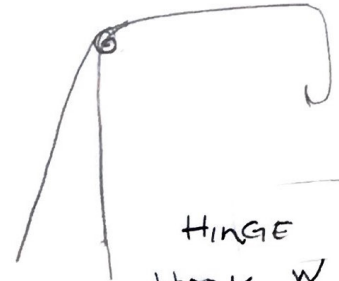
OR VERT. CONVEYER BELT w/ HOOKS + STOP



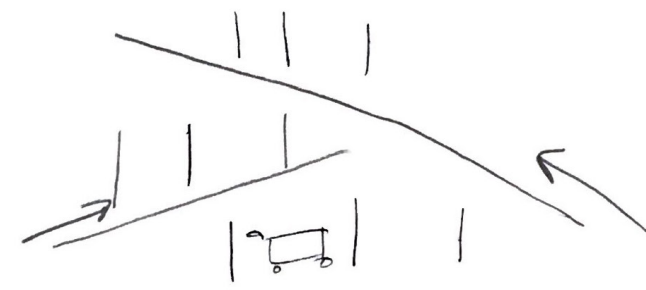
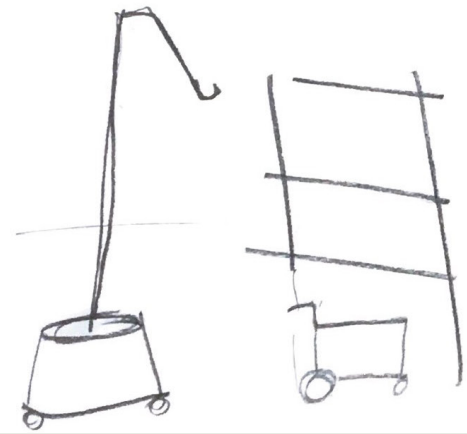
Initial Sketches



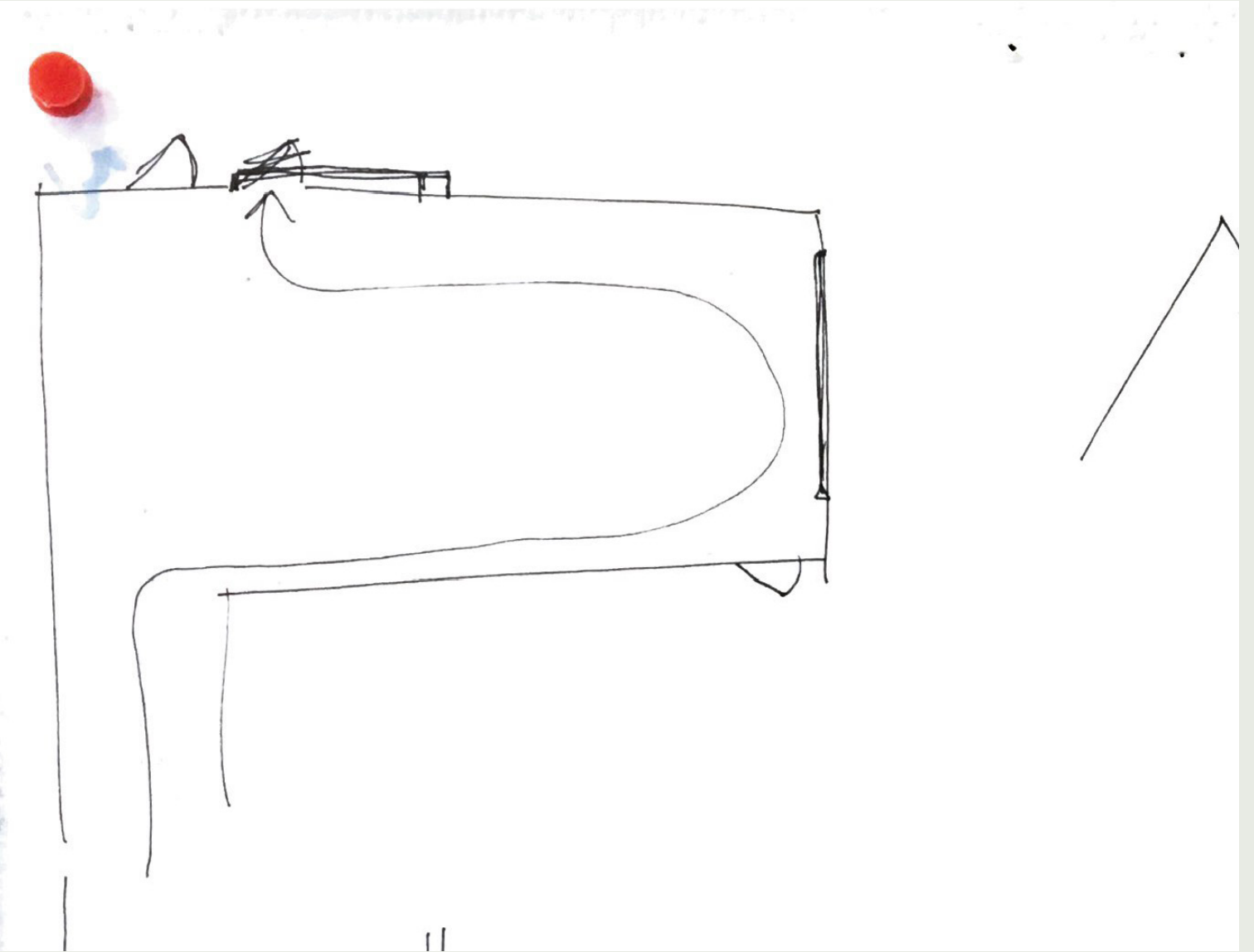
MOLDED PLASTIC STABILIZER
FOR STACKING (FITS
TOP & WHEELS WELL)



HINGE
HOOK W
PULLEY?



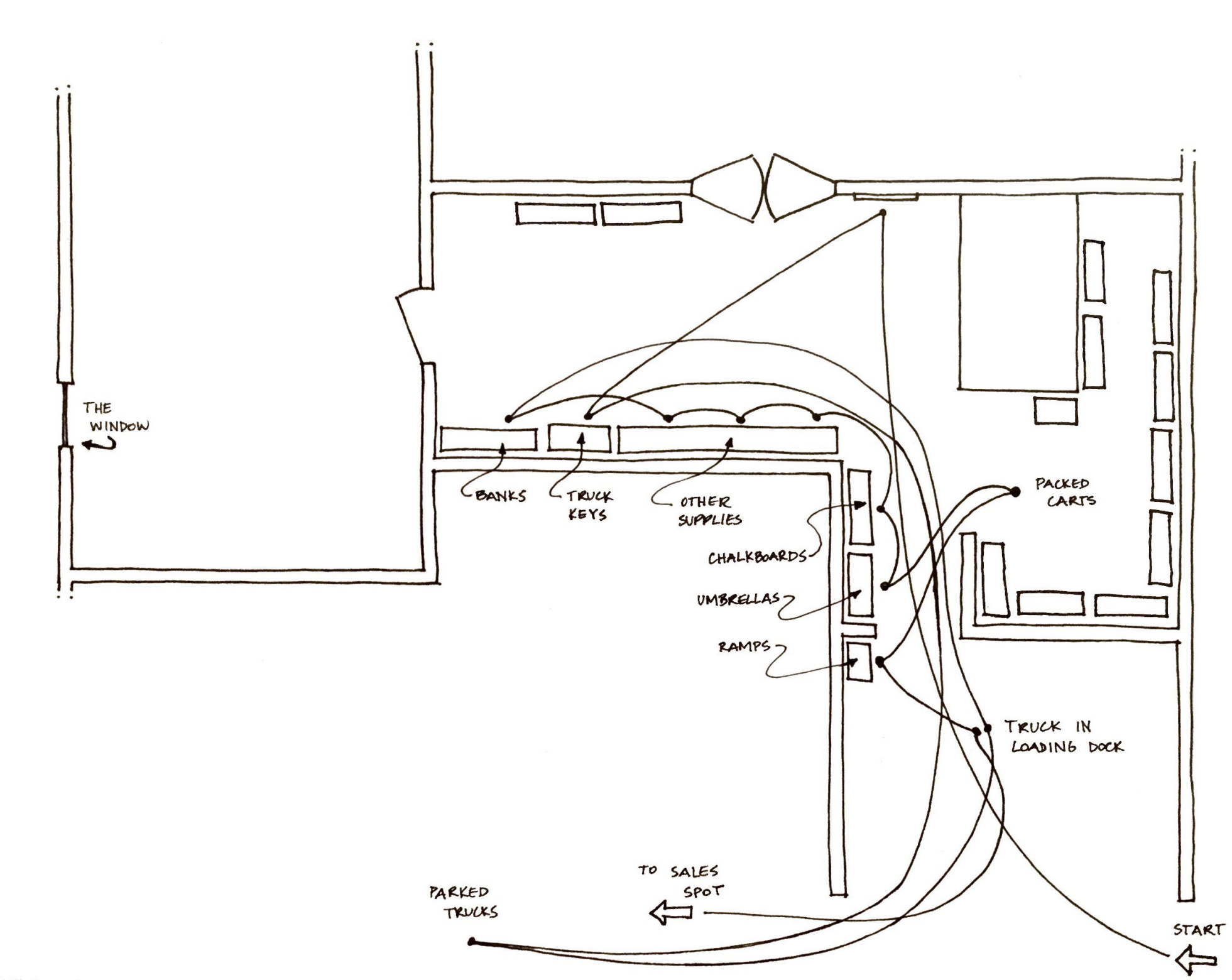
SAFETY
LATCH
OVER HOOK



PRELIMINARY IDEAS



Pop Labeling and Organization



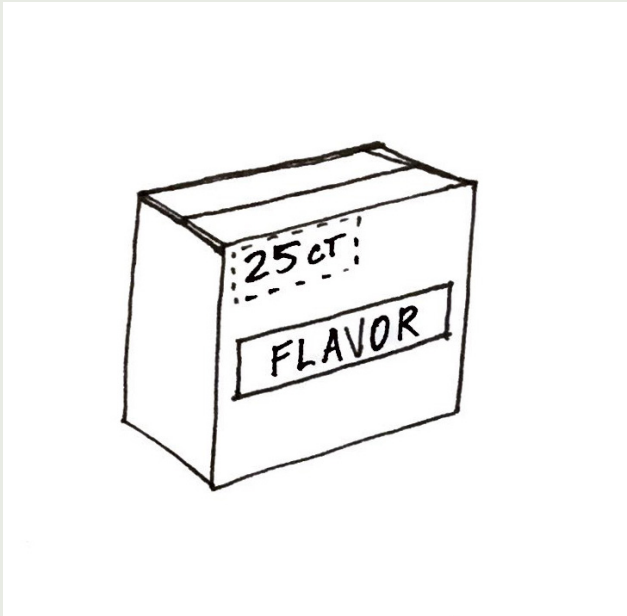
Map follows path of a slinger as they start their shift

Slingers must gather many supplies, and it is easy to forget something

Elizabeth Street HQ (Not to Scale)

Pop Labeling and Organization

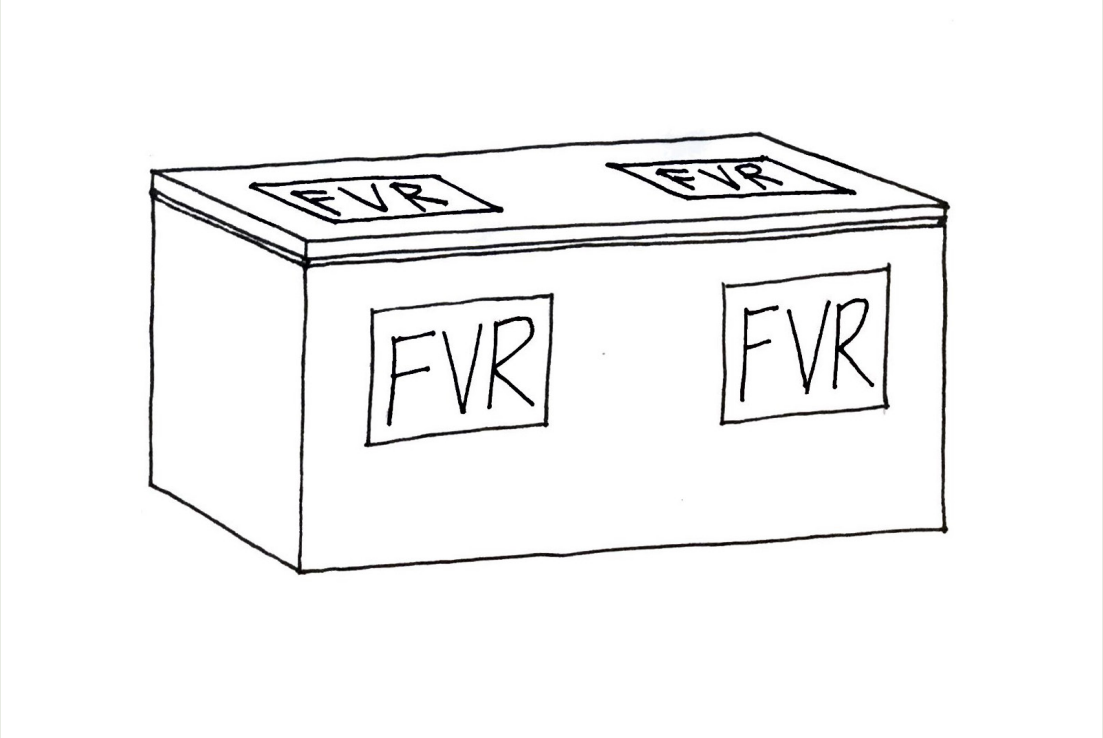
Removable and reusable labels used from production to sales



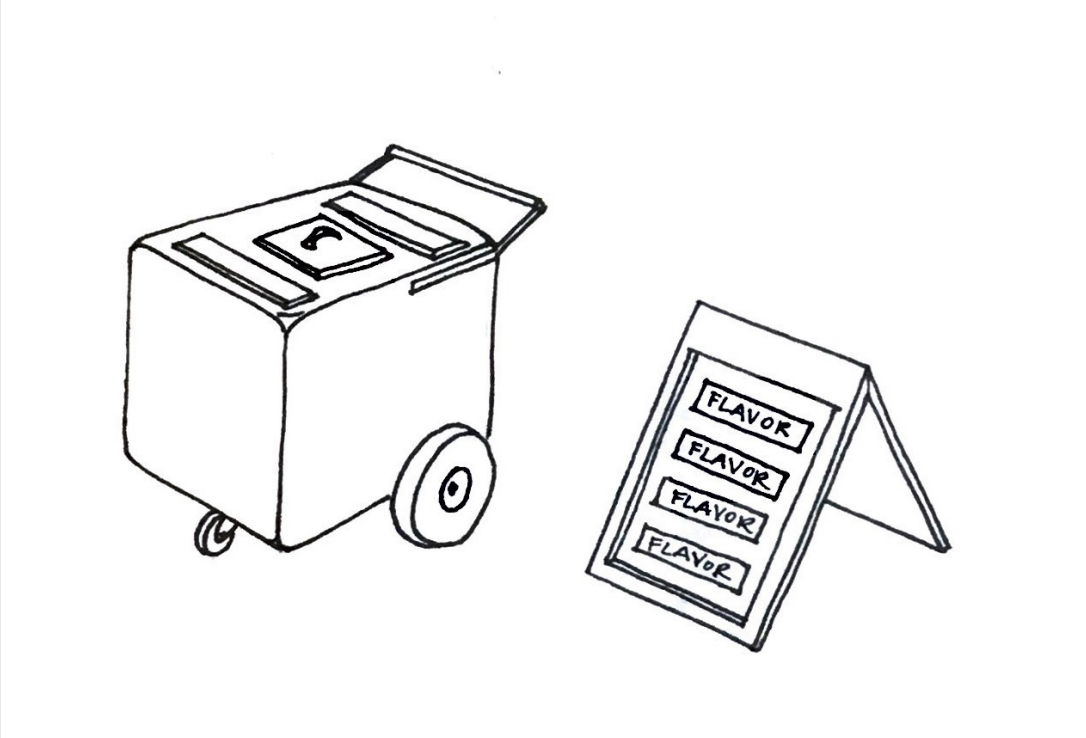
Label attached to box



Boxes in freezer



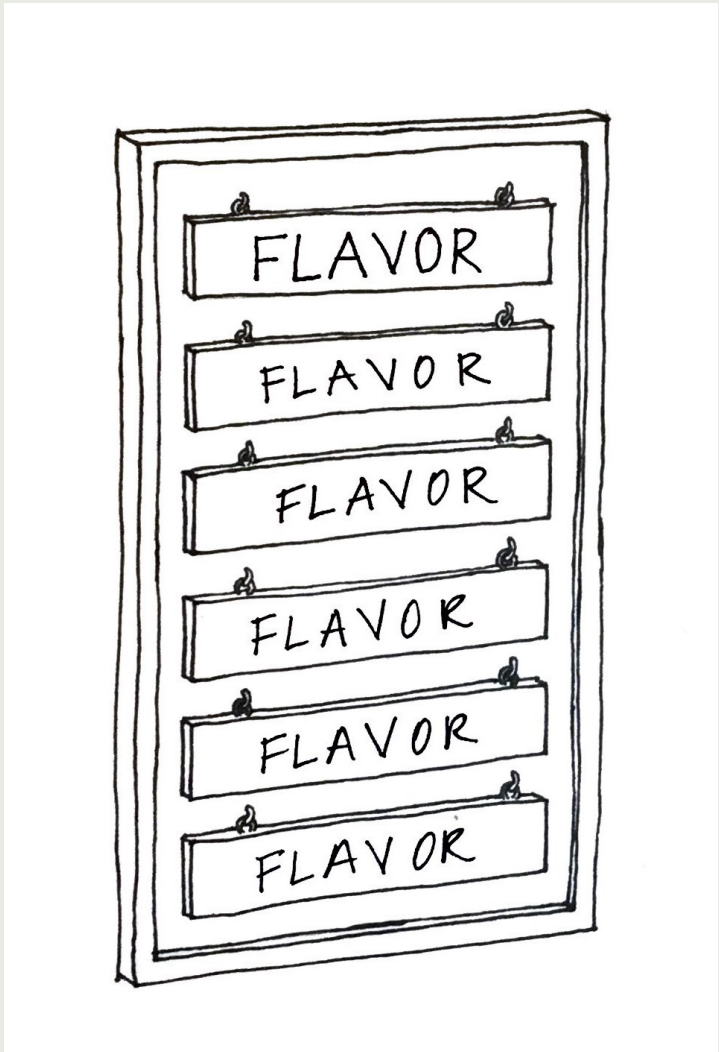
Large magnets used to label freezers



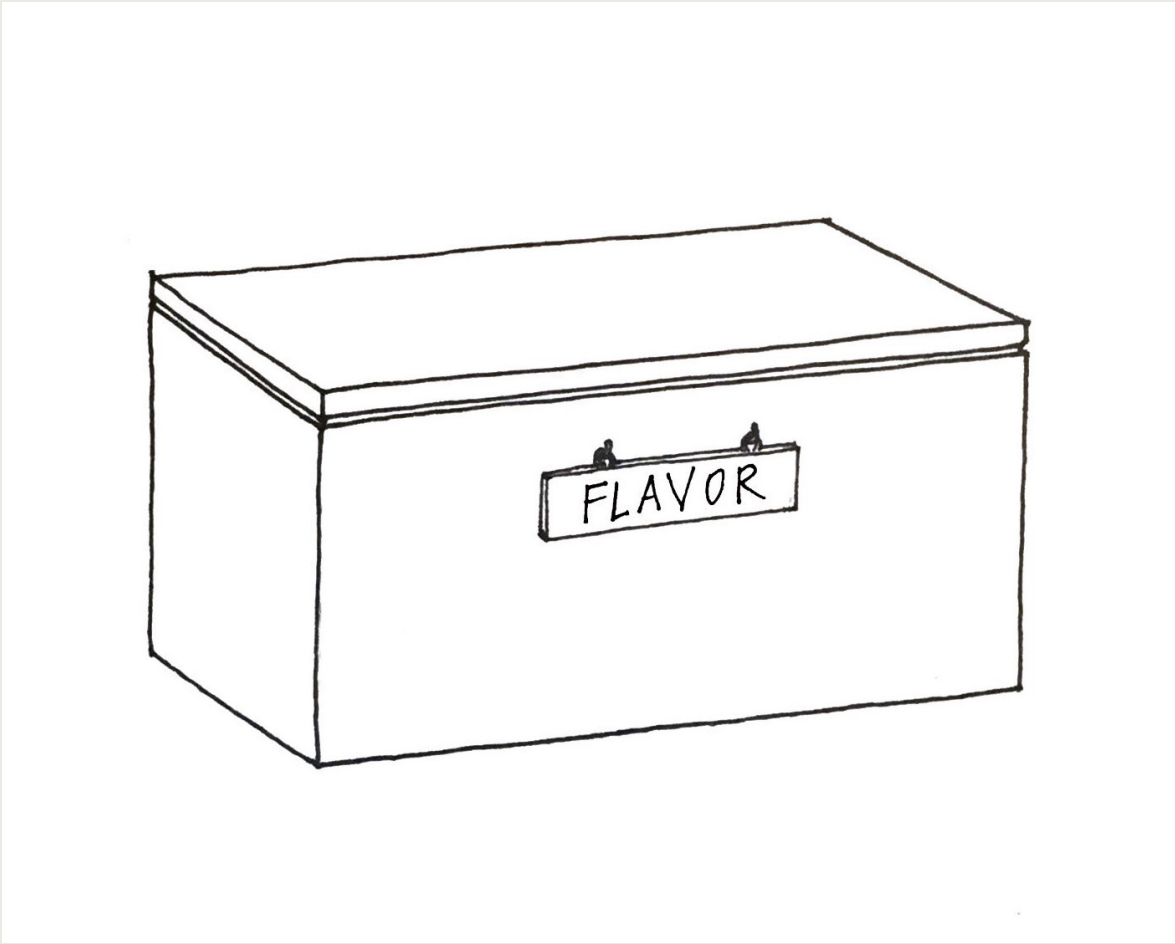
Labels from boxes detached and used on menus

Pop Labeling and Organization

Hooks used to attach labels to freezers and menus



Menu



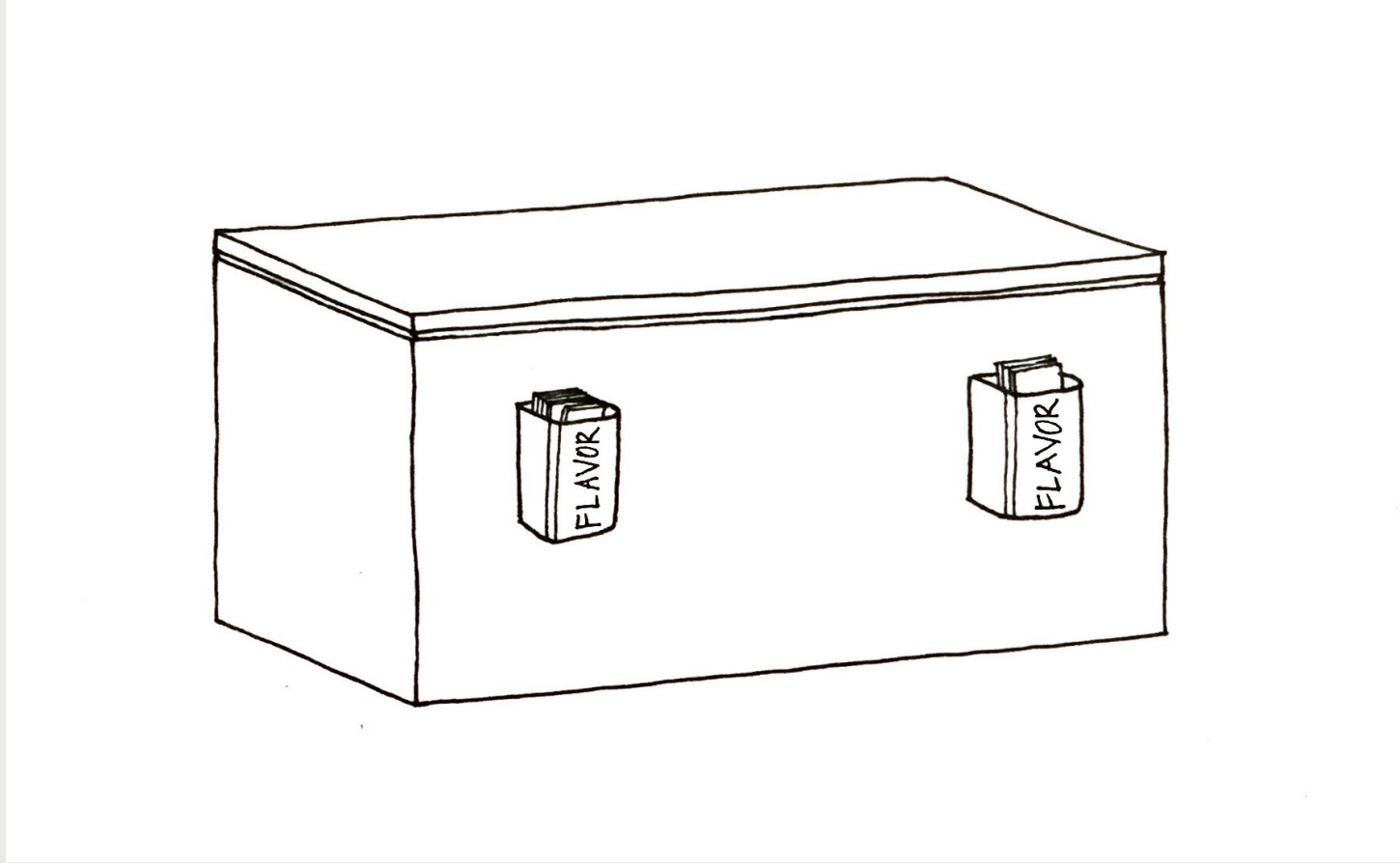
Freezer

Pop Labeling and Organization

Slats with flavors for menus are stored on freezer - slats added accordingly when packing cart



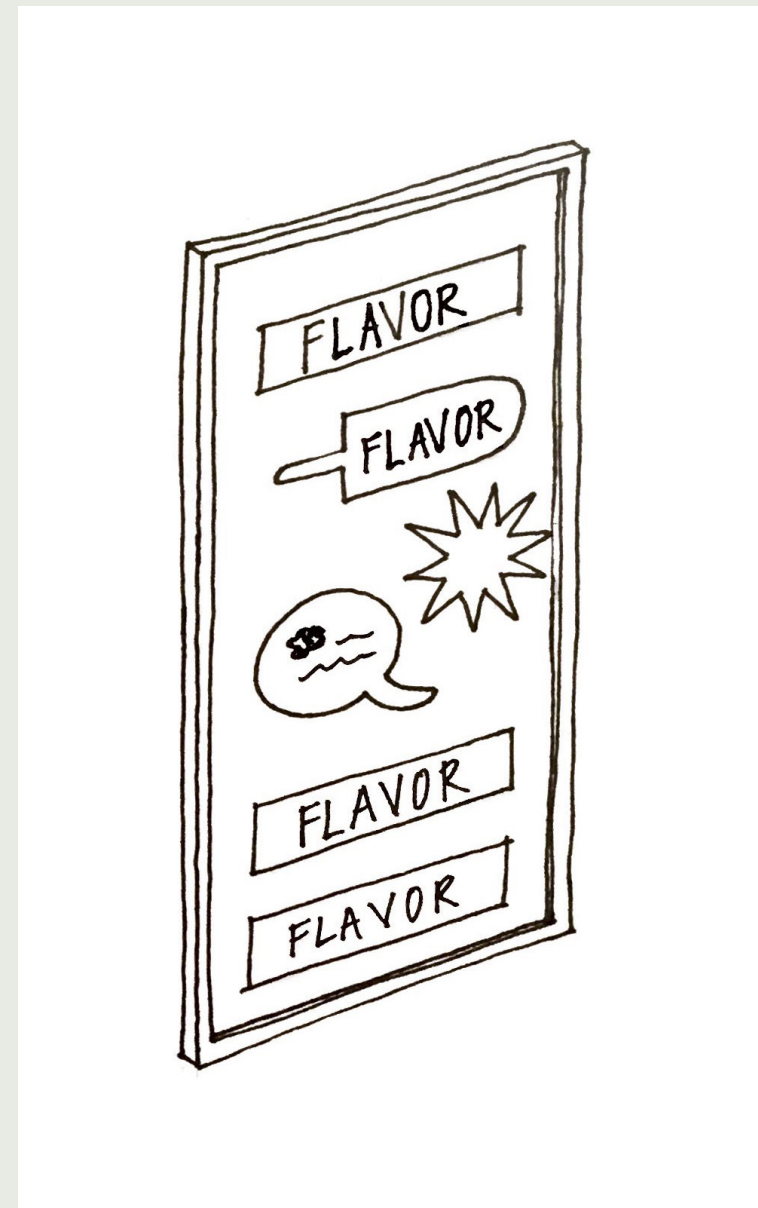
Menu



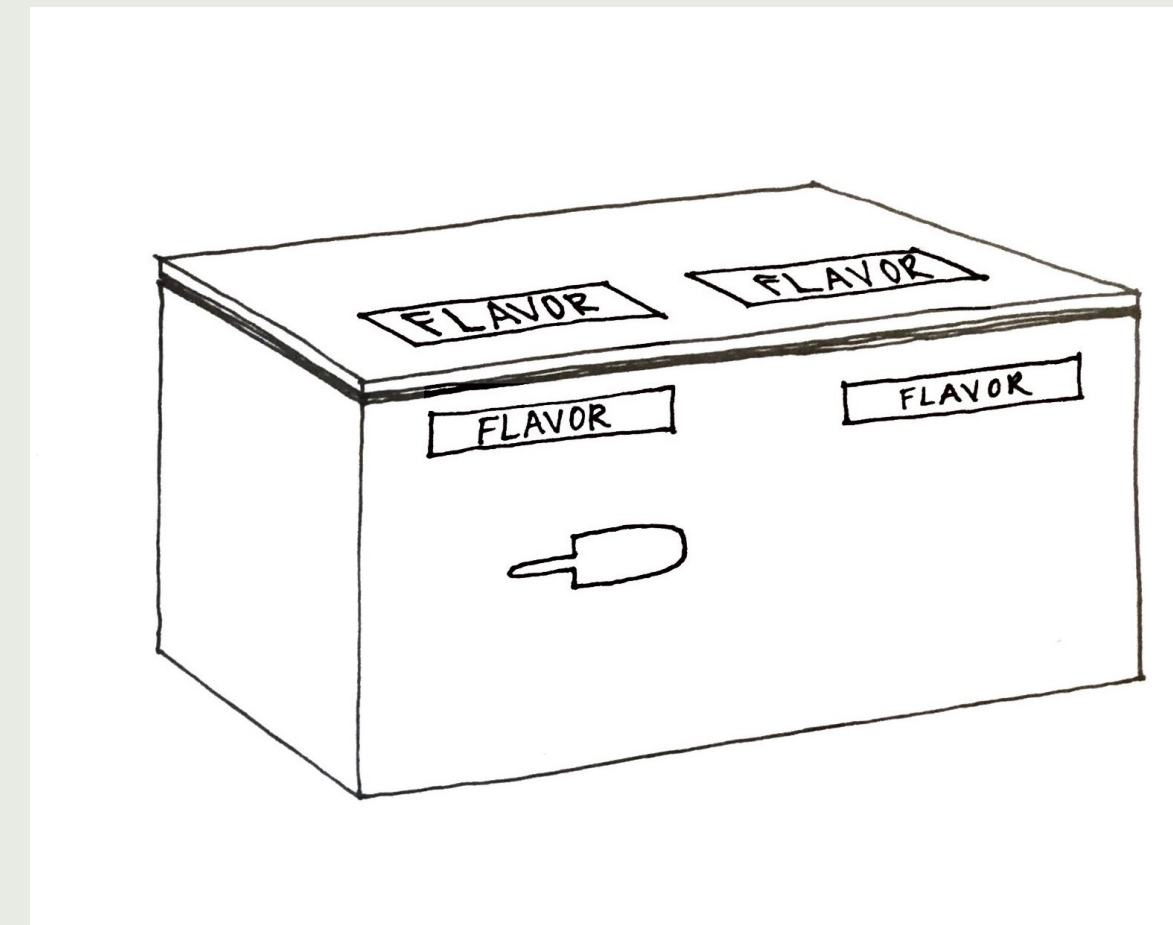
Freezer

Pop Labeling and Organization

Flavor magnets used on menu are also used for labeling freezers



Menu

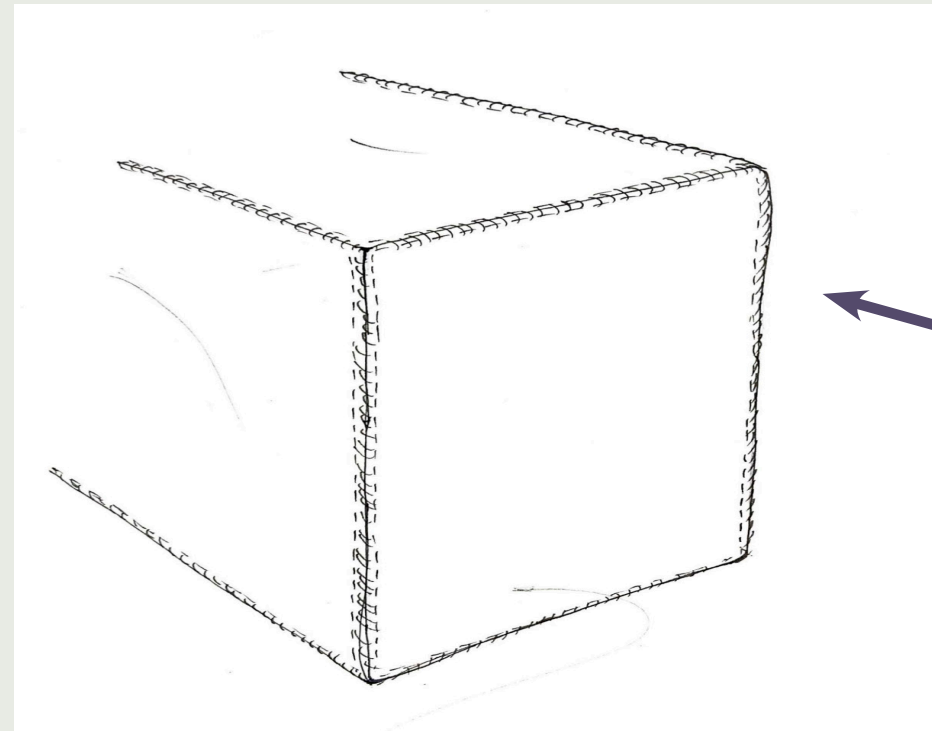
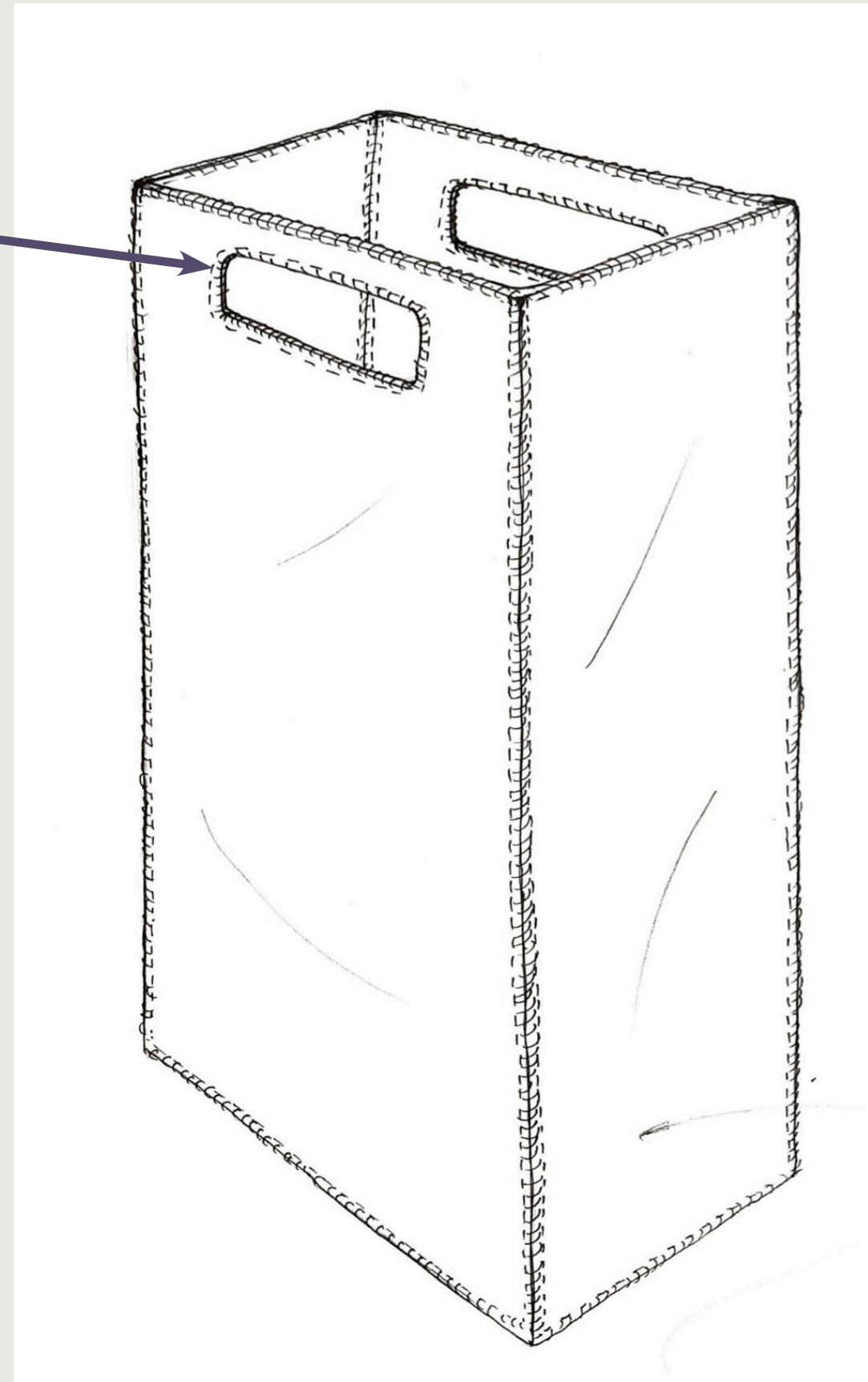


Freezer

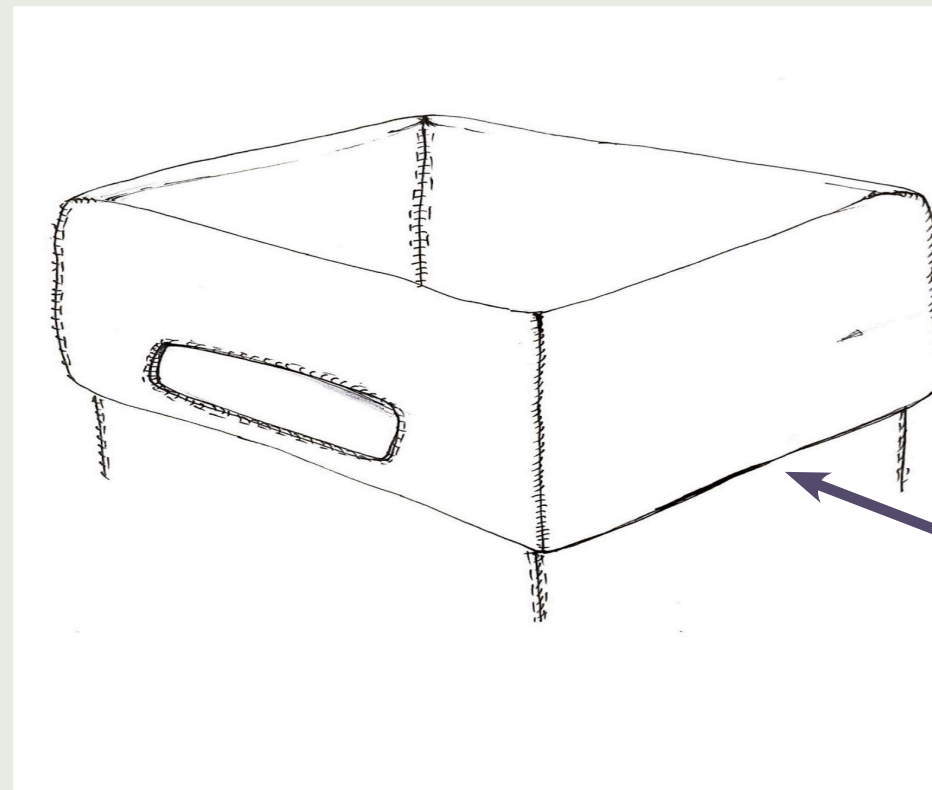
Containers

Soft Containers

Waterproof stretchy fabric



Hard bottom



Fold top to get to the bottom



Containers



Soft Containers

Tenske



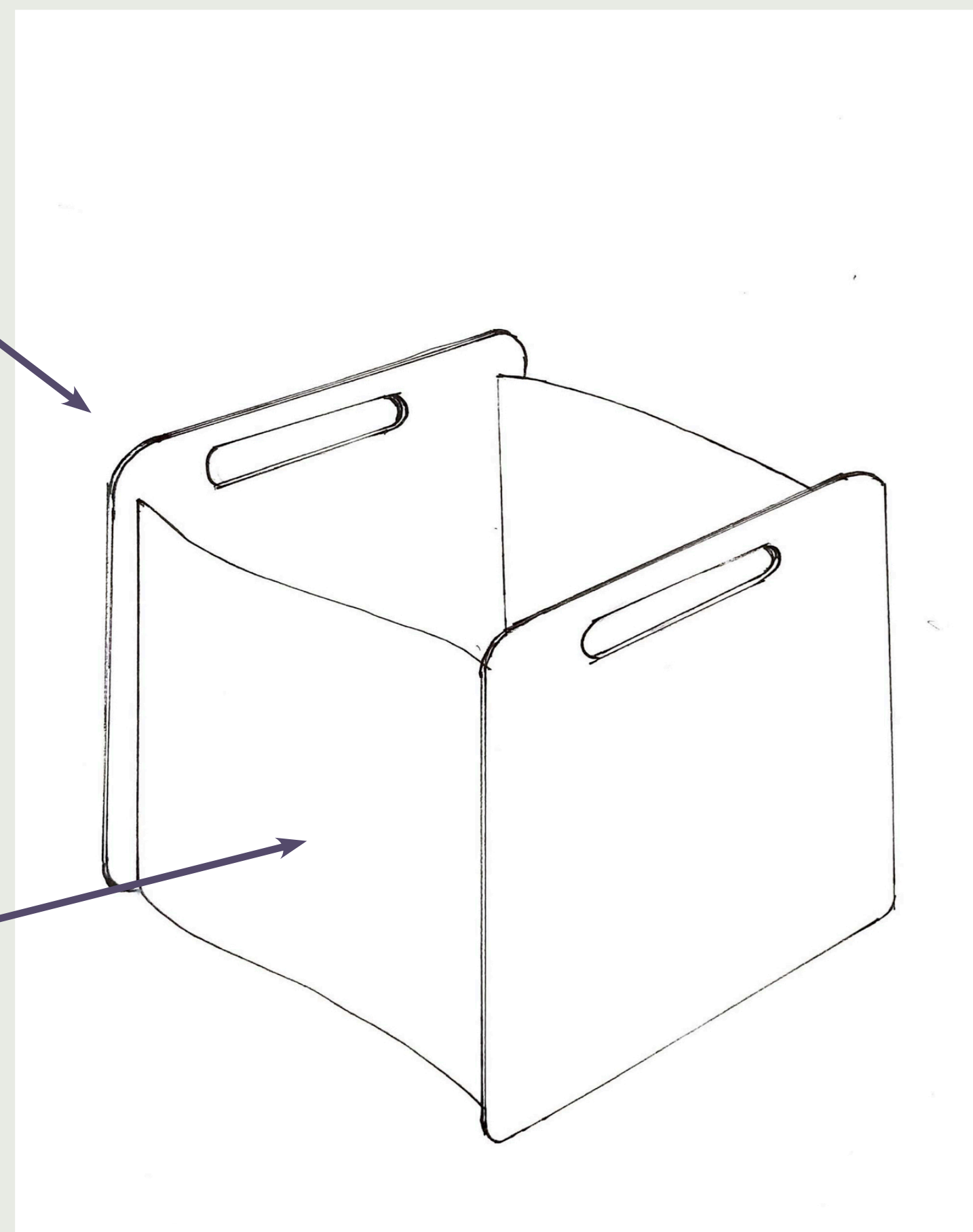
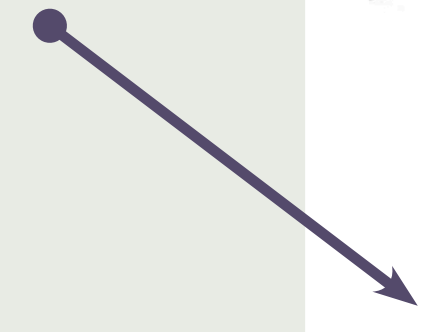


Containers

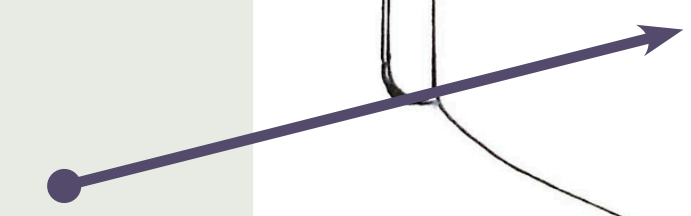


Collapsible Containers

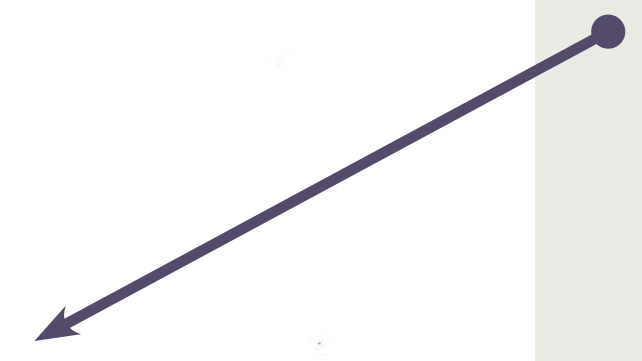
Hard sides



Waterproof fabric



Collapsible





Containers



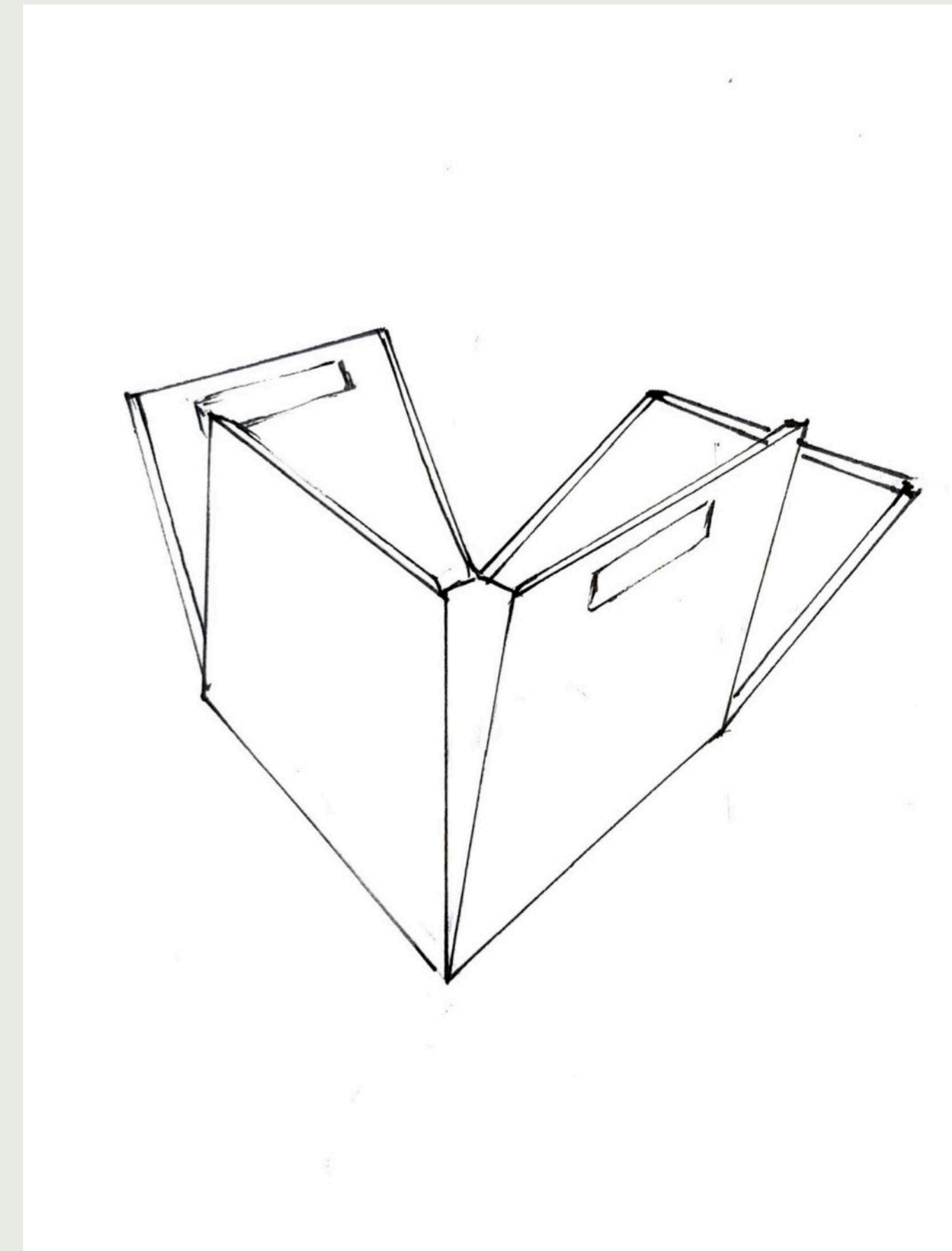
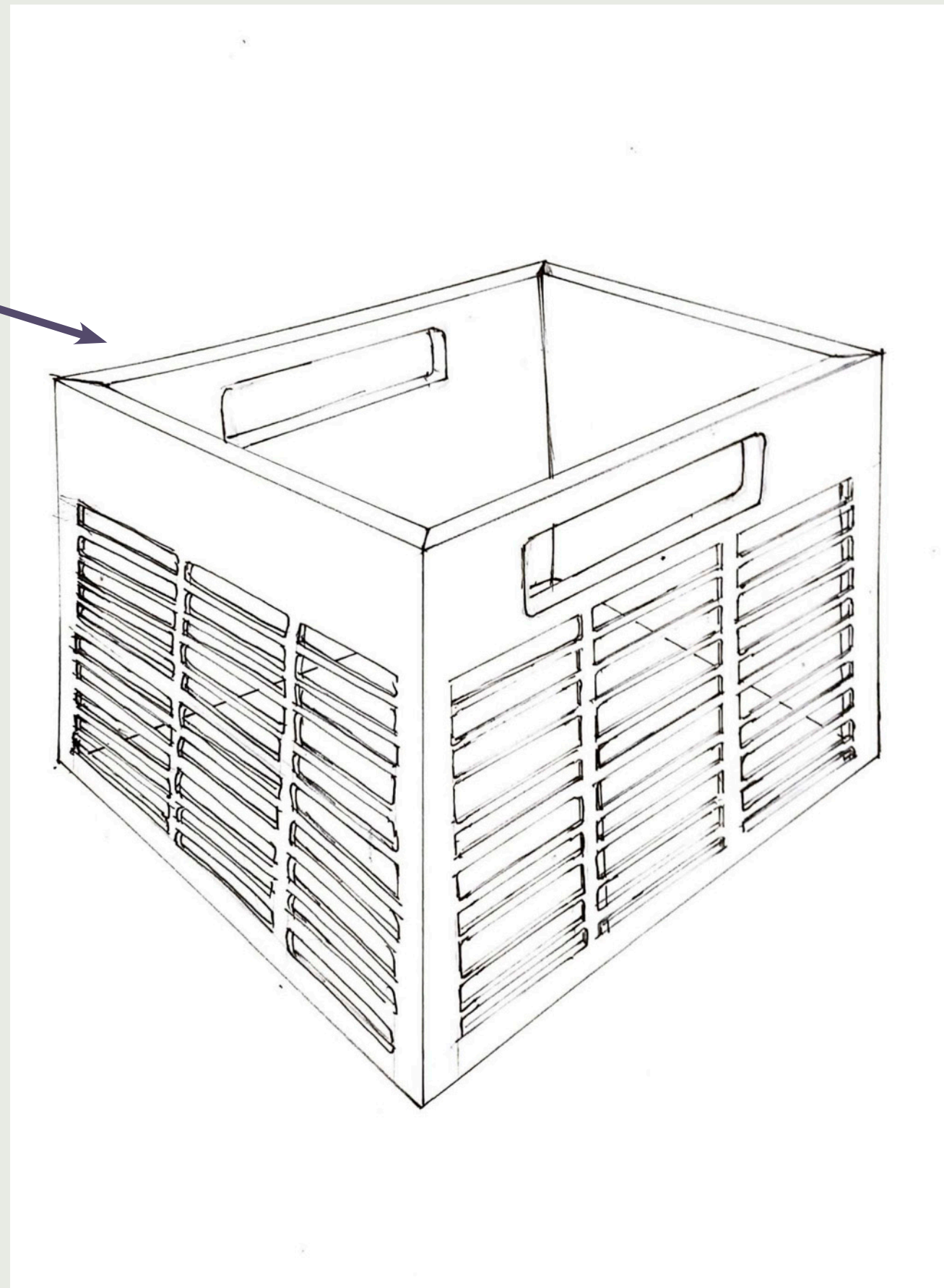
Collapsible Containers



Containers

Modular Containers

Collapsible milk
crate

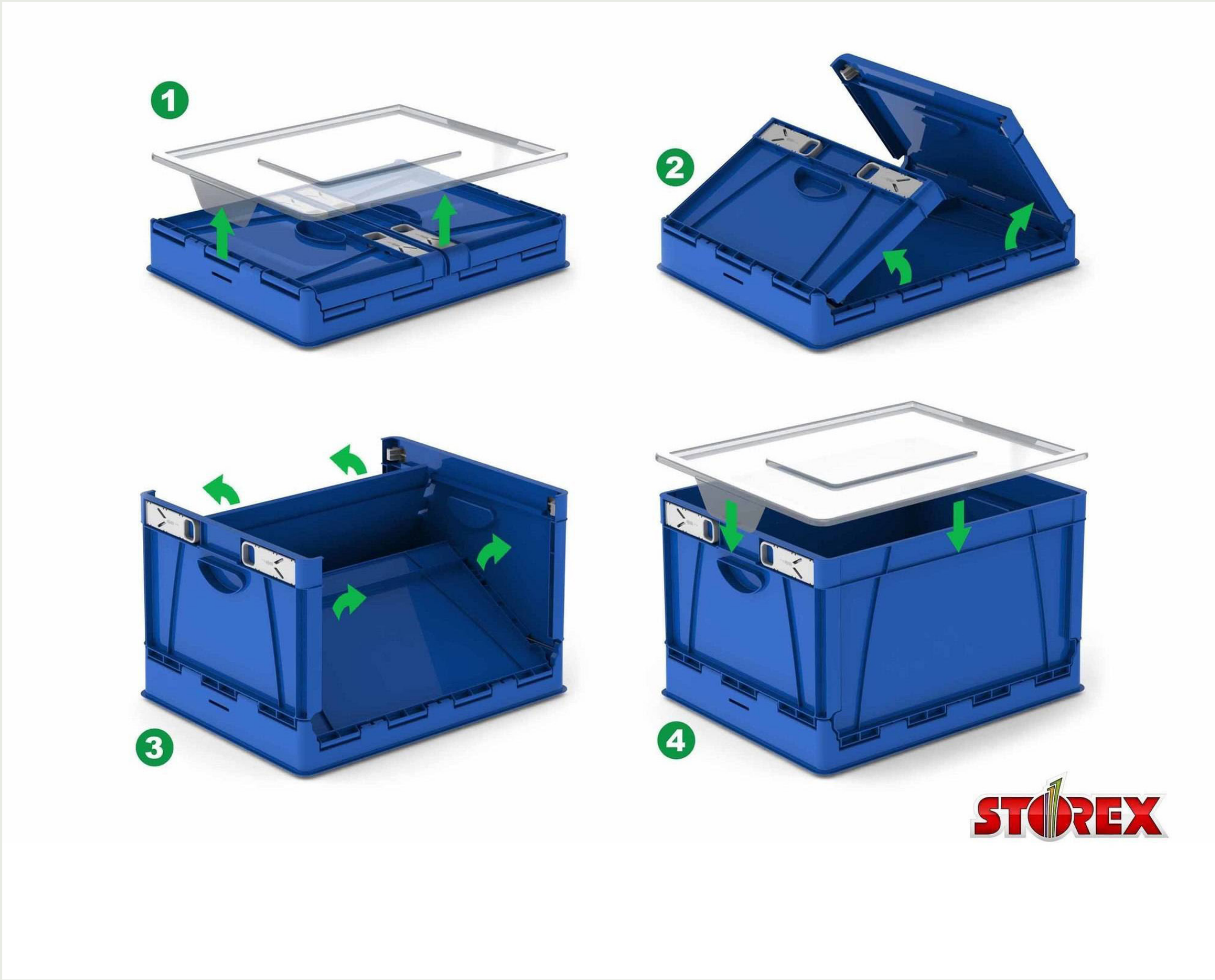




Containers

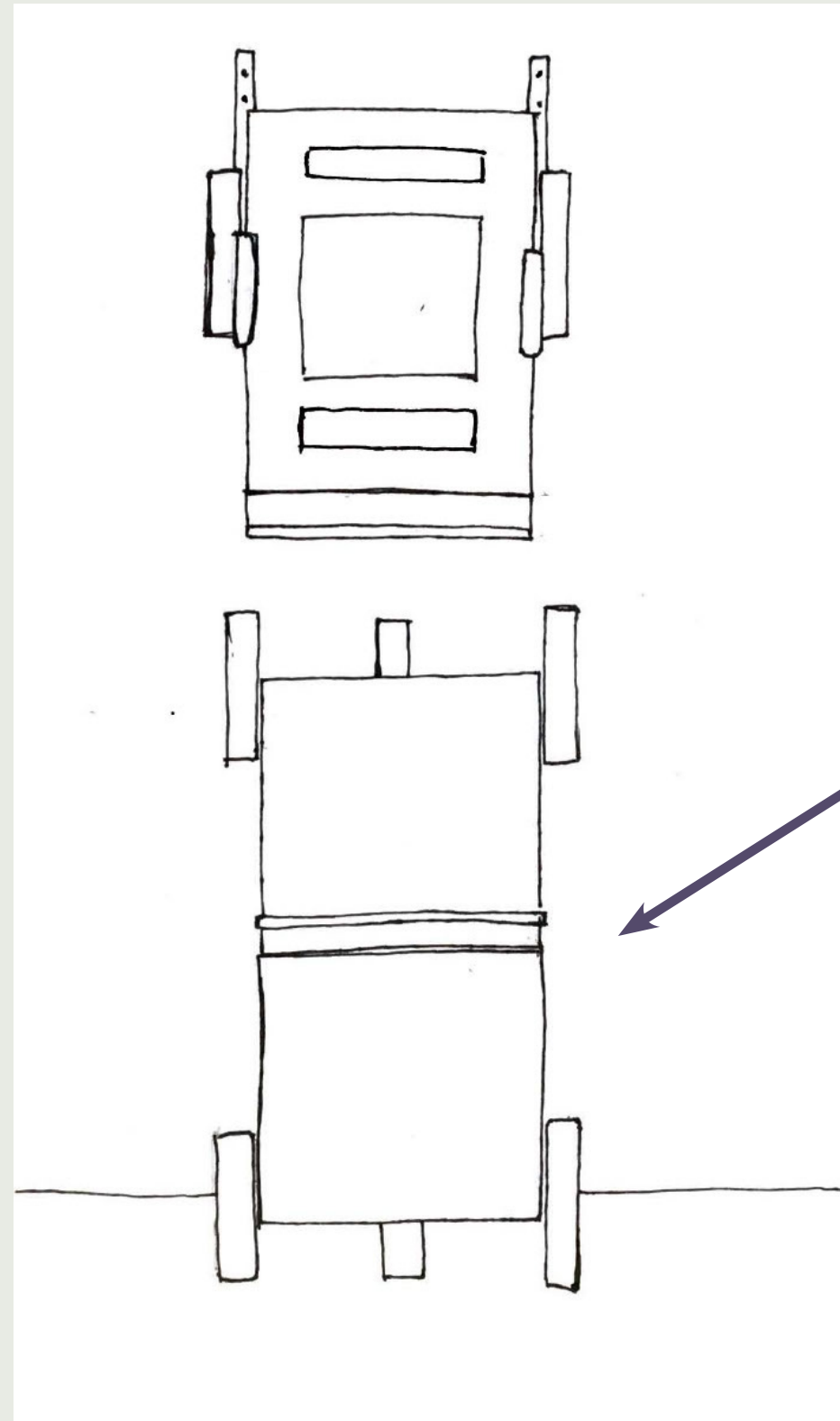
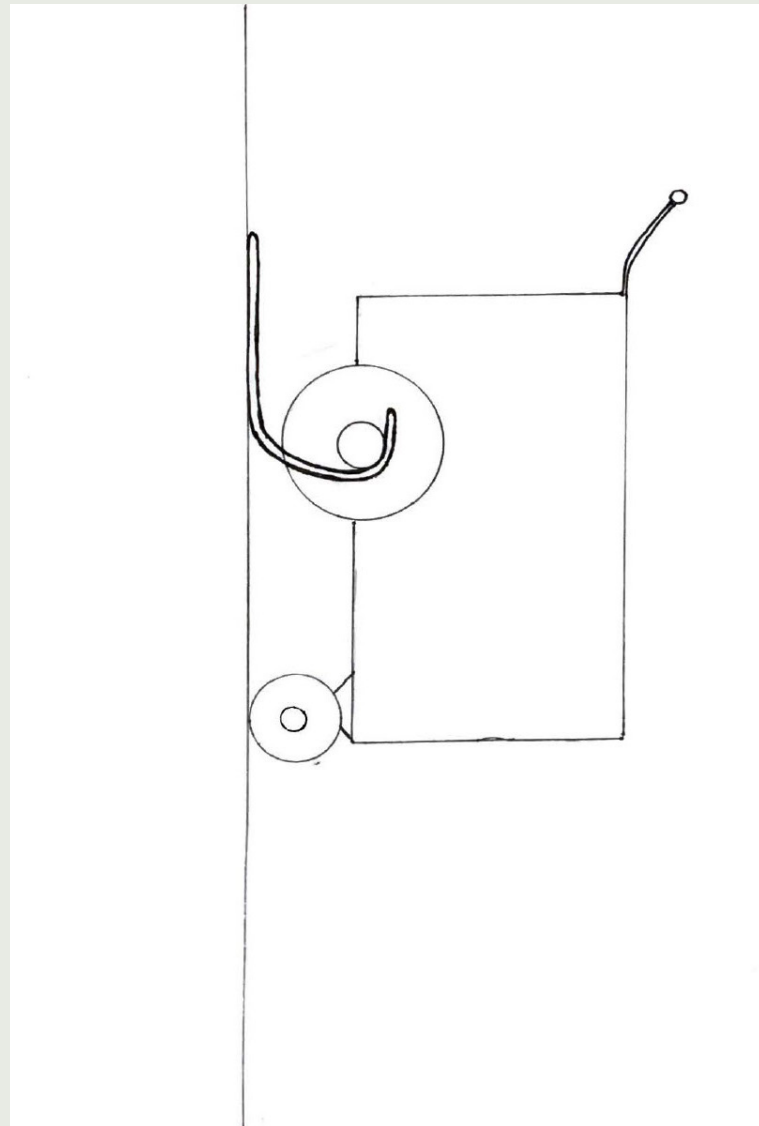


Modular Containers

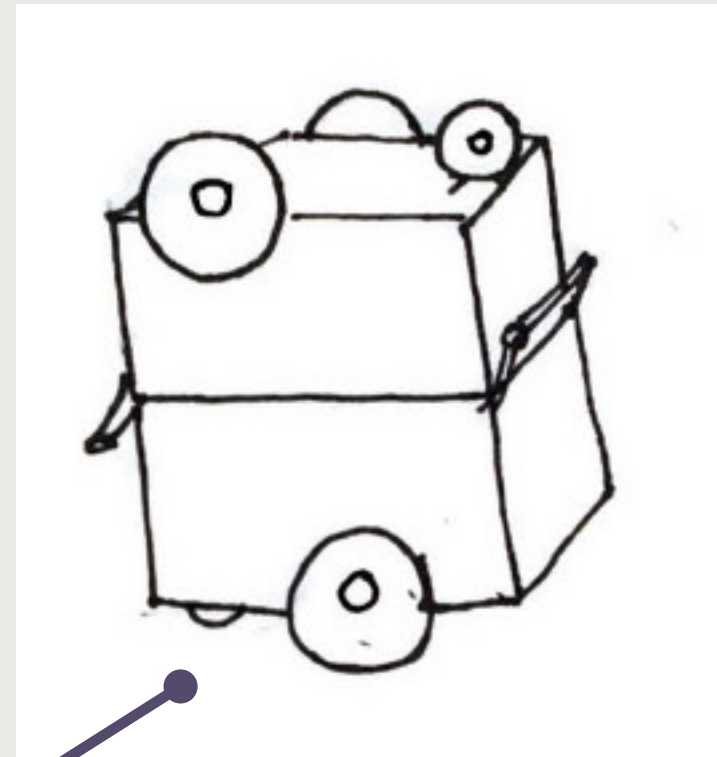


Cart Storage

Hanging Storage



Hanging with carts stacked underneath



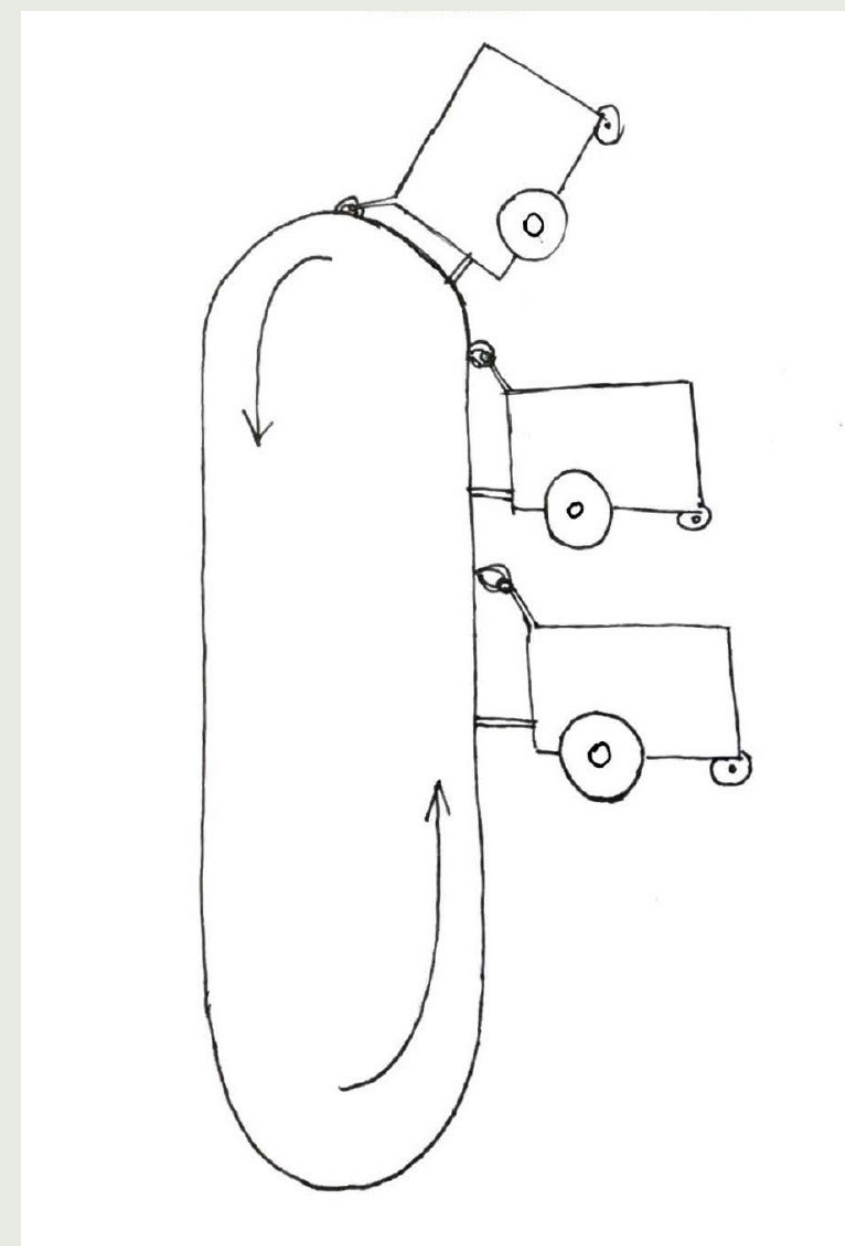
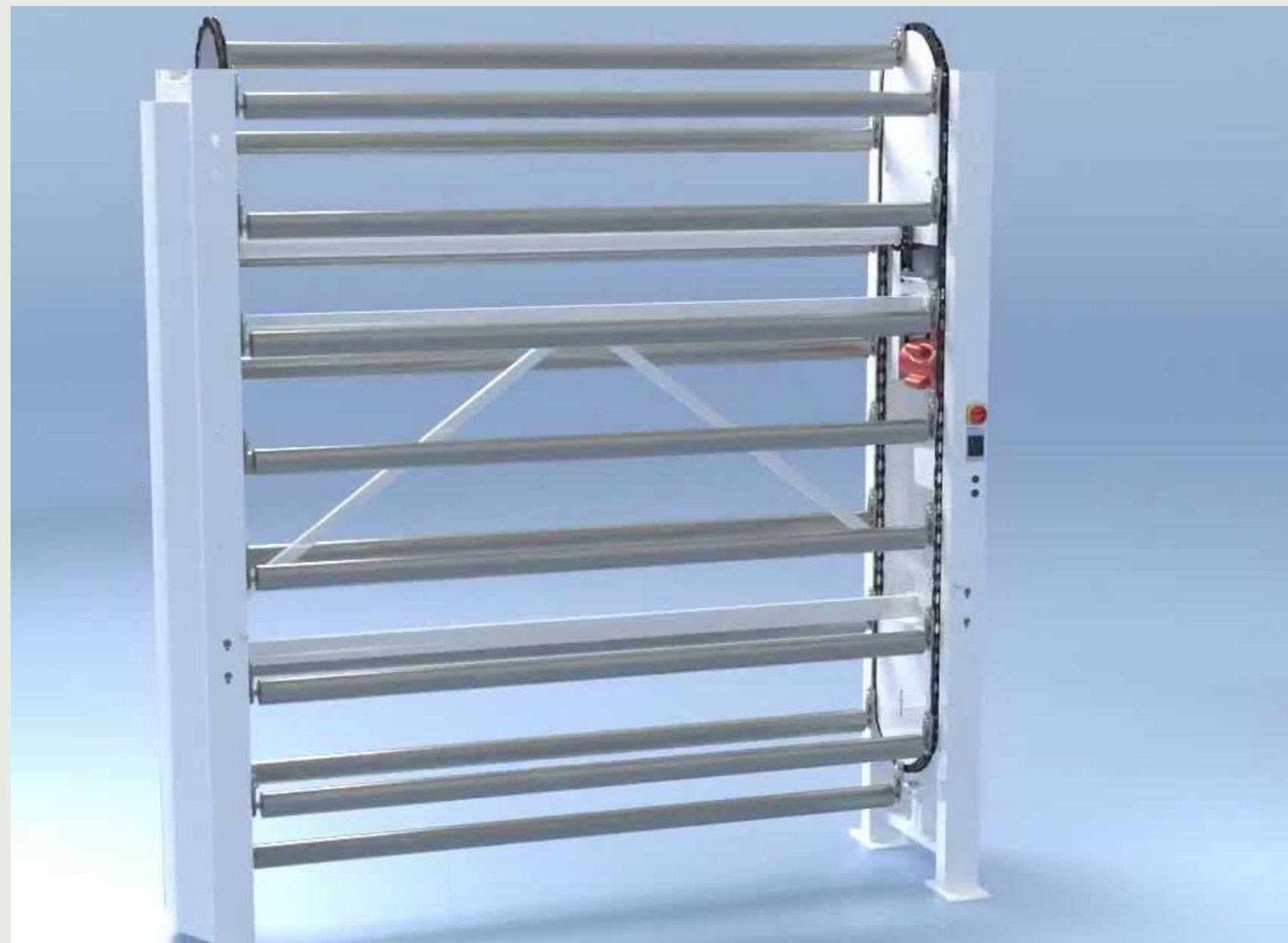
There are many available hook options



Cart Storage



Vertical Carousel

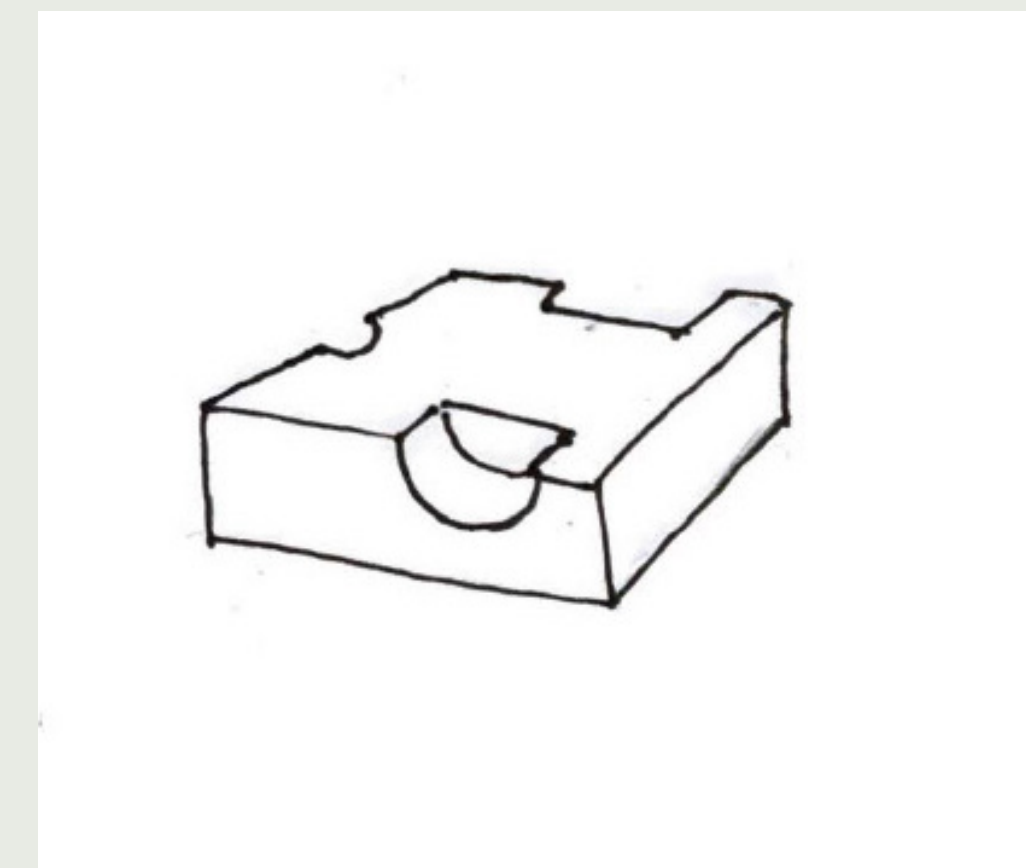
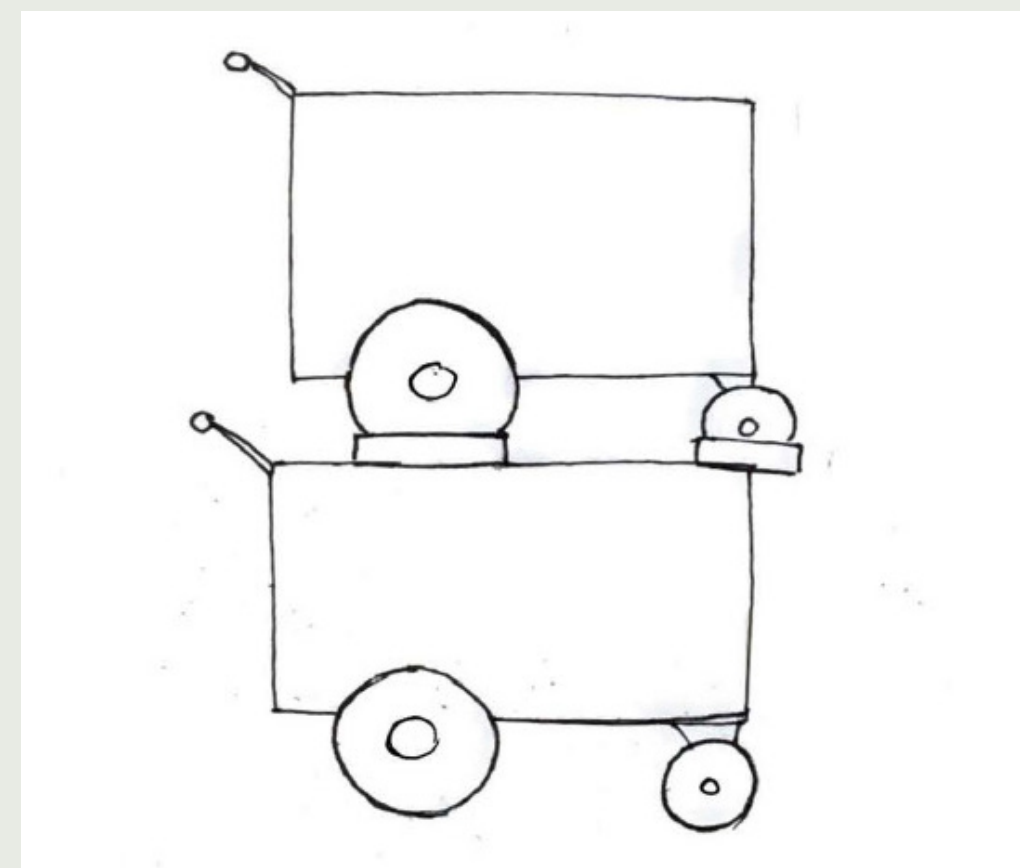
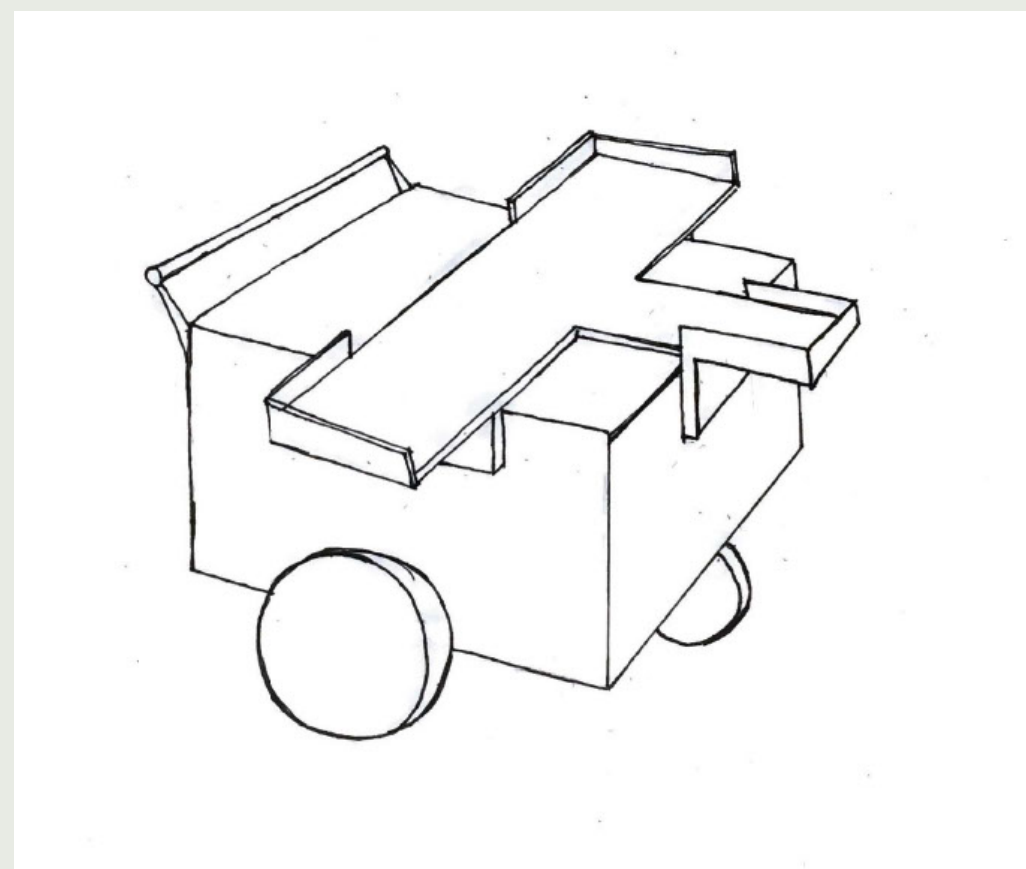


Cart Storage

Stabilizing Insert



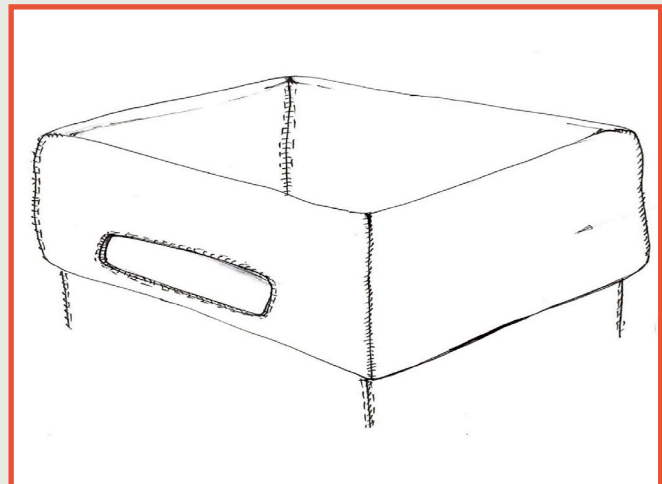
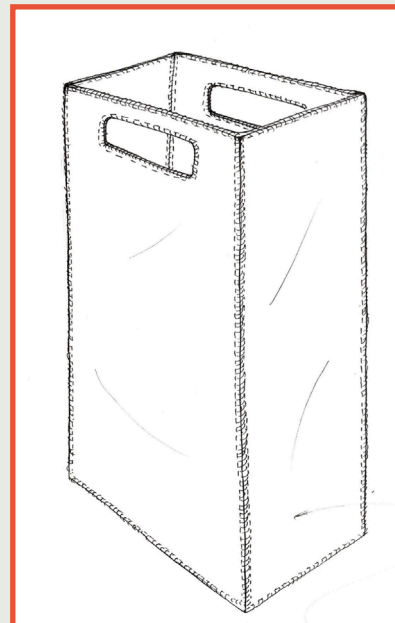
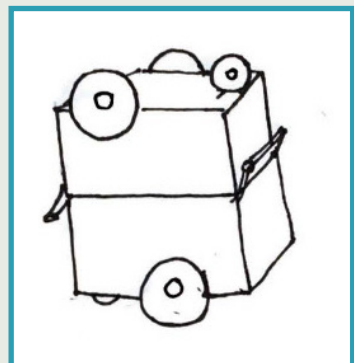
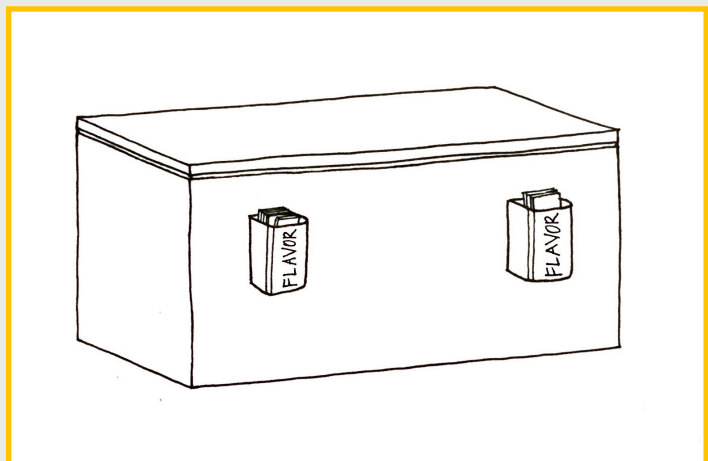
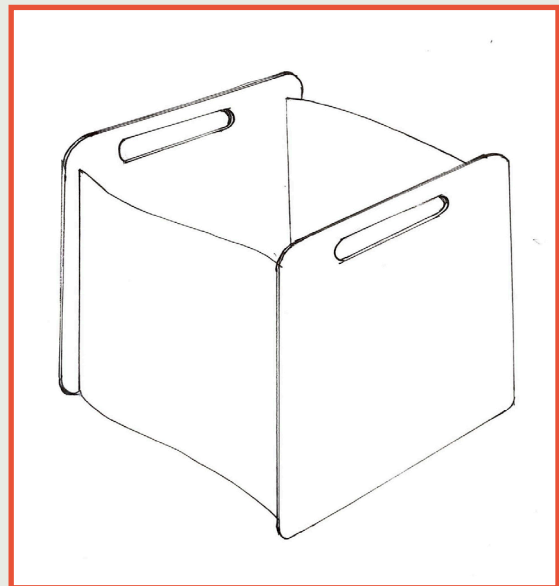
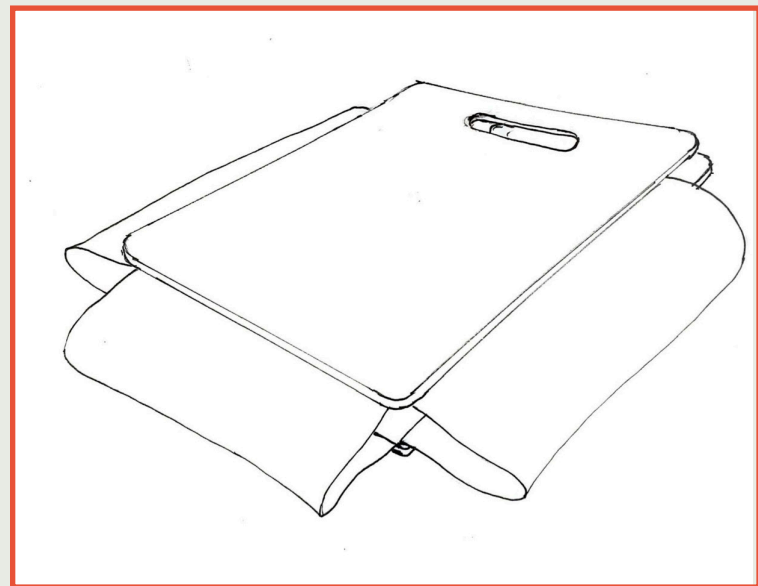
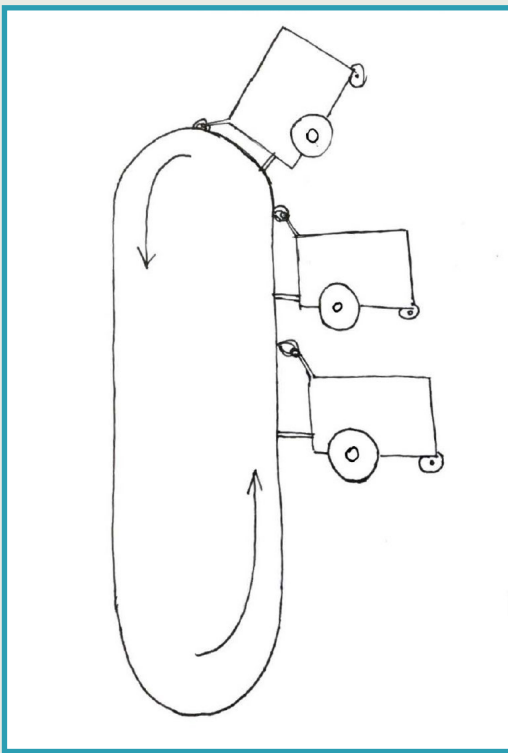
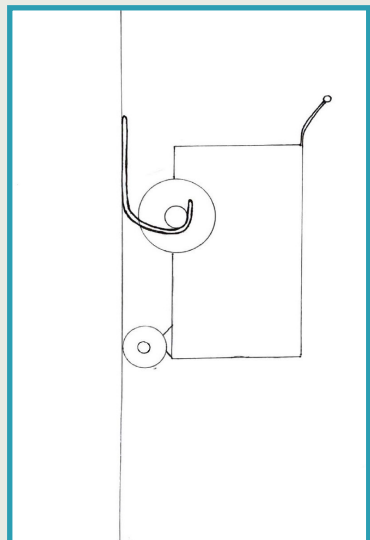
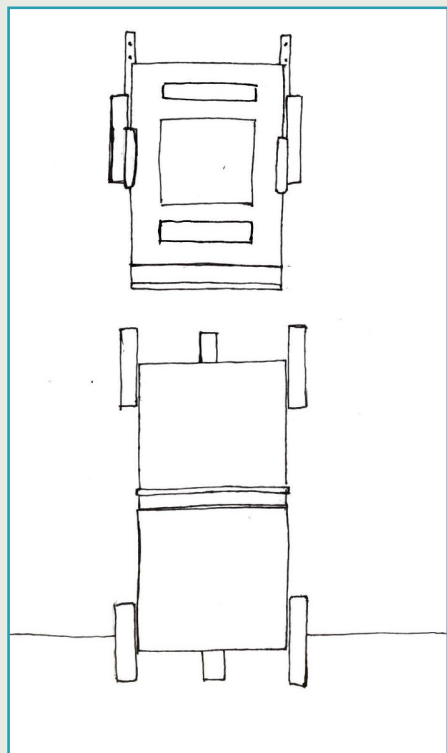
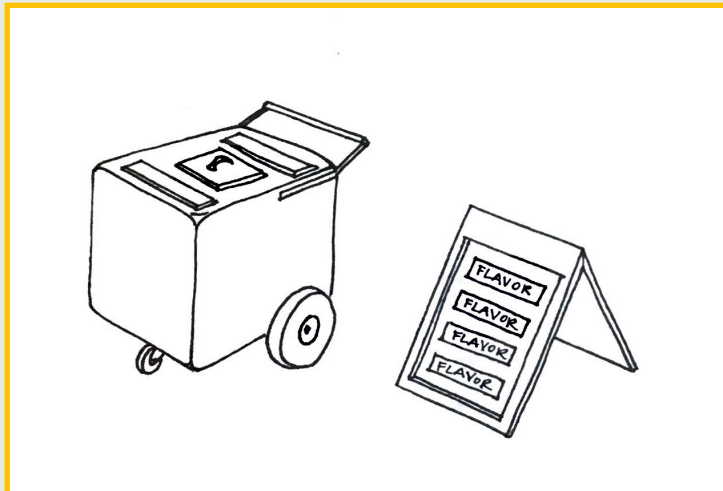
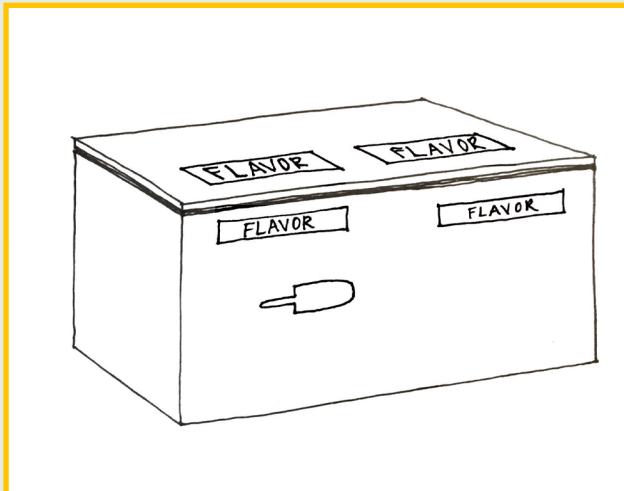
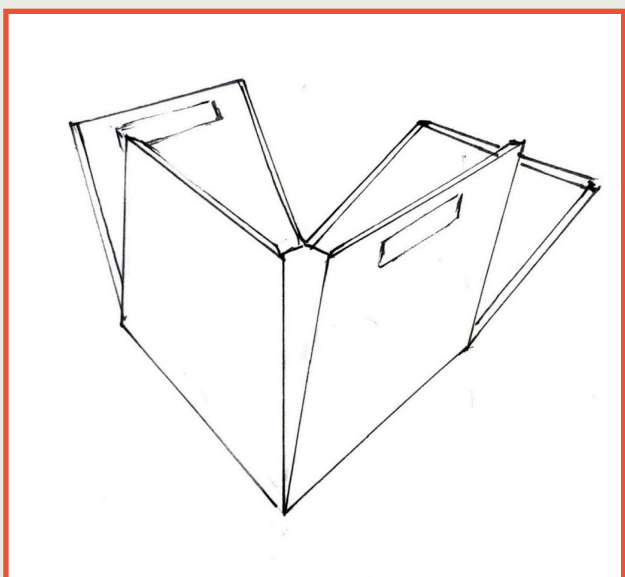
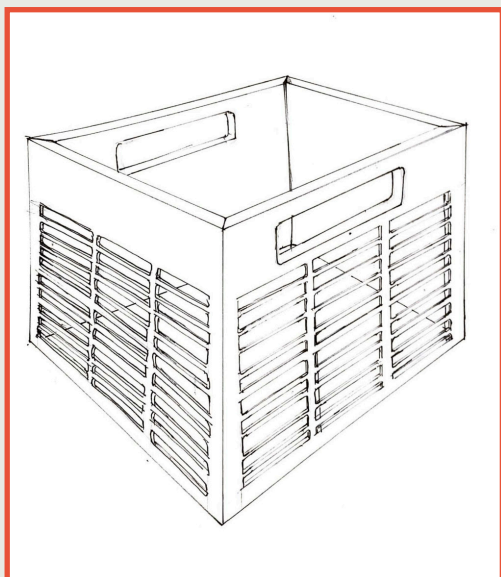
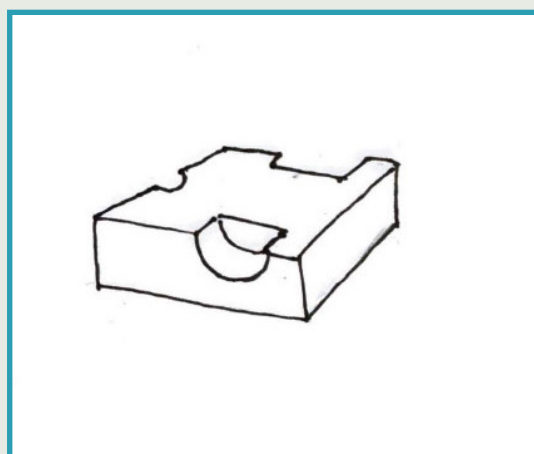
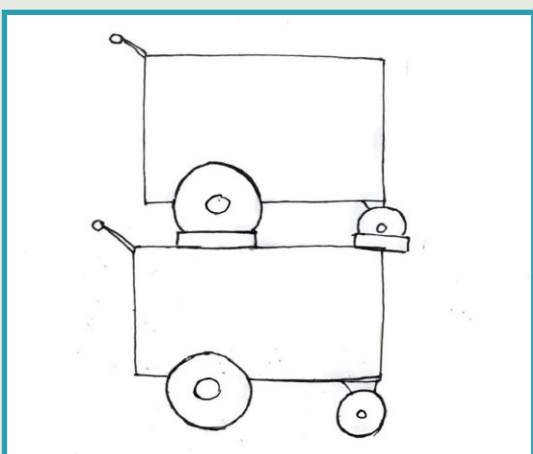
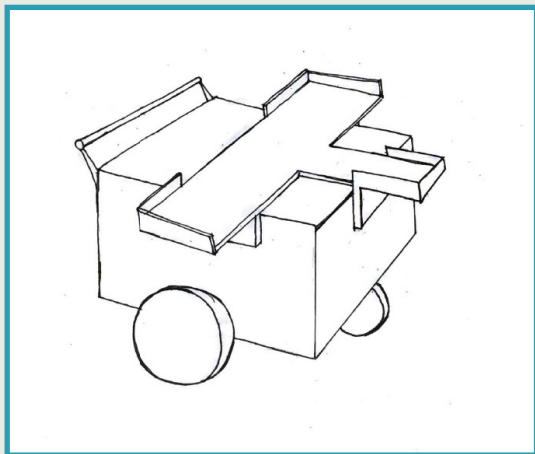
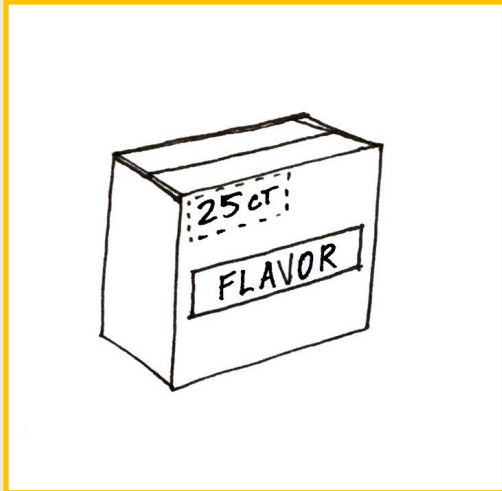
Current Method



CONCEPT DEVELOPMENT



Narrowing Down



 Labeling System

Cart Storage

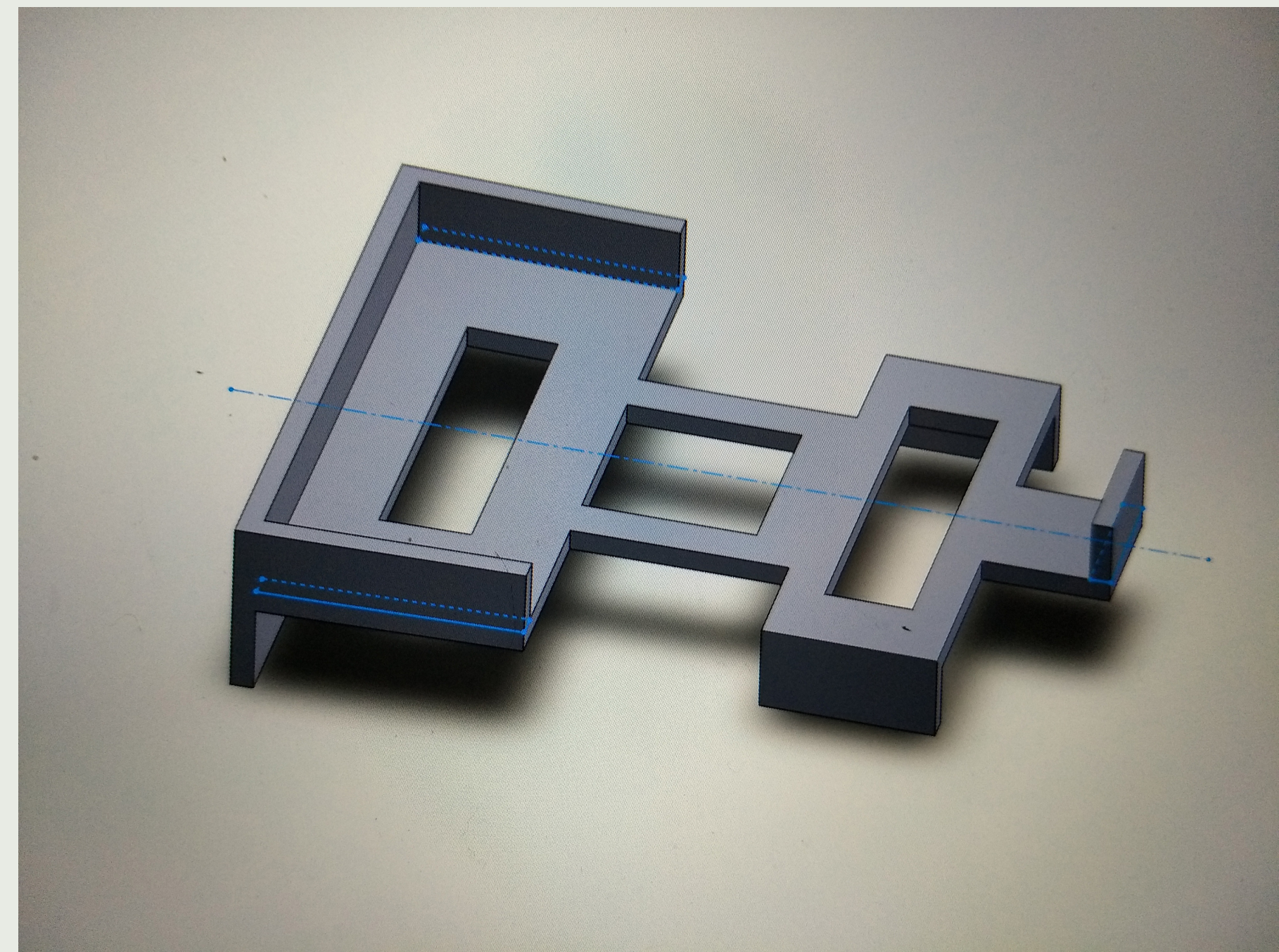
Reusable Boxes



Initial prototypes



 Labeling System



Cart Storage - Insert



Reusable Boxes

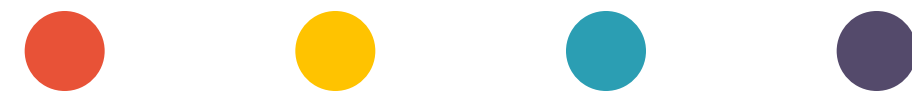


Feedback



Something about why we decided to do the magnets, based on Kevin's feedback

CONCEPT REFINEMENT





Defining Goals



Problem Statement:

There is no consistent or easily legible organization system for pops. Labeling is currently being addressed by many disparate strategies, including printed labels on bins/boxes, handwritten signs, computer paper printouts, etc.

Design Goal:

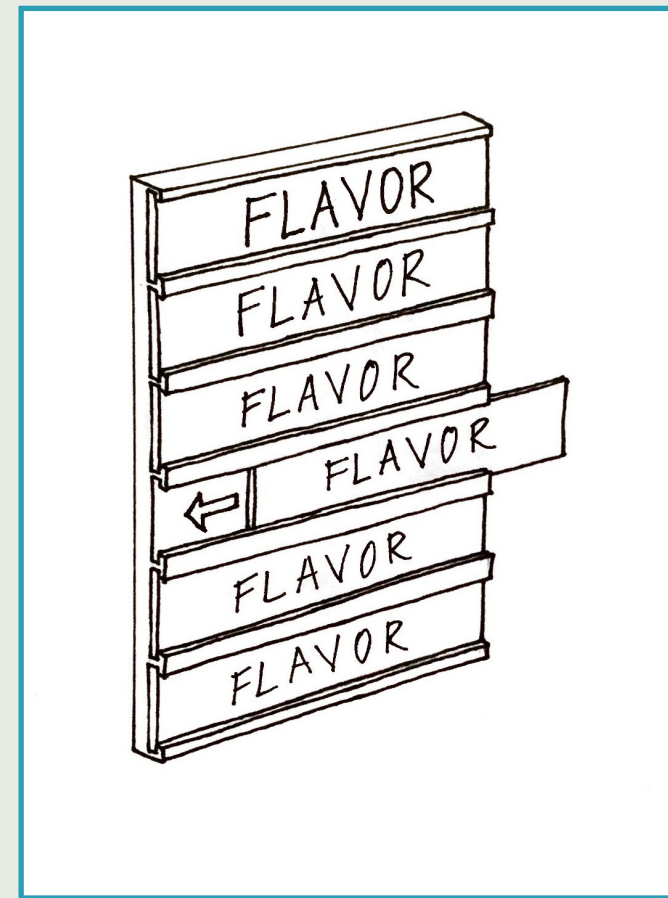
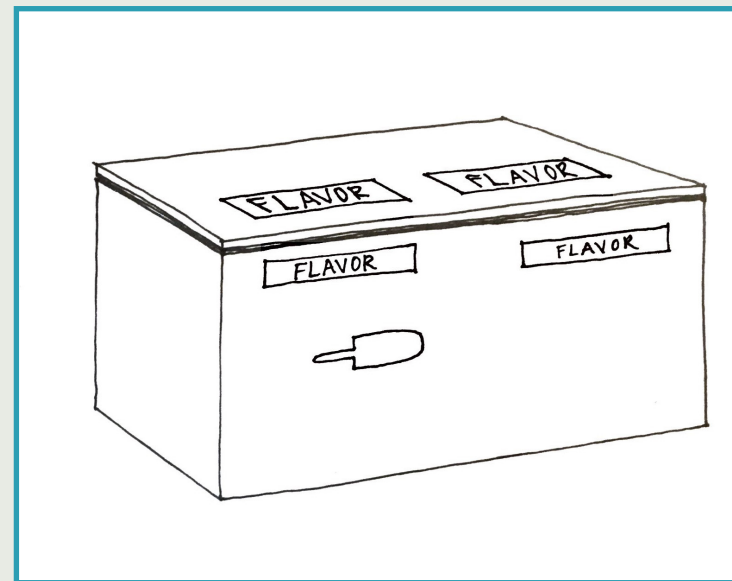
To create a consistent labeling system that includes multiple levels of communication: color, illustration, and text, and therefore increase efficiency at each stage, from production through sales.

Labeling System

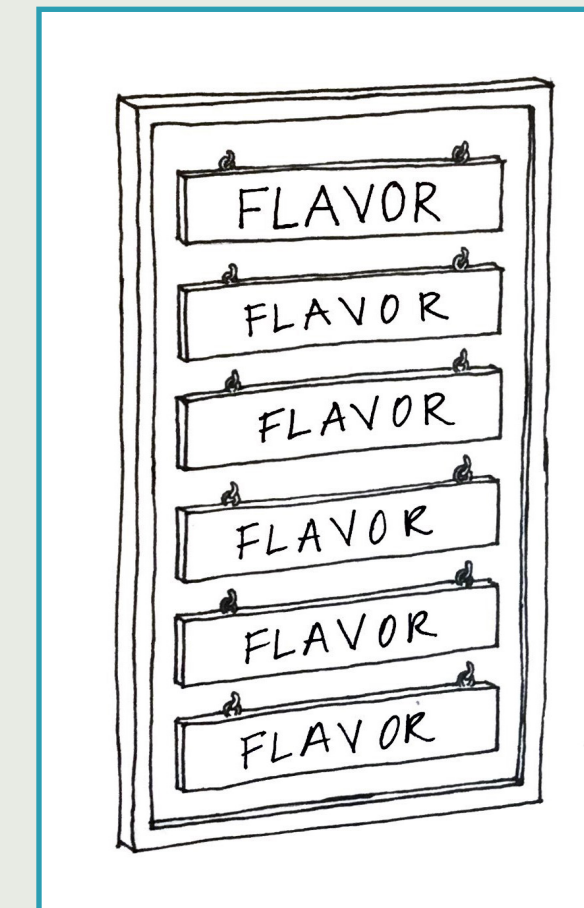
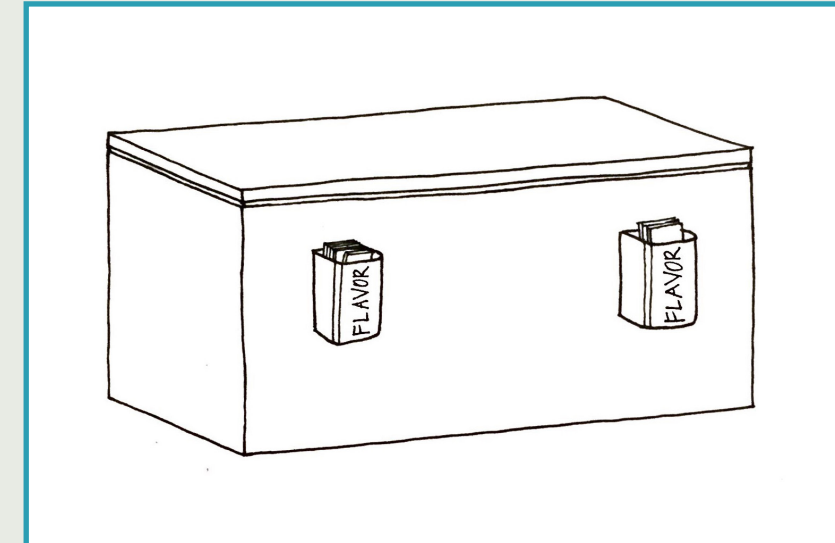
Types of Labels:



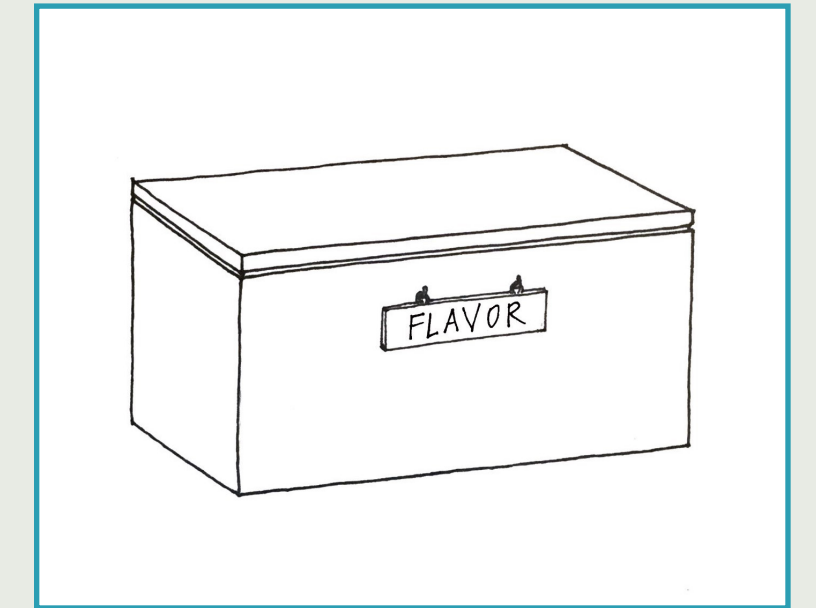
Magnets 



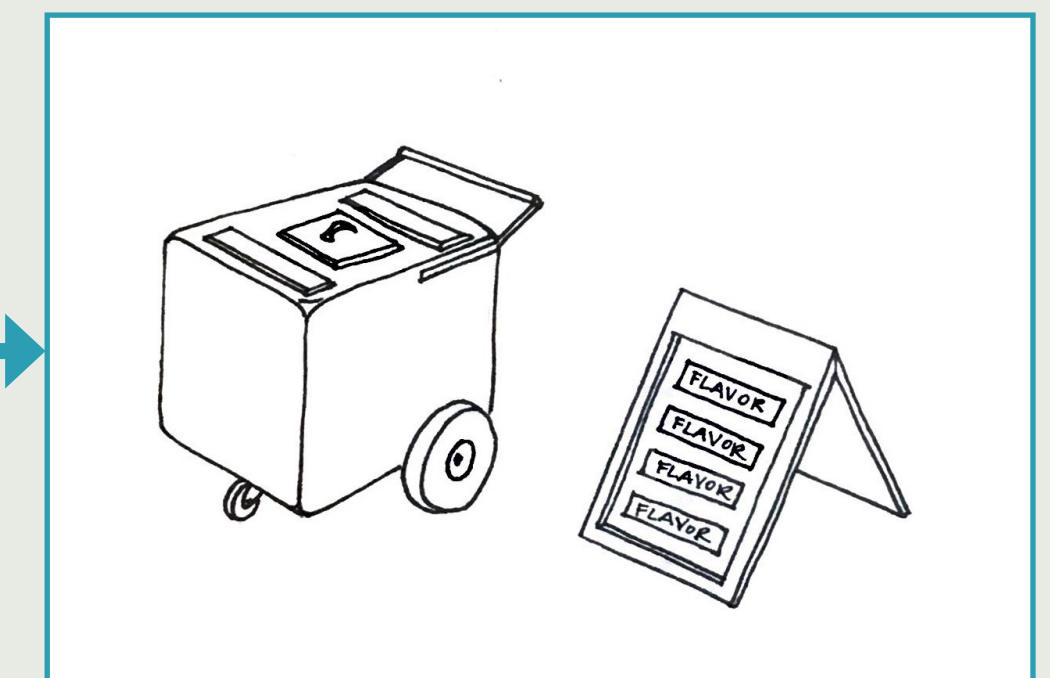
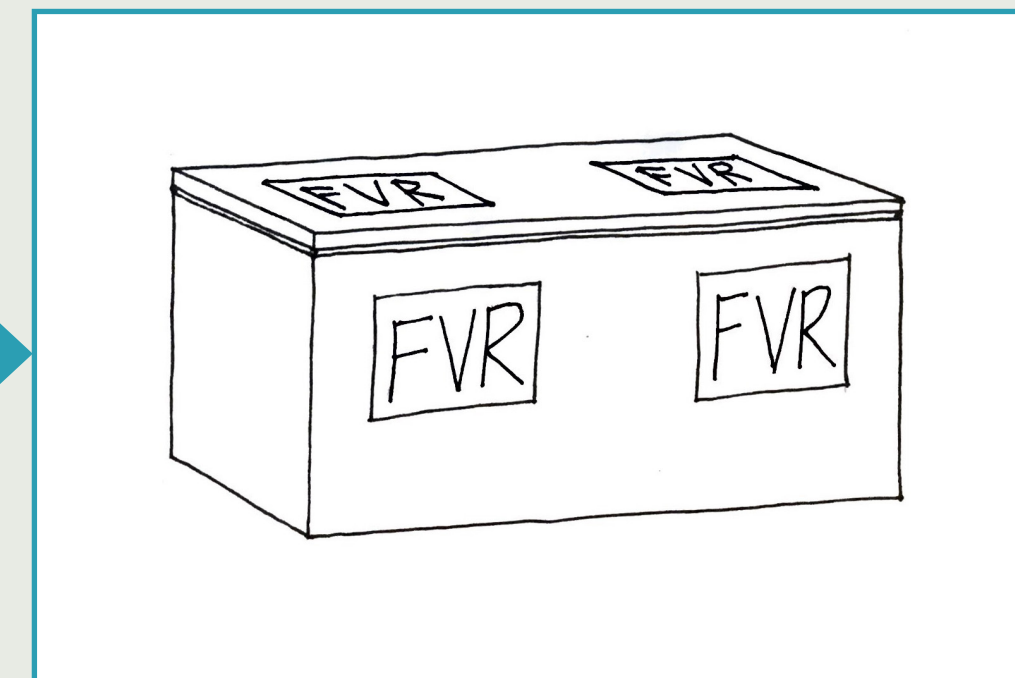
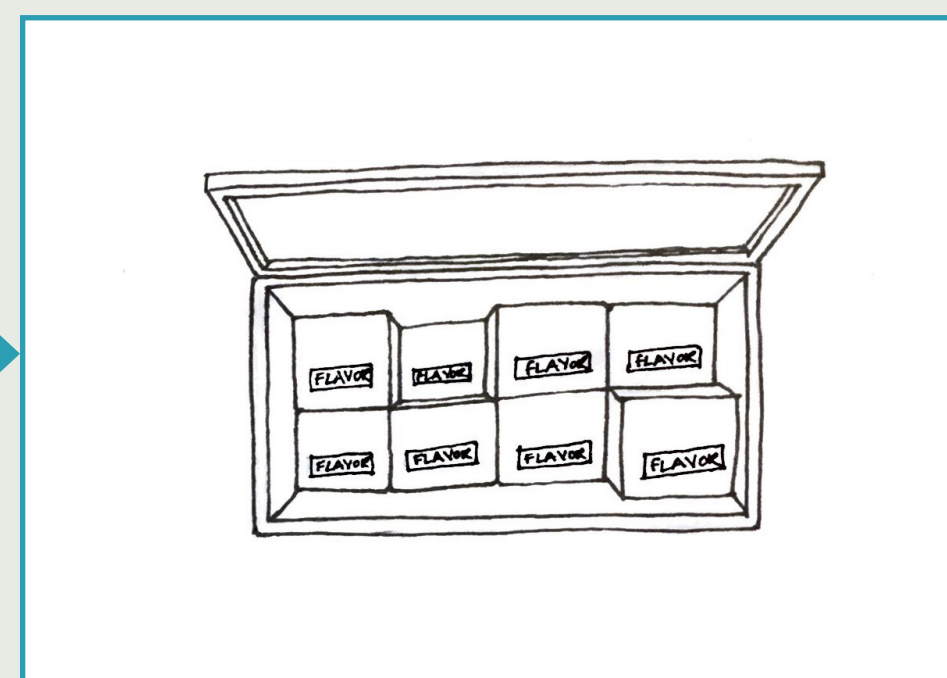
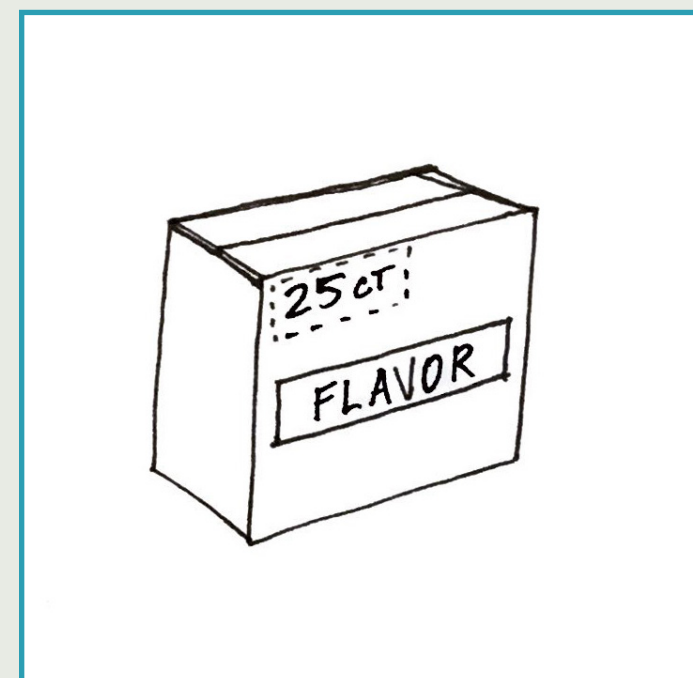
Slats



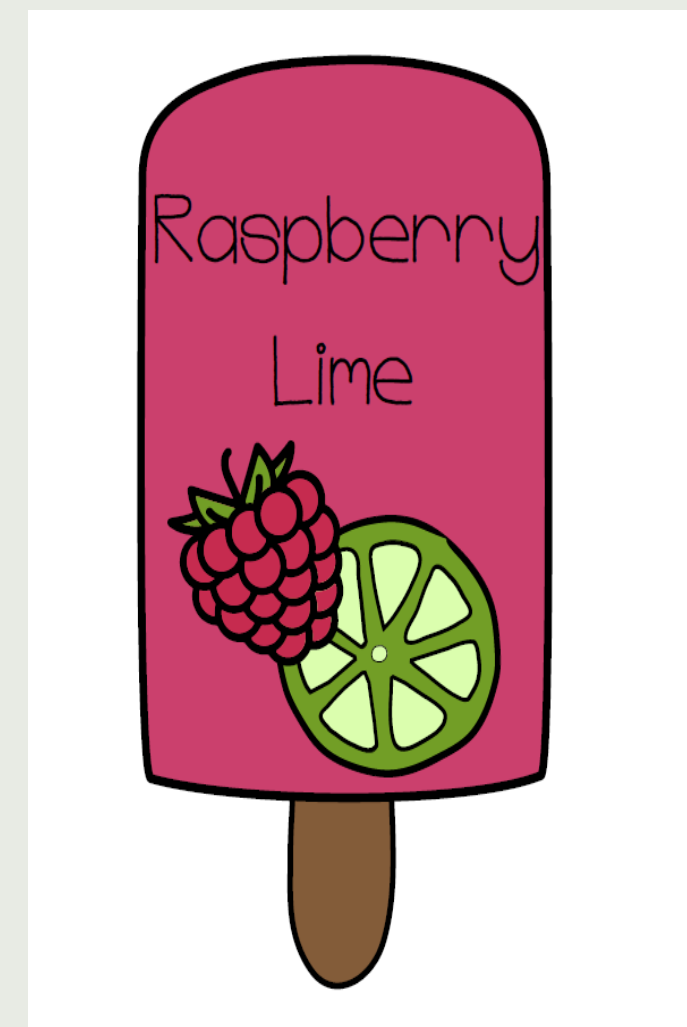
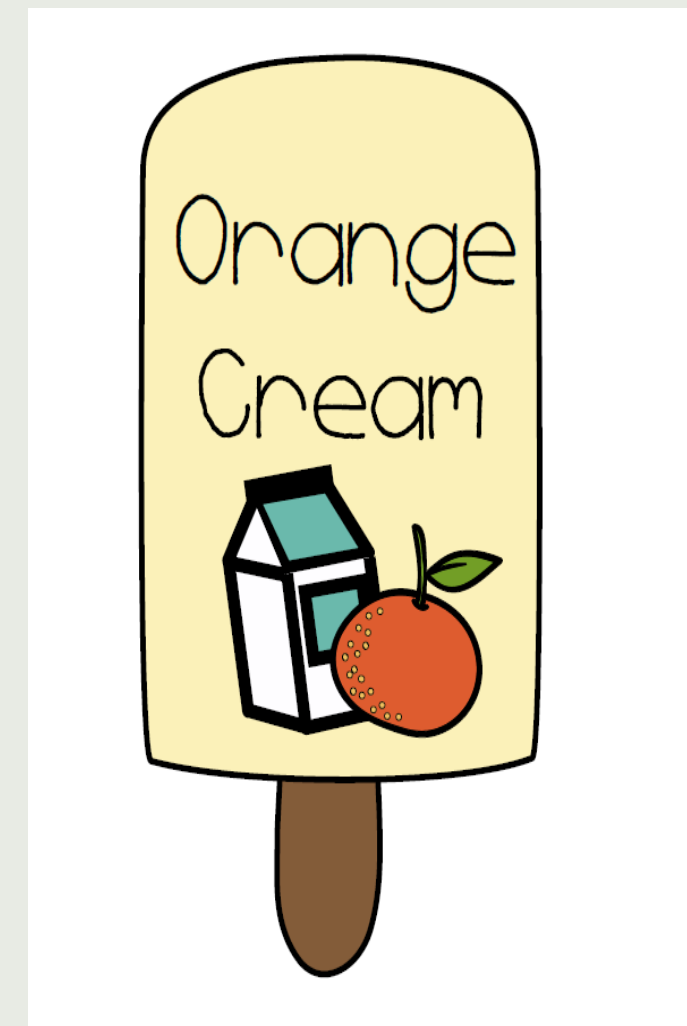
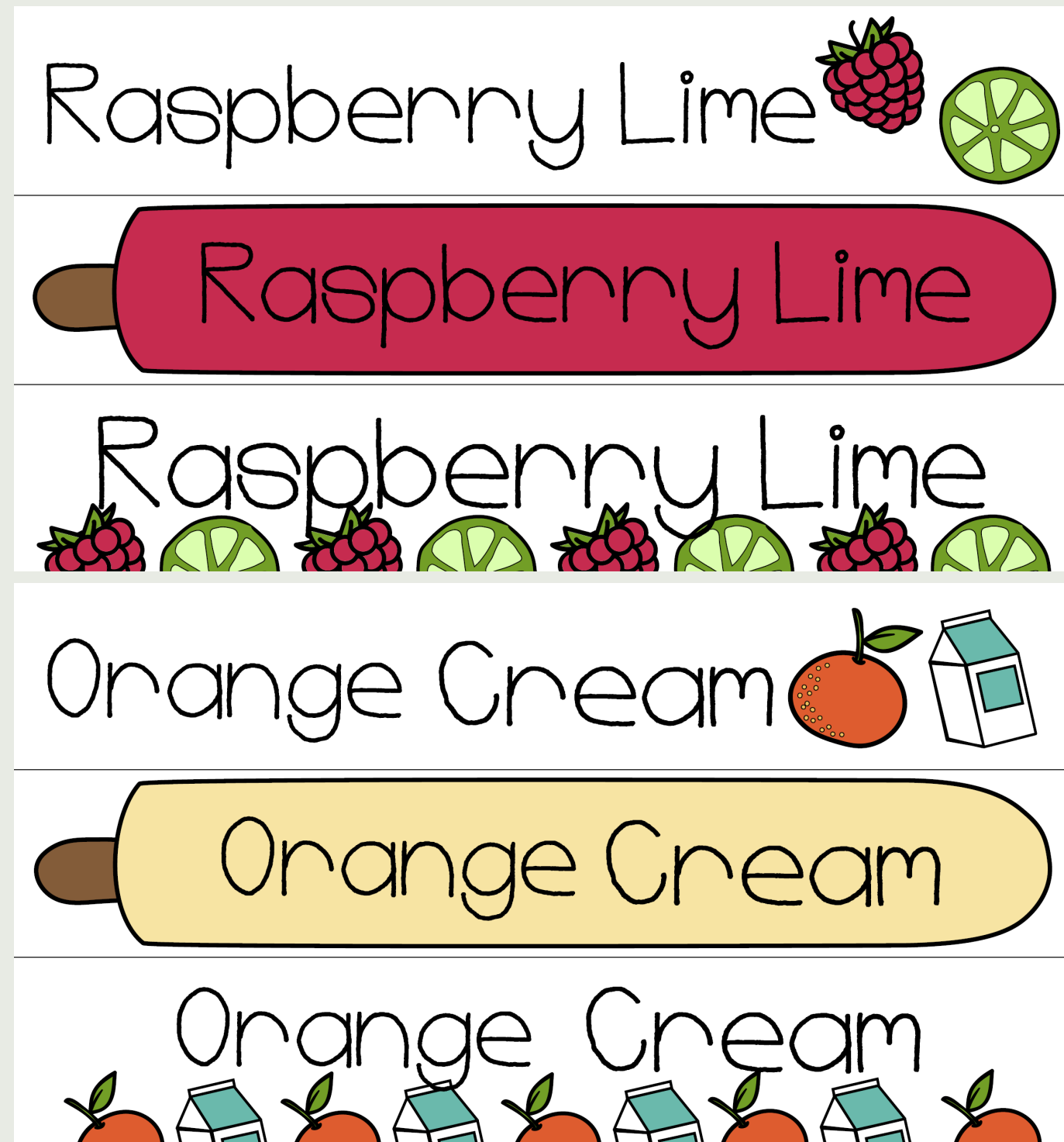
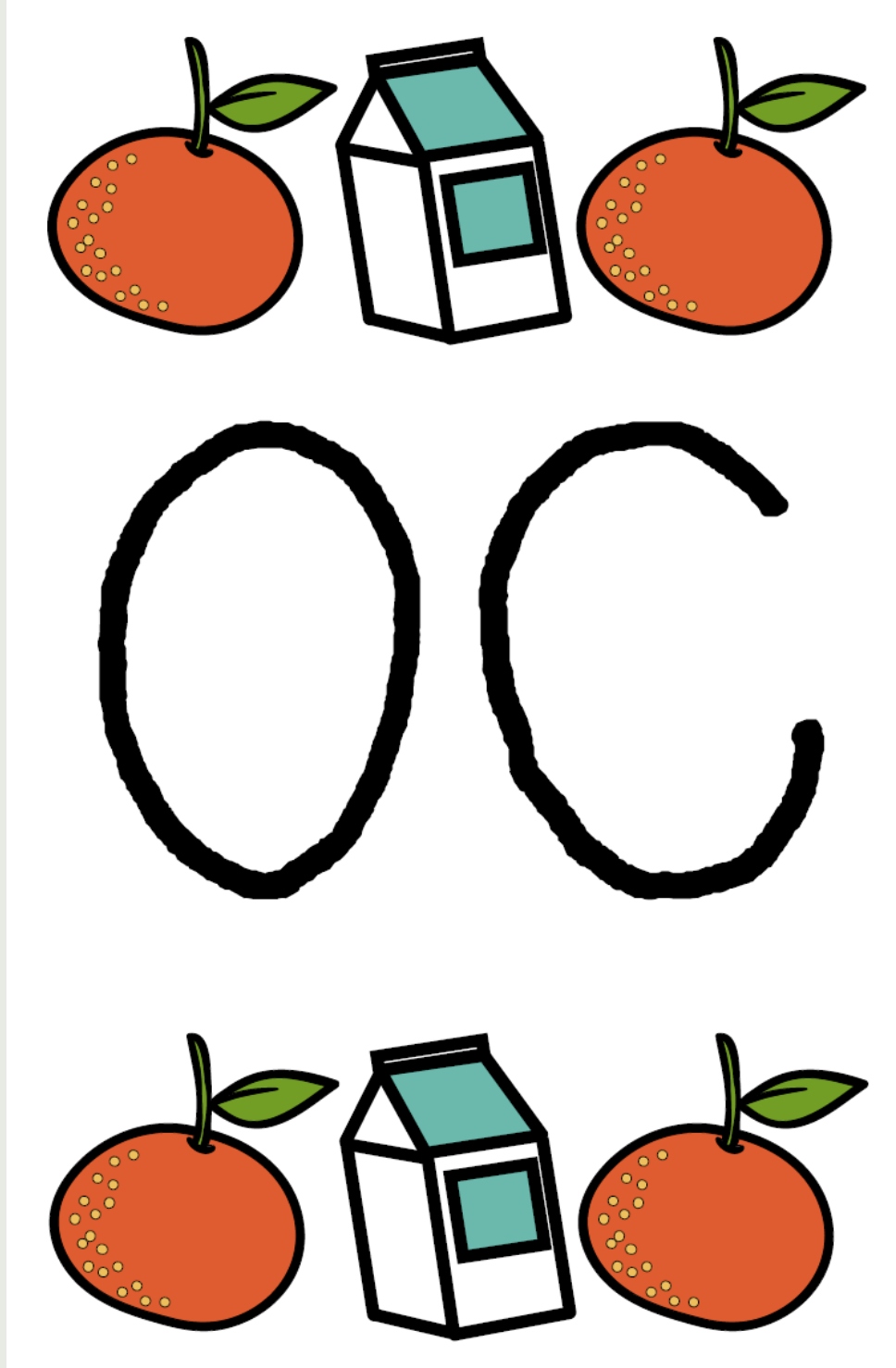
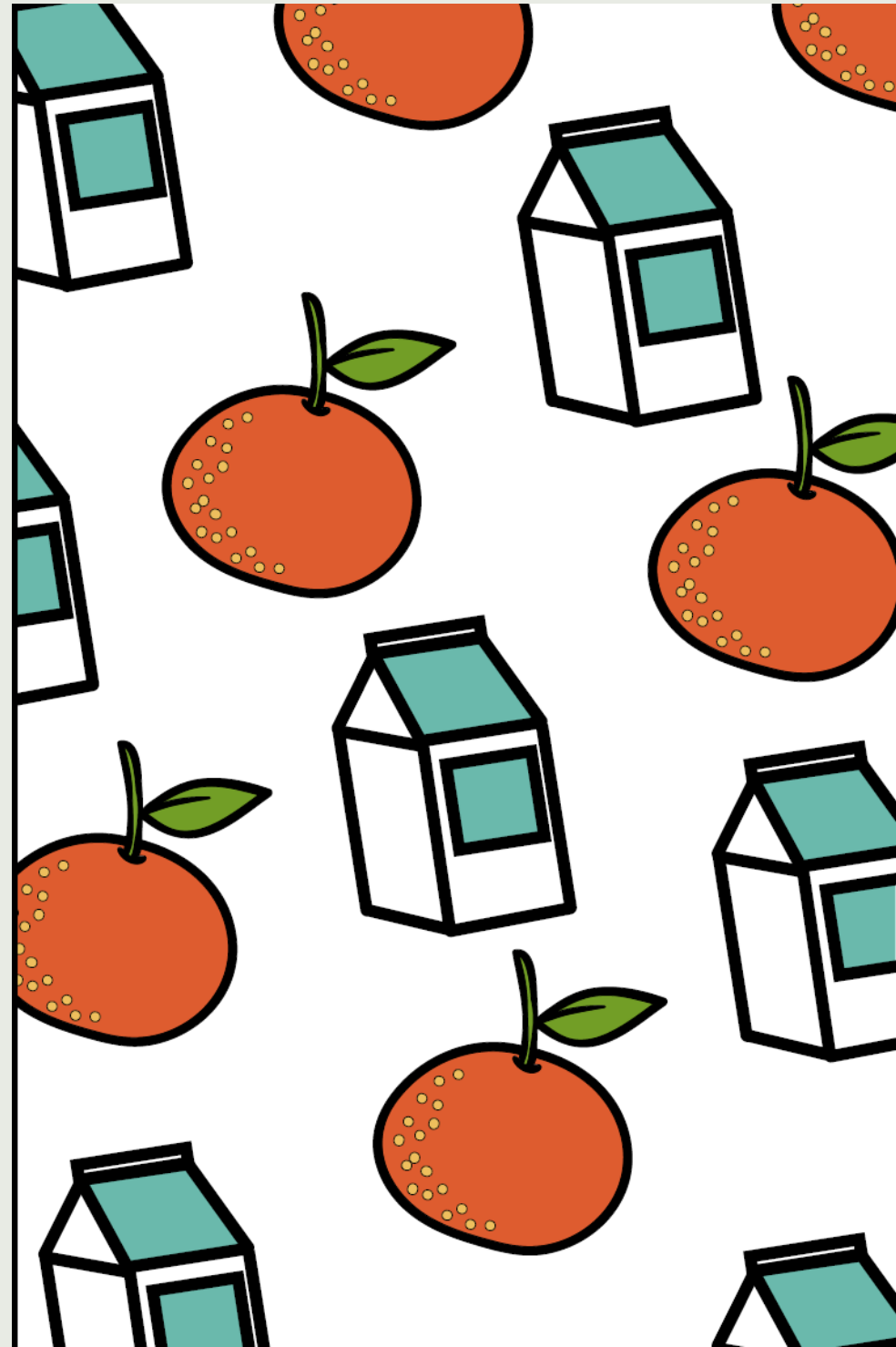
Hooks



Pop storage journey: labels from production to cart

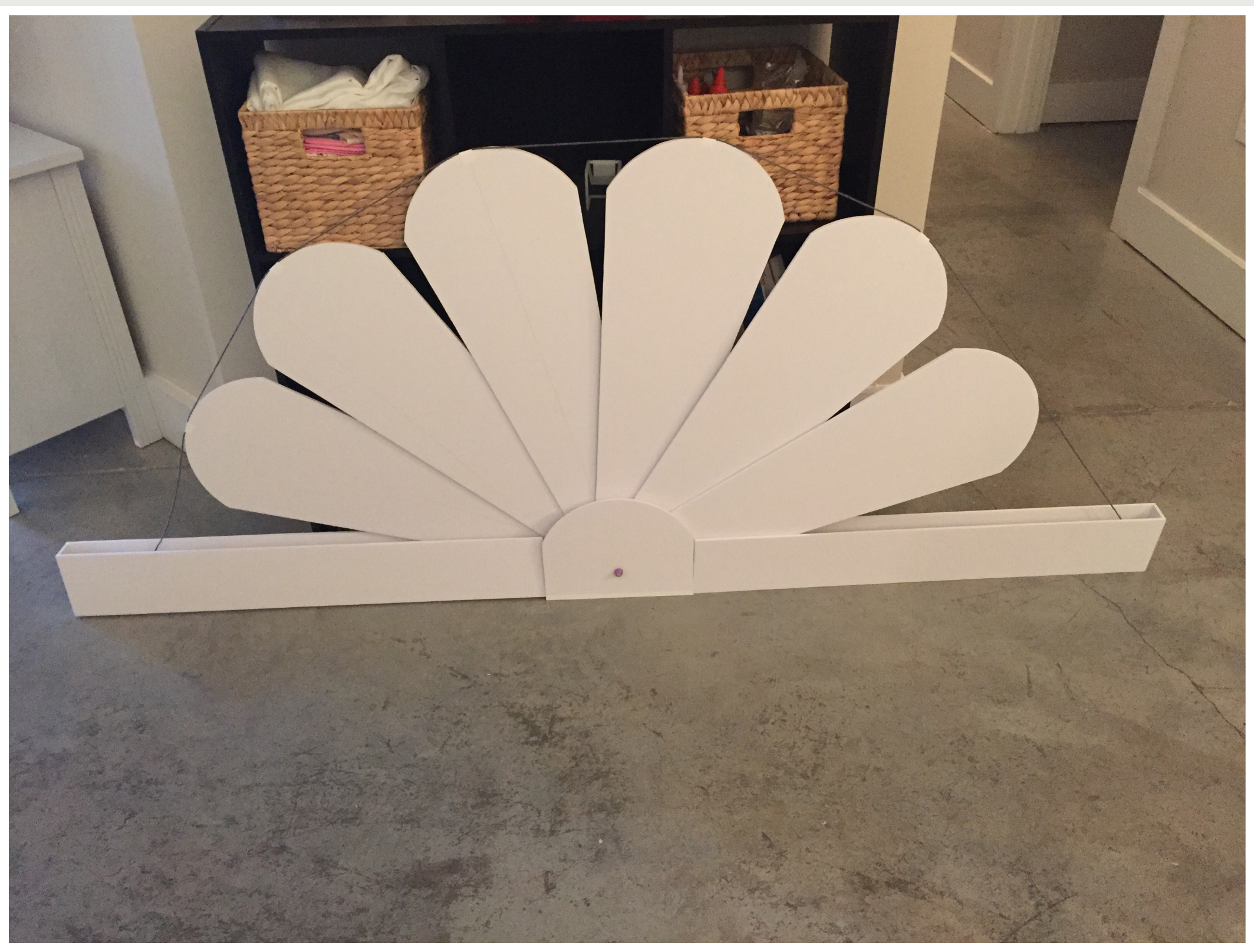


Magnet Graphics Prototype

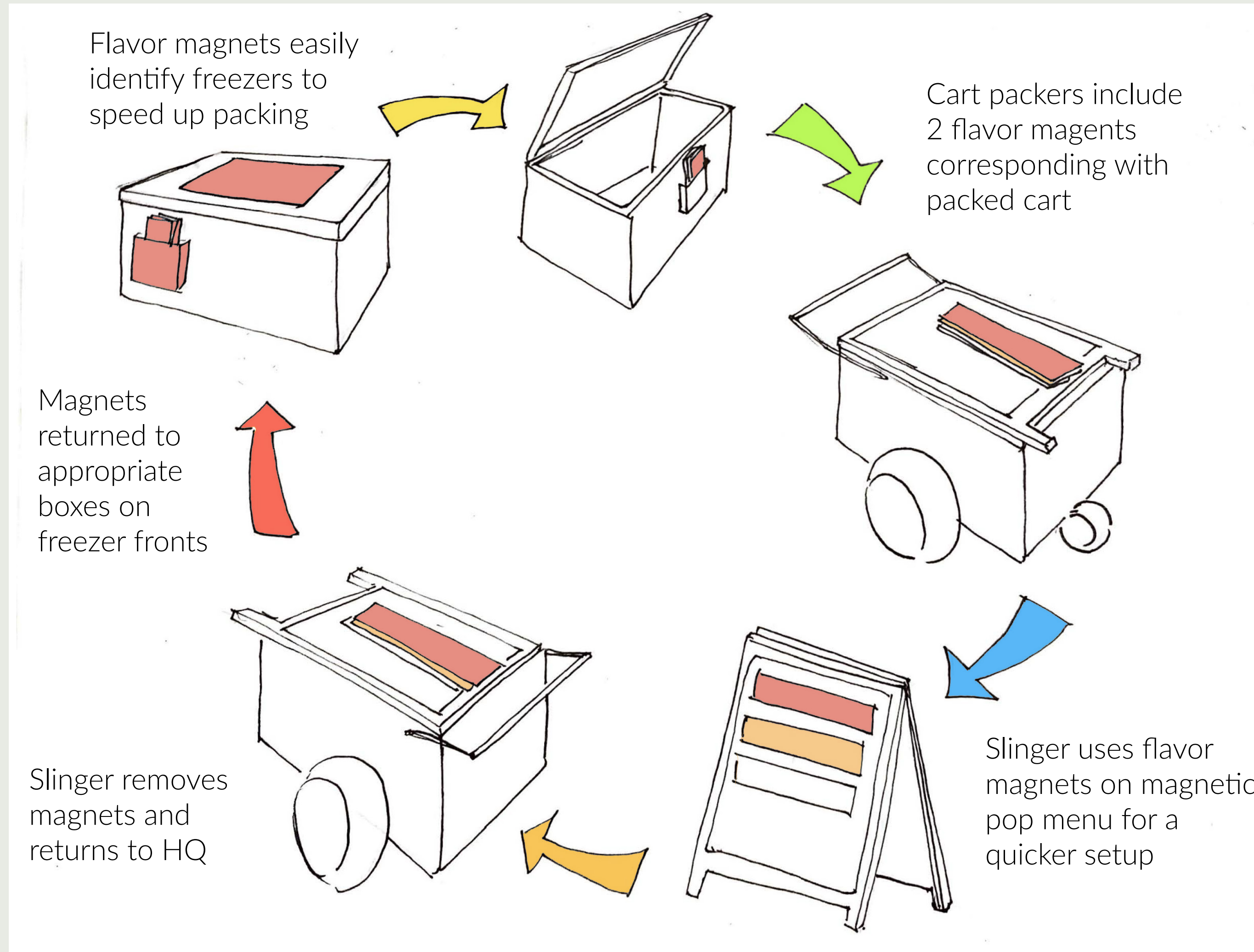




Menu Board Prototypes



Proposed Journey

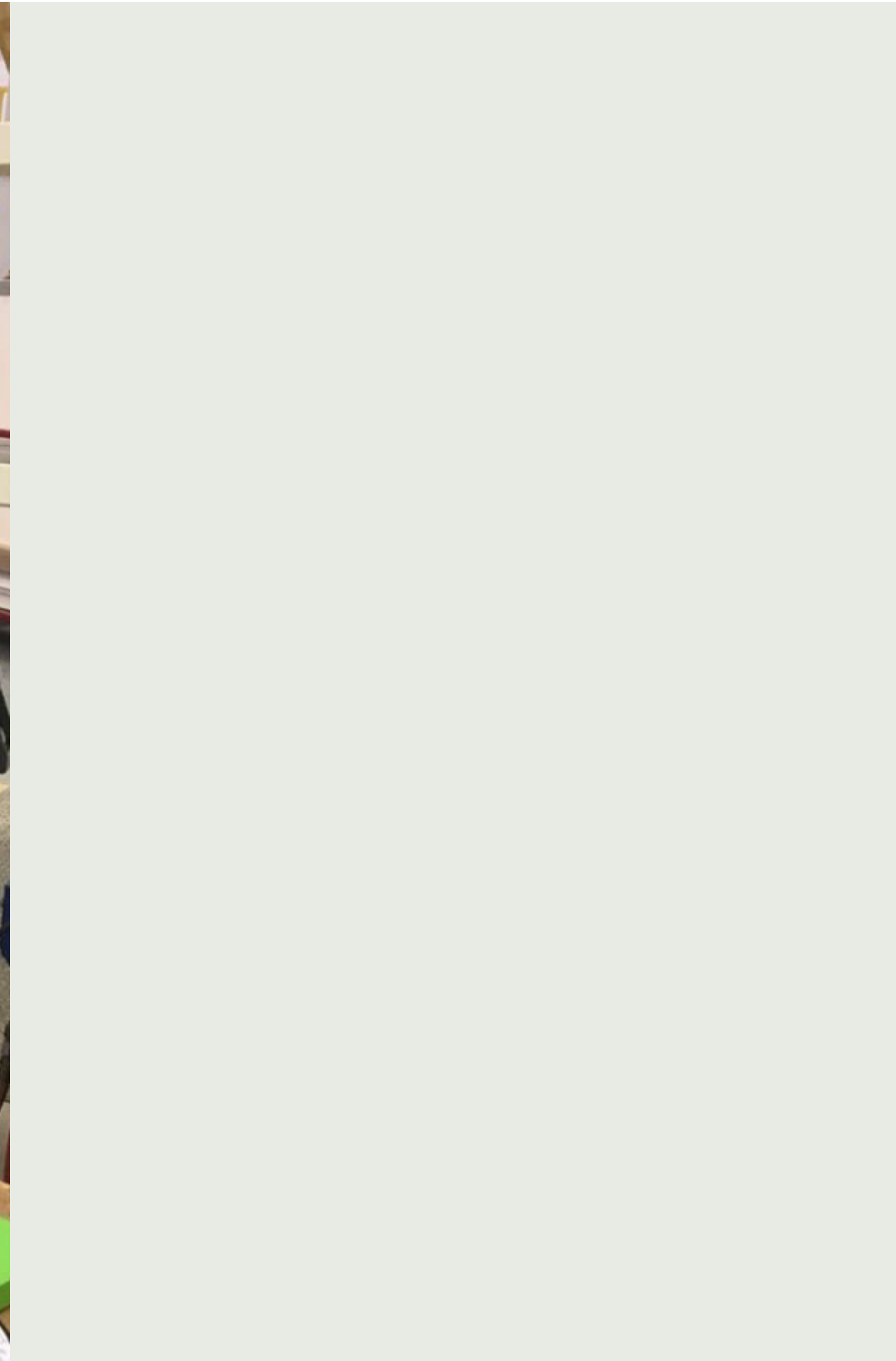
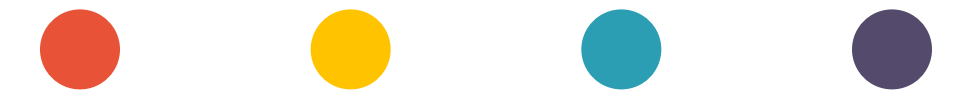


FINAL DESIGN



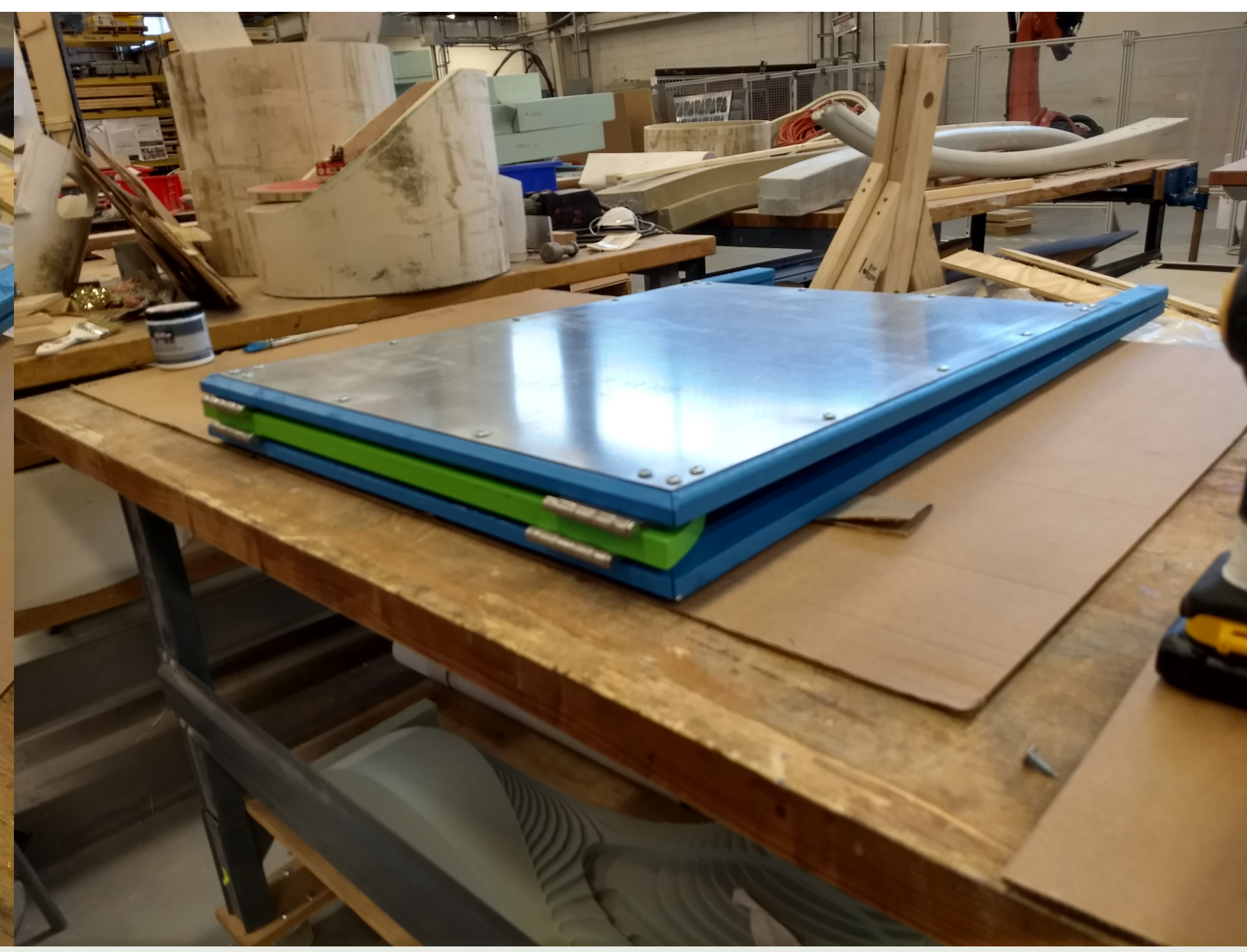
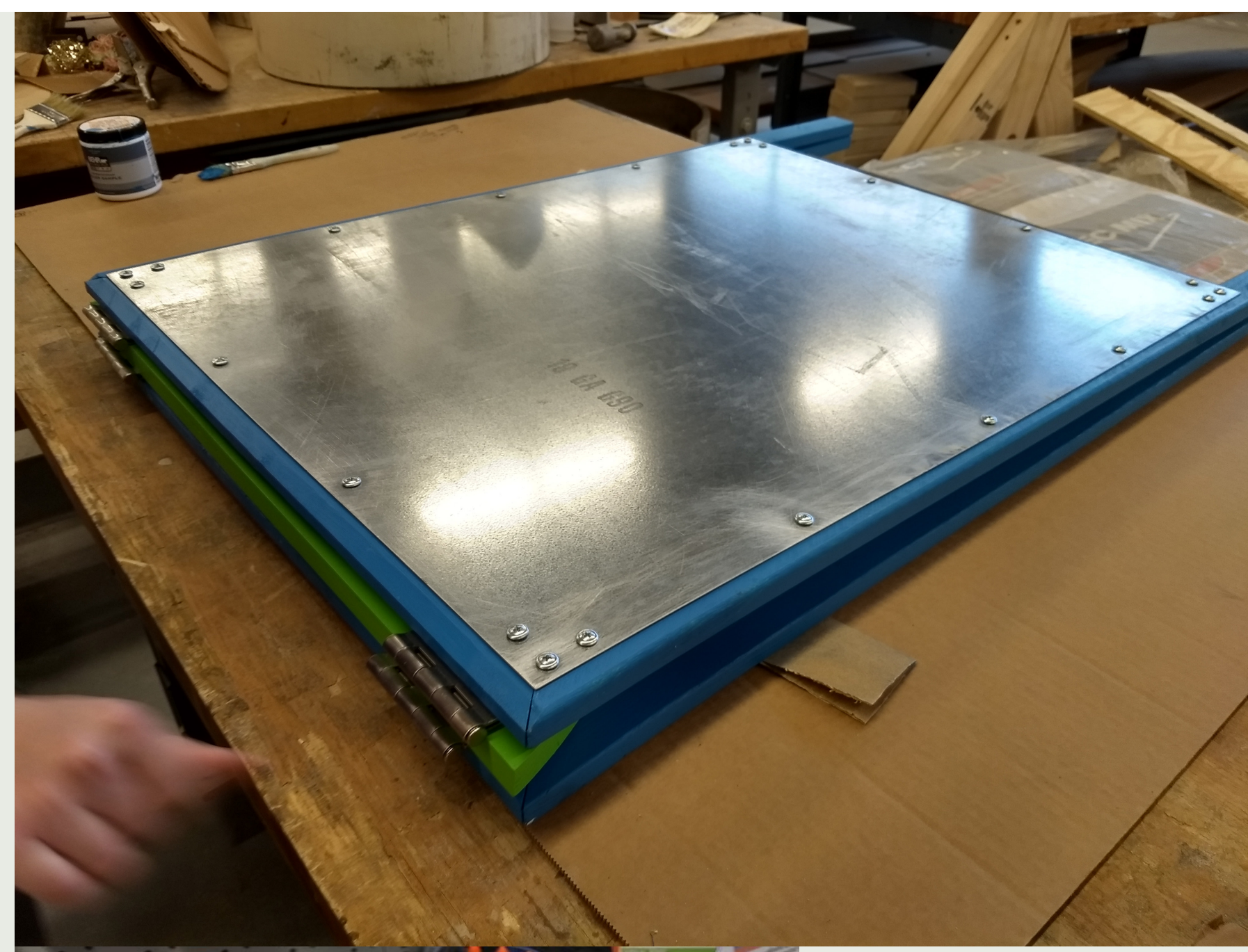


Process of Making the Board





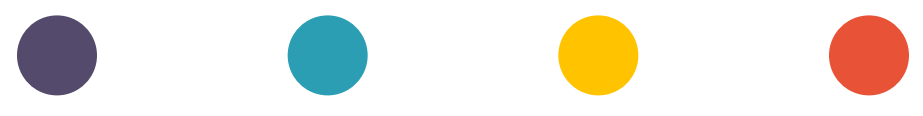
Process of Making the Board



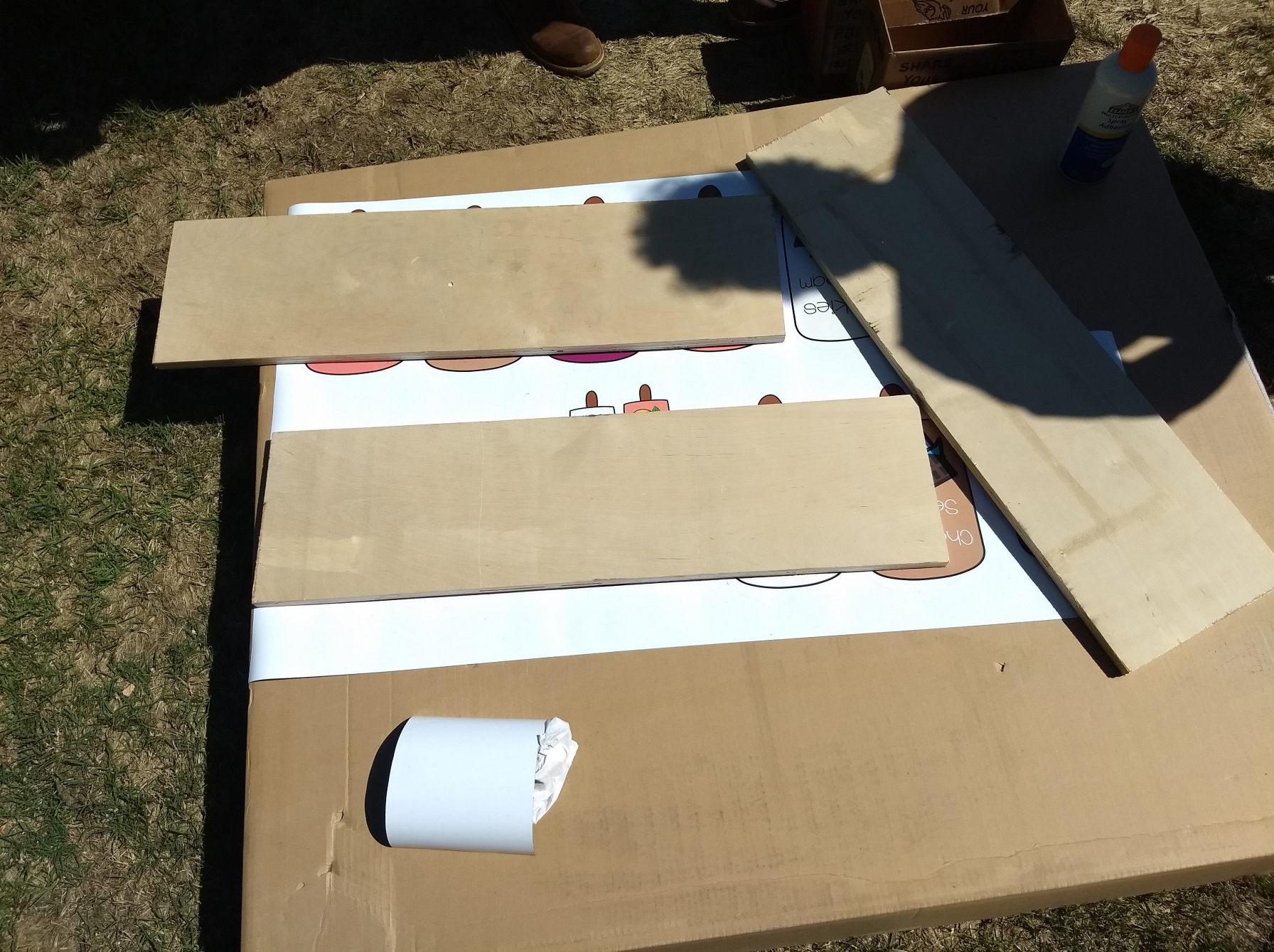
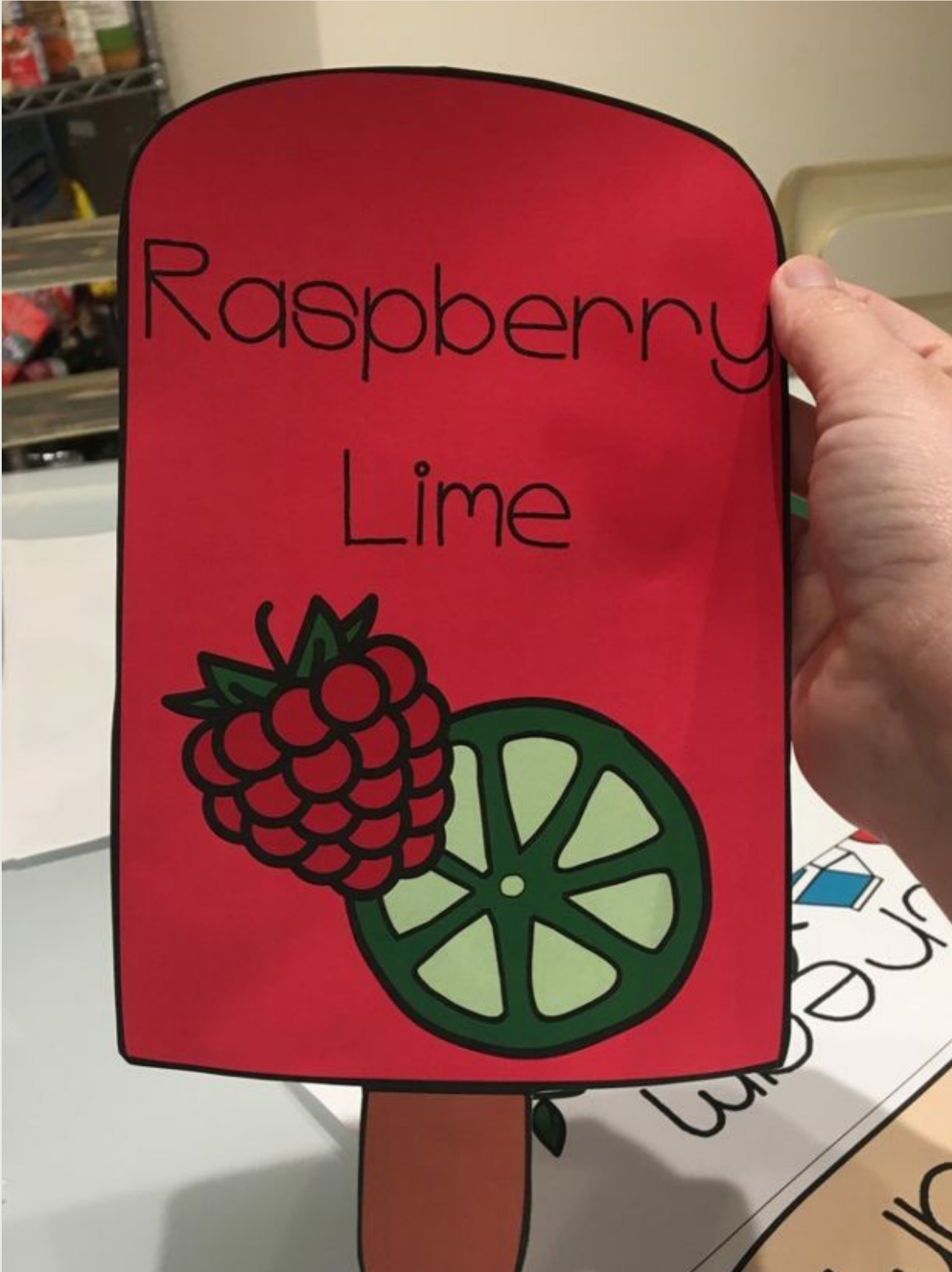


Process of Making the Board



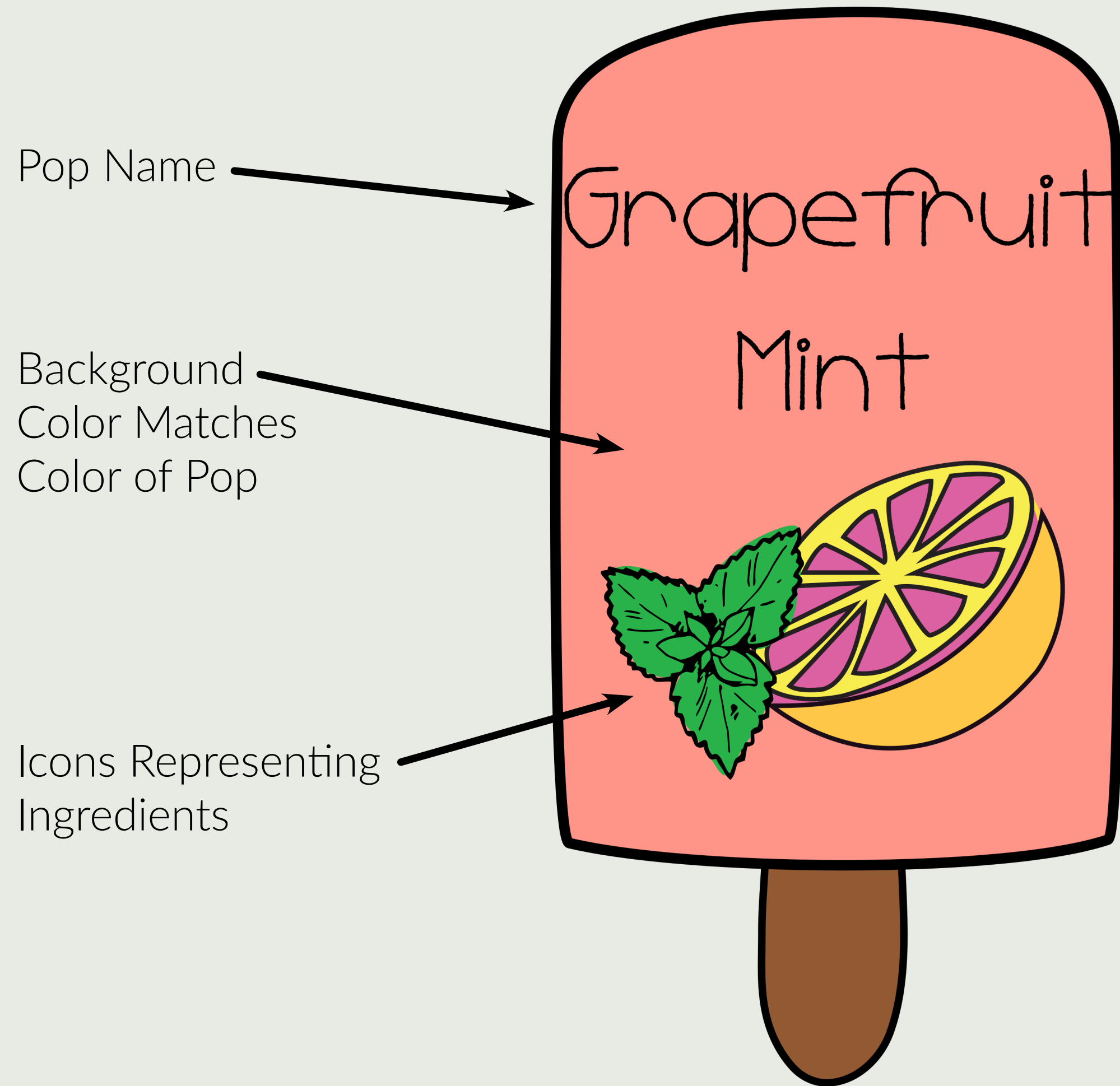


Process of Making the Magnets

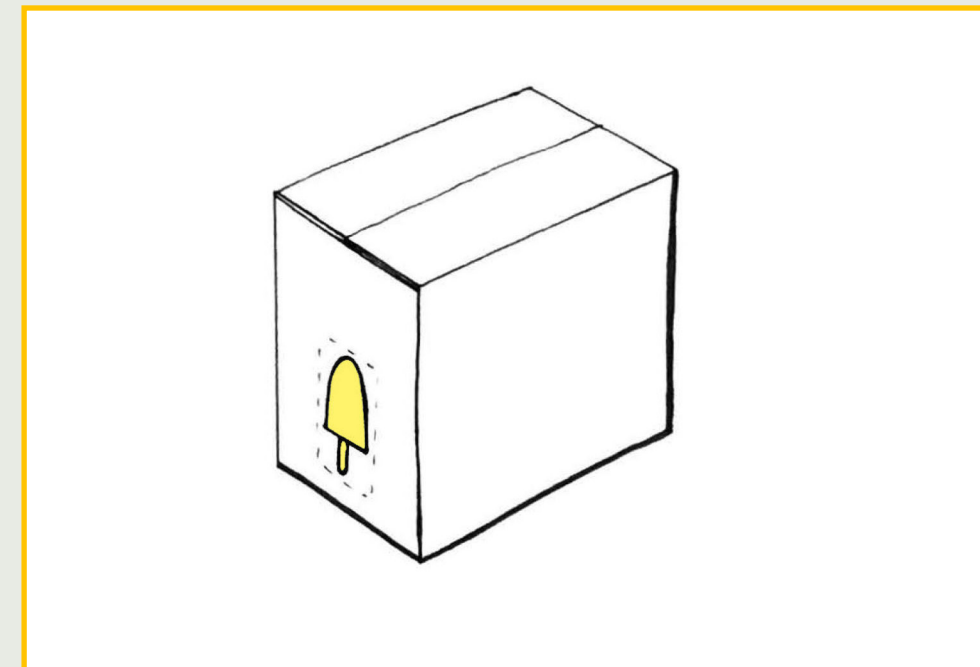


Magnet

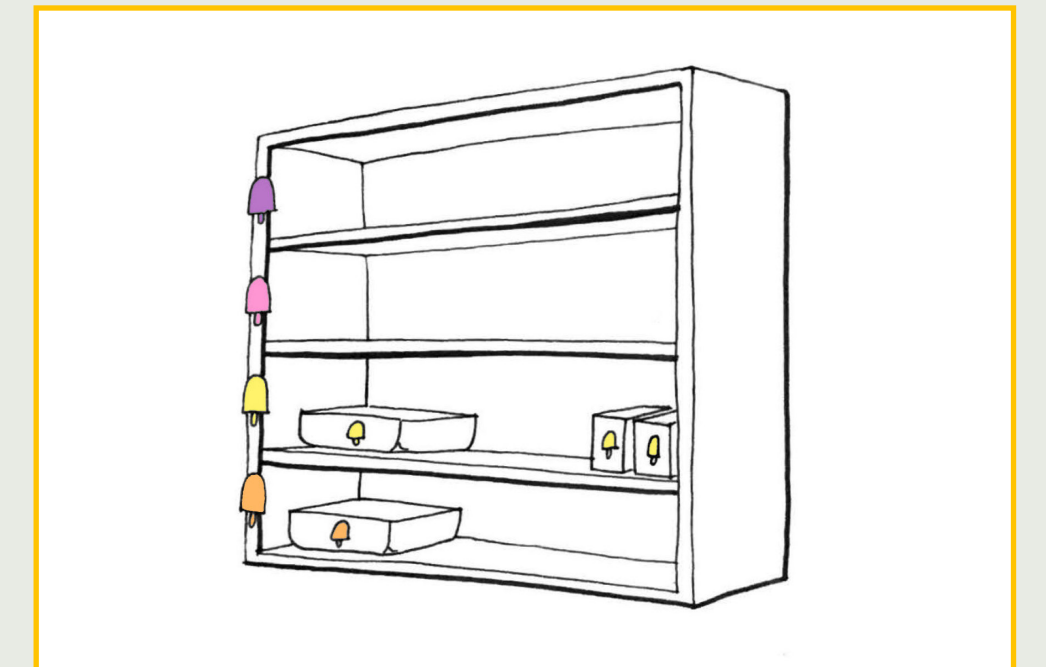
Pop Label



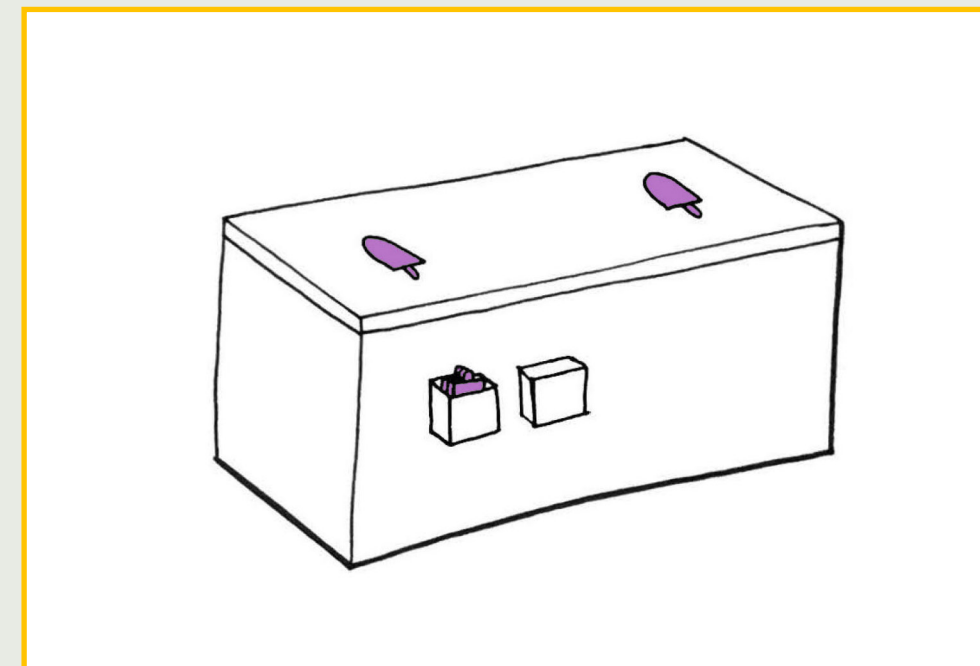
Label Uses - Stickers and Magnets



Stickers on cardboard boxes and bins



Small magnets on shelves in walk-in freezers



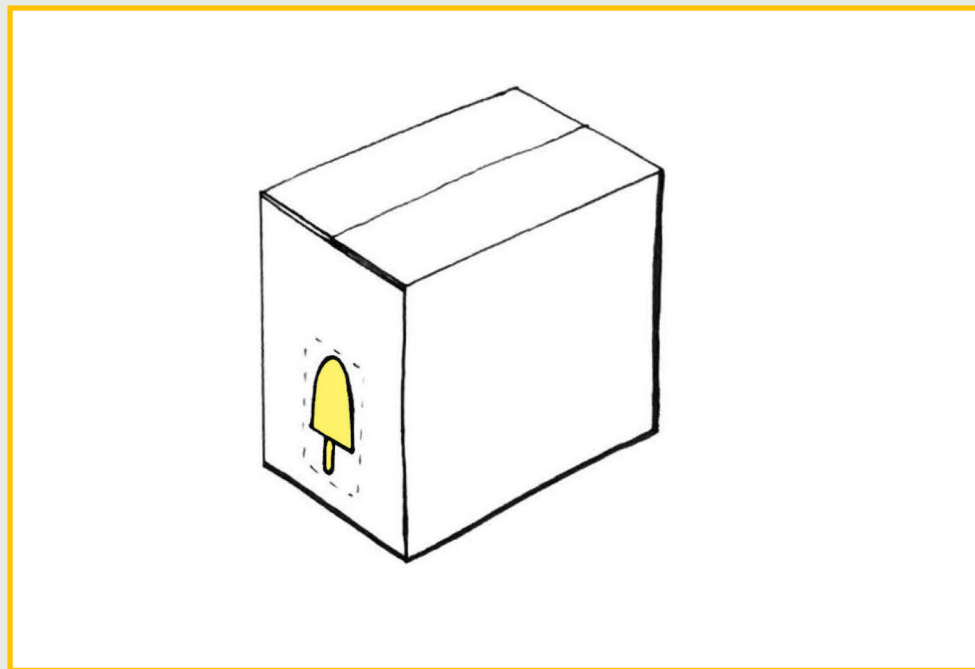
Magnets on chest freezers



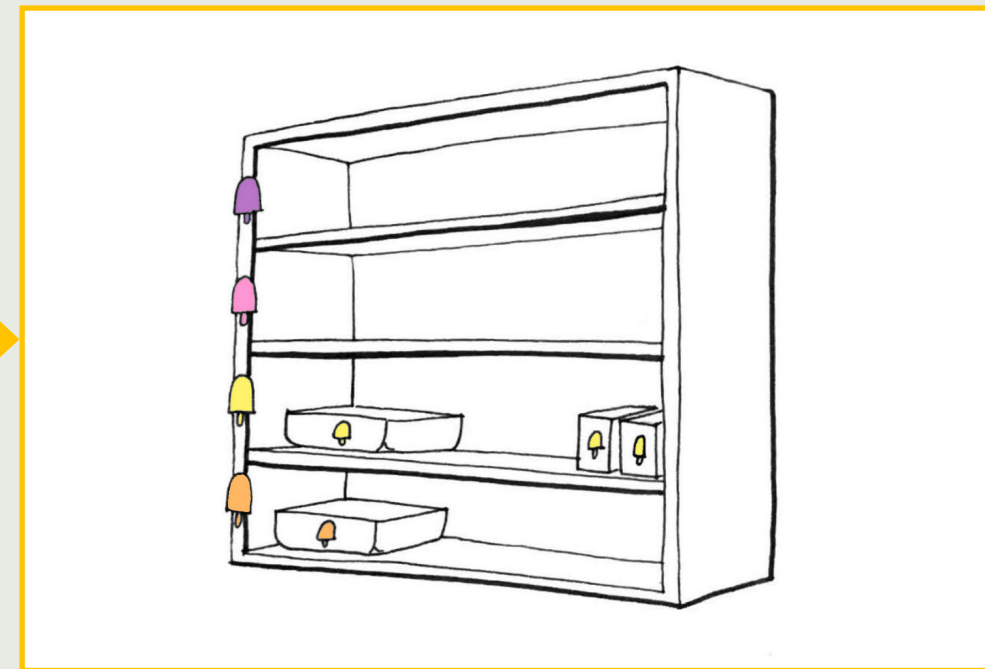
Magnets on pop menu and small magnets on cart lids

Intended Label Use at KoP

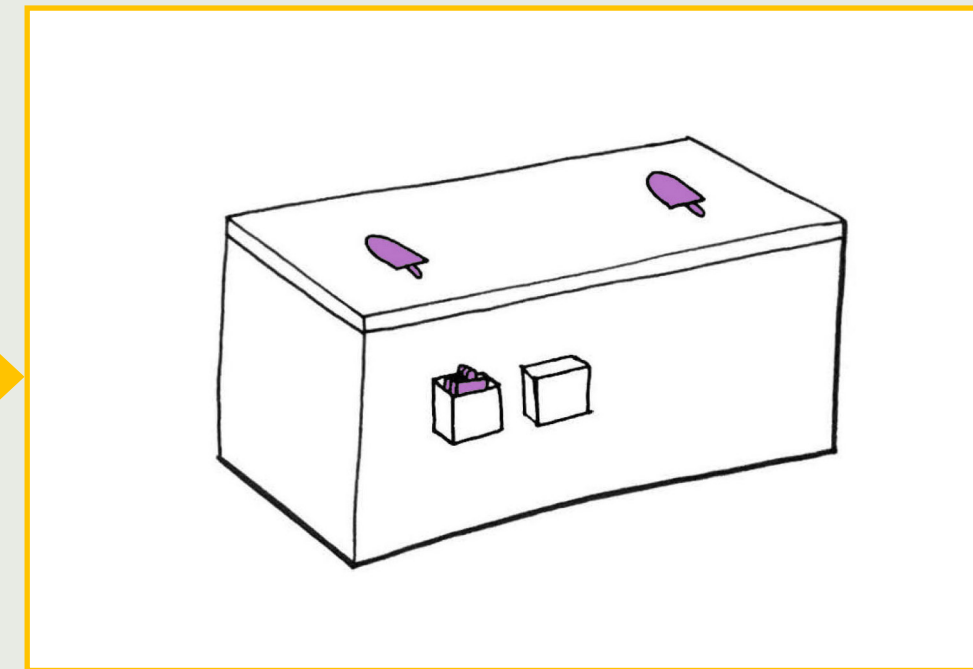
Intended Label Use at KoP



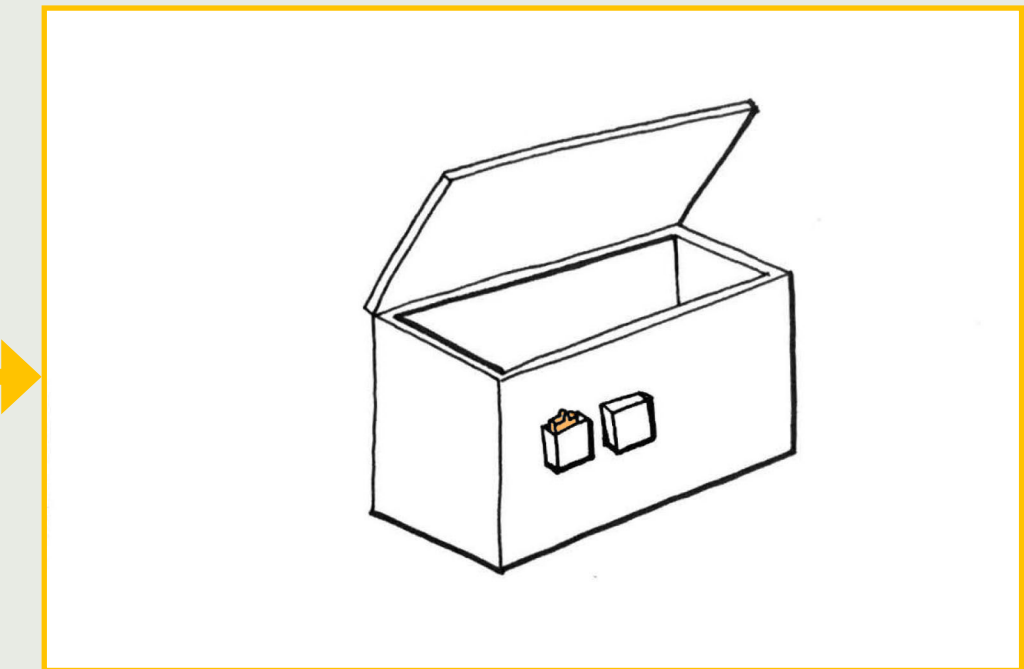
Stickers used to label bins and boxes when pops are packed in production



Shelves in walk-in freezers are labeled with flavor magnets



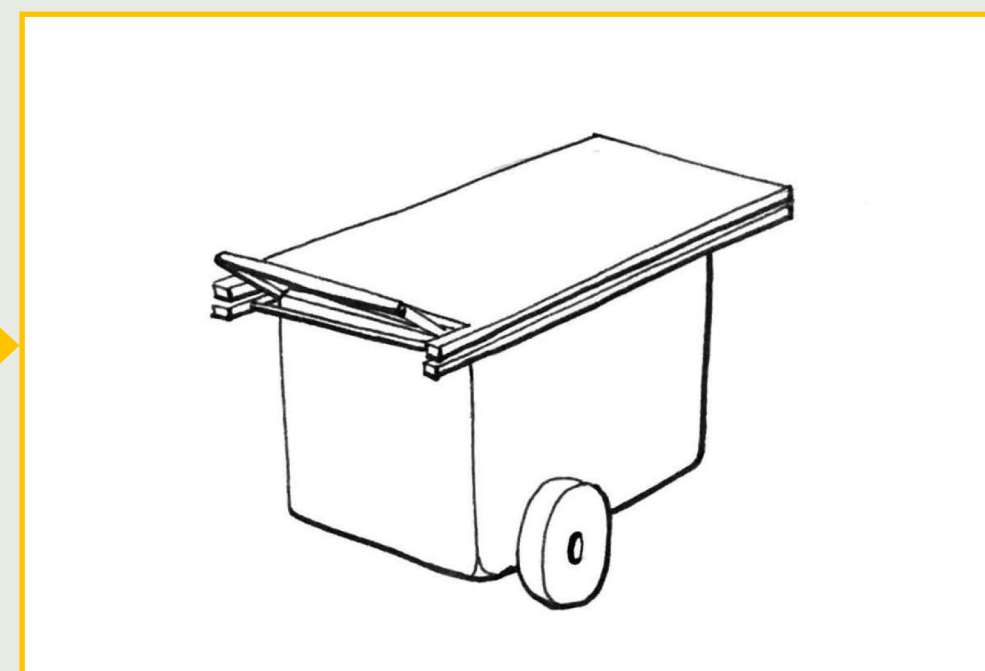
Chest freezers are labeled on top with flavor magnets



As pops are packed, large and small magnets are collected with each flavor



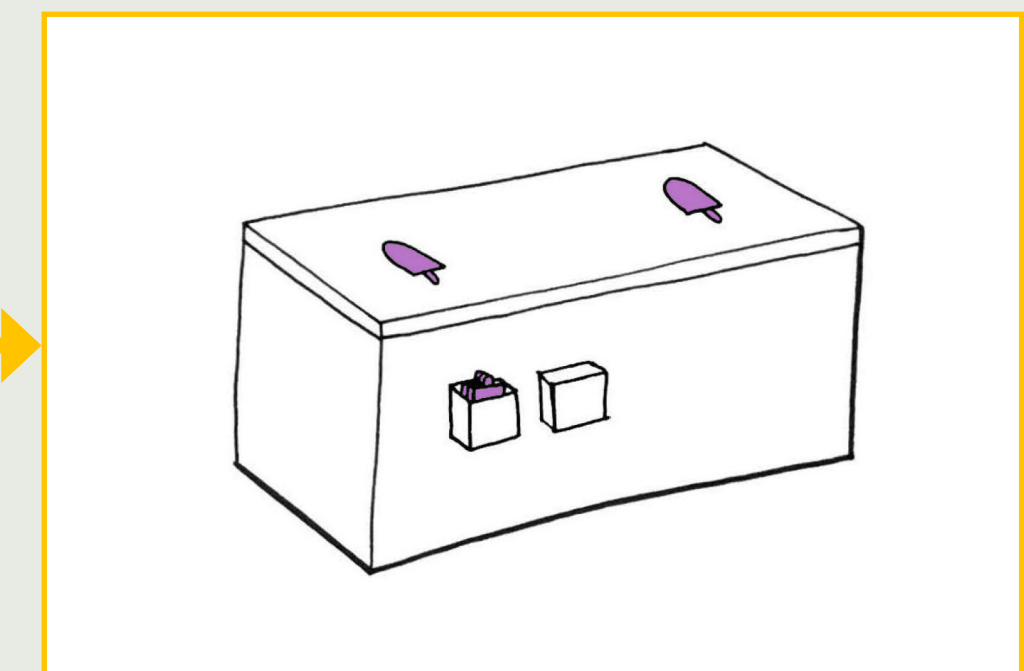
Packer assembles menu with flavor magnets and labels cart lids with small magnets



Slinger arrives and finds packed cart with labels and assembled magnetic menu



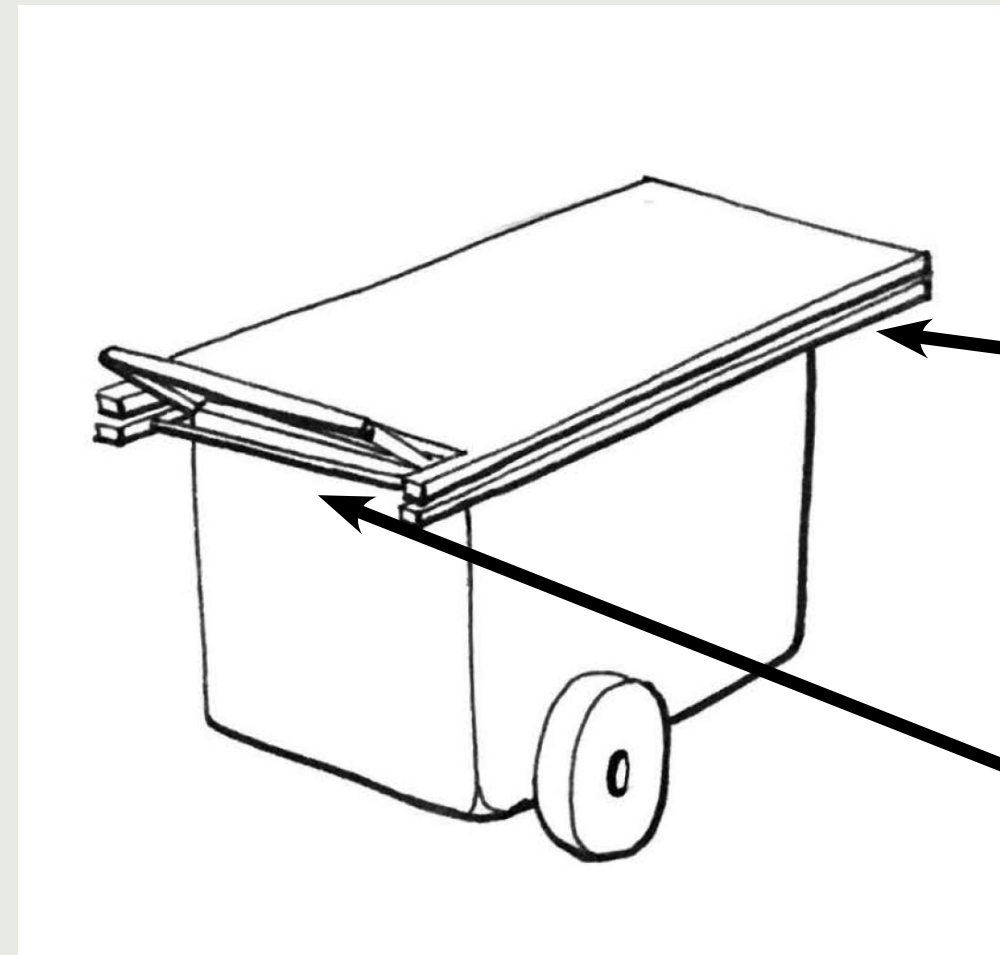
Slinger sells pops with fun and easy-to-read menu



Slinger returns magnets to boxes and unpacks cart

The Board

Magnetic Pop Menu



Branded Topper is Eye-Catching and Leaves Board Clear for Content

Double-Sided Hinges Allow Board to Close Up, Protecting Content

Metal Bar Acts as Handle and **Stabilizer** on Cart During Transport

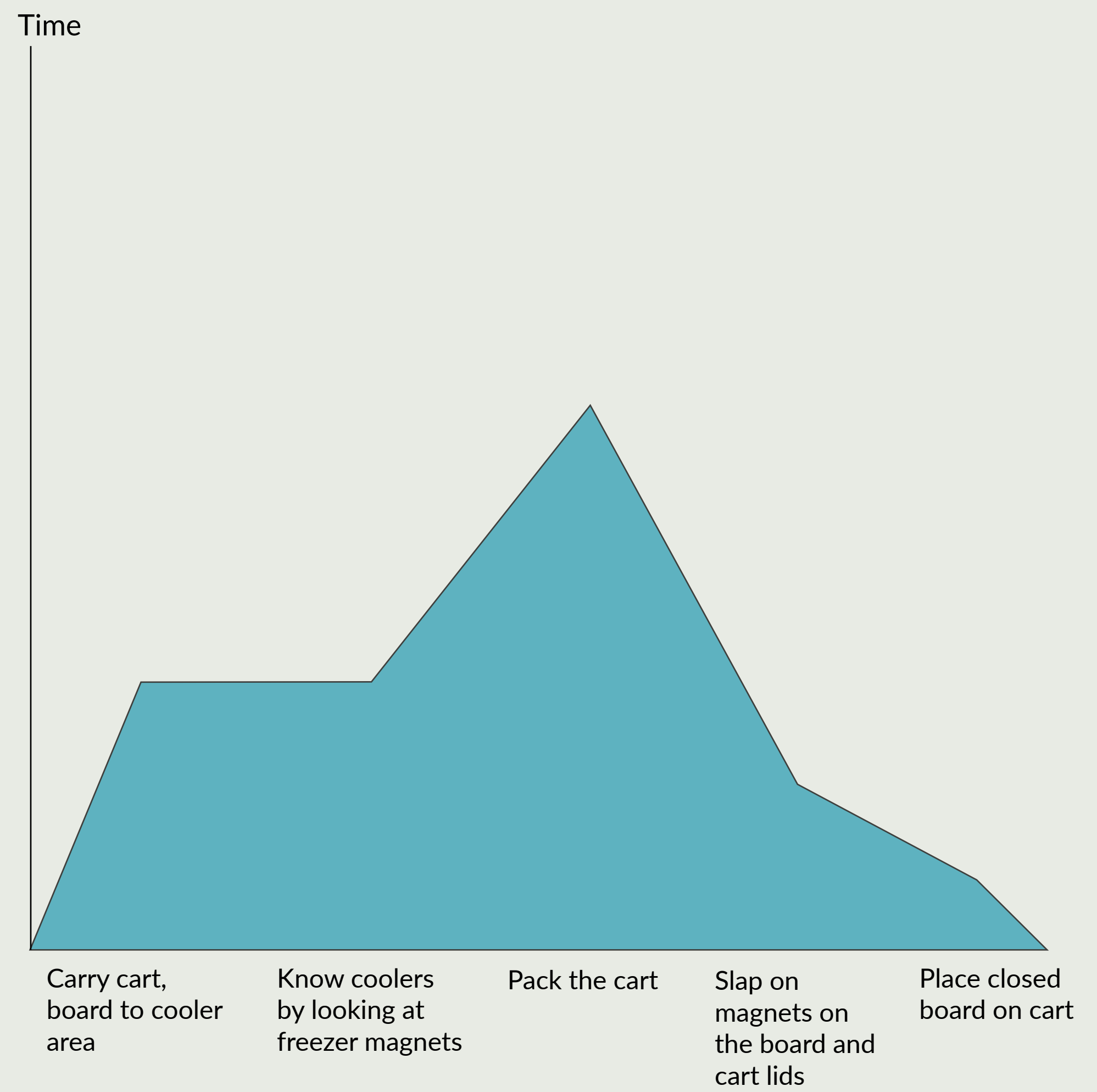
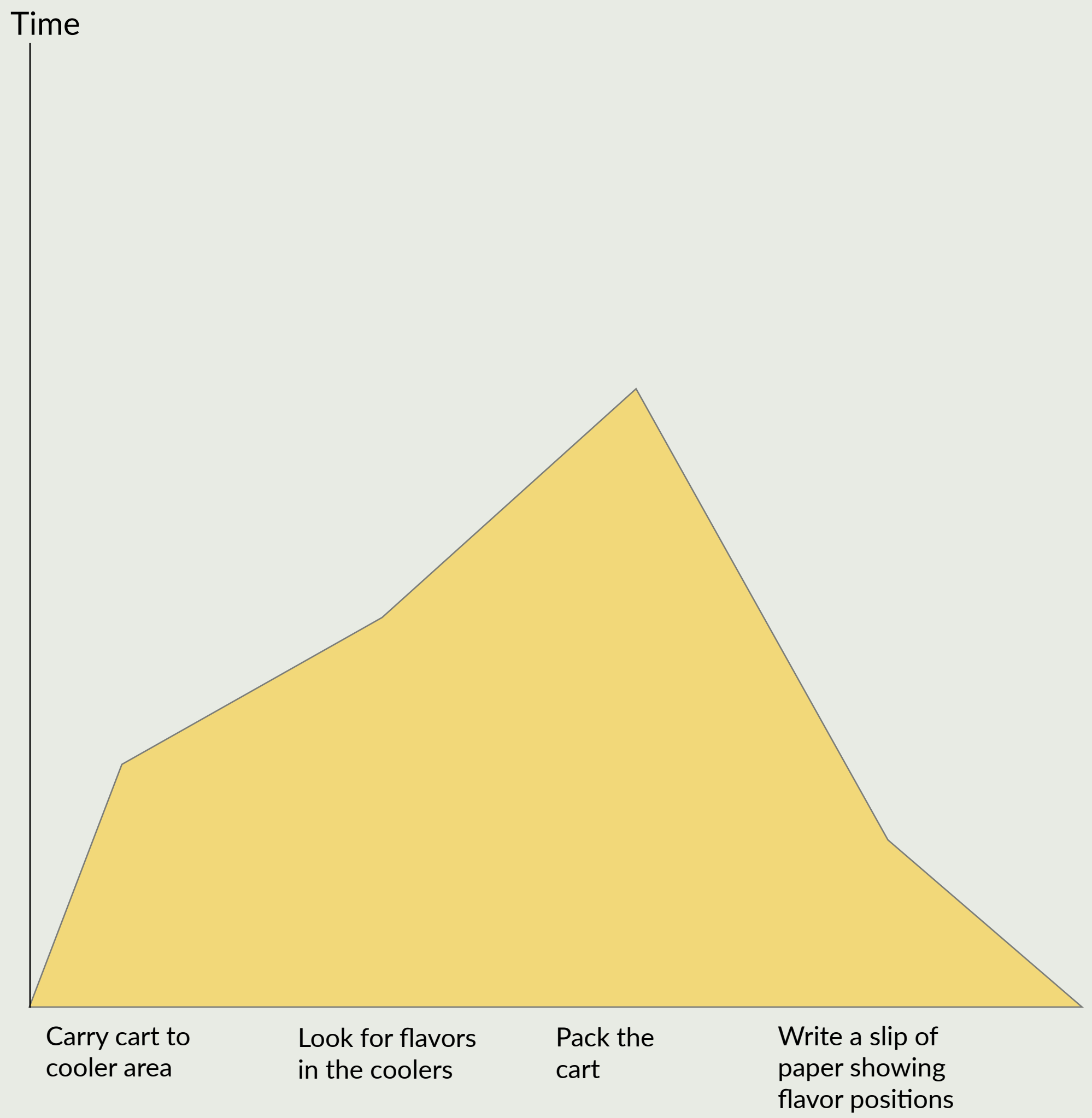


Hook Closure for Stability in Open or Closed Position

Magnetic Chalkboard for Flavor Magnets or Handwritten Messages

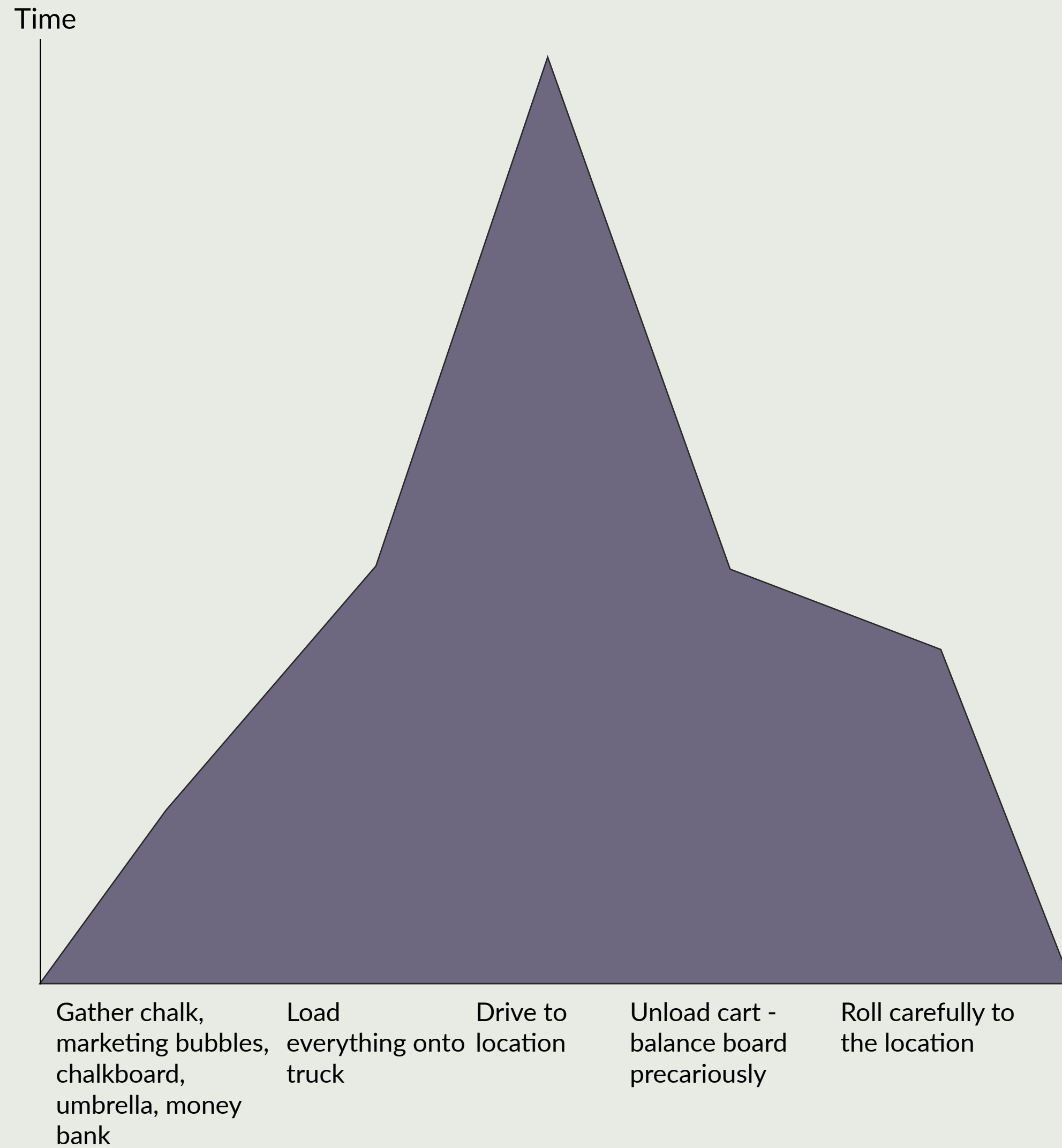


Journey Map - Packing Carts



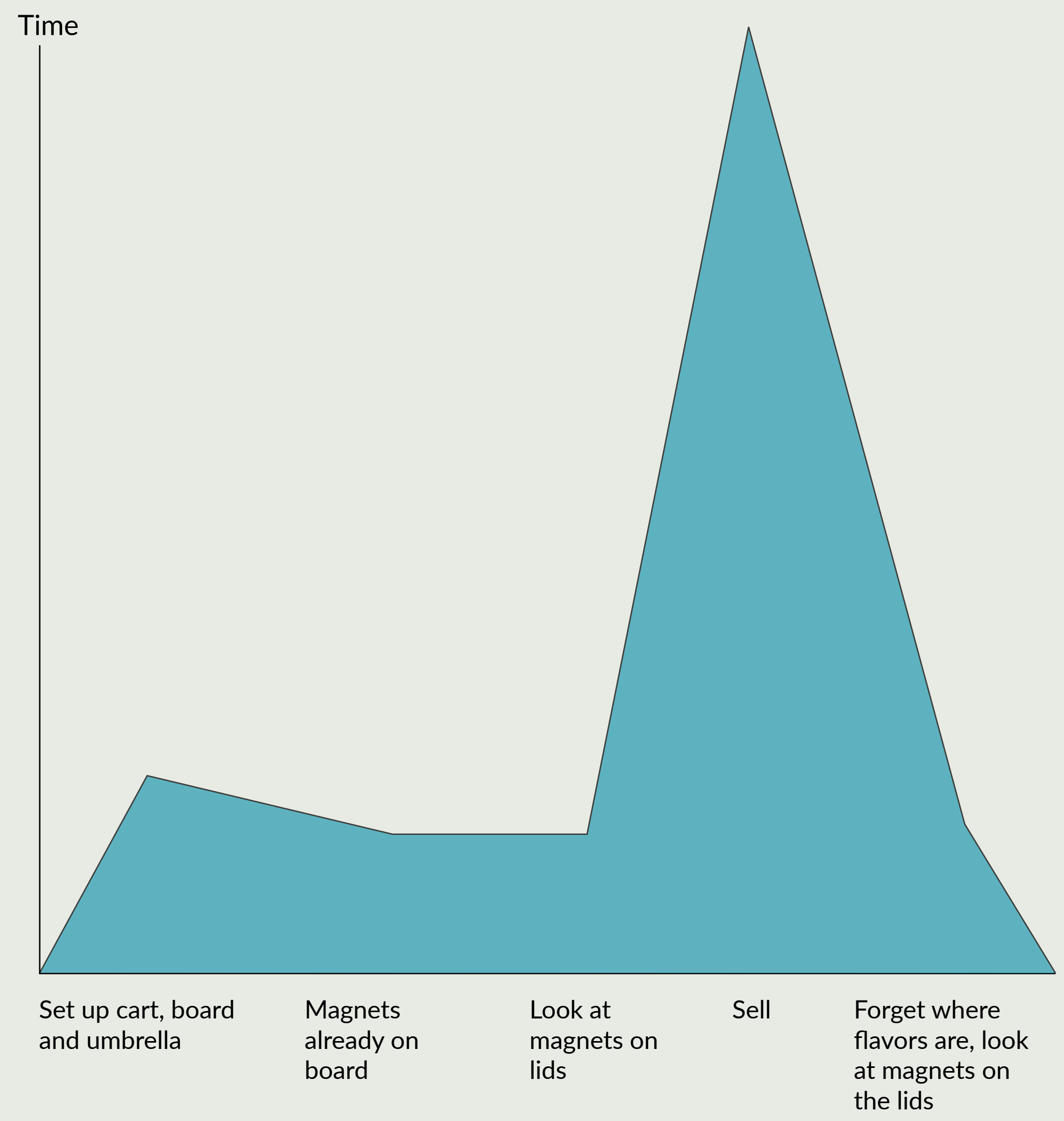
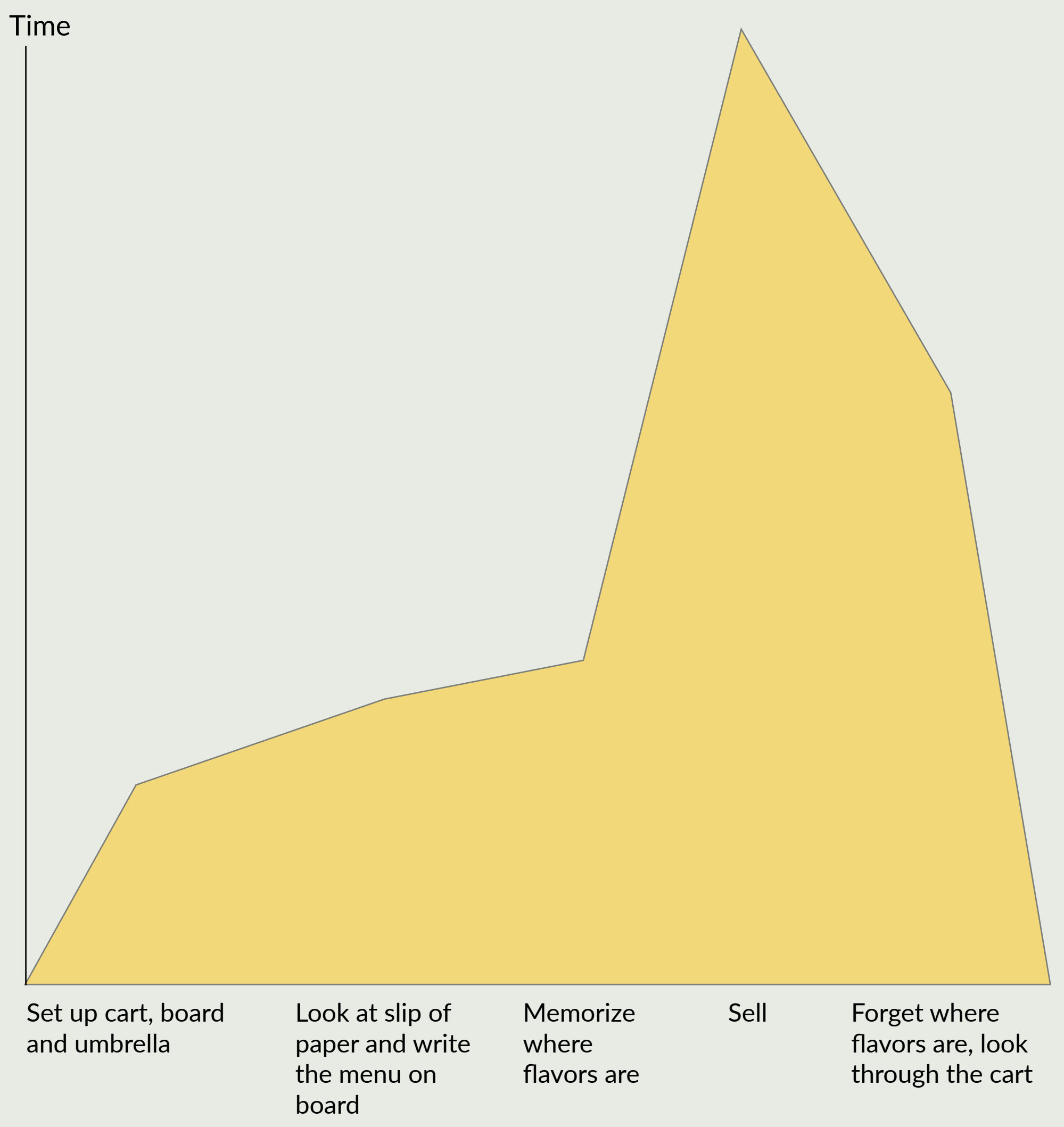


Journey Map - Slinger Commute



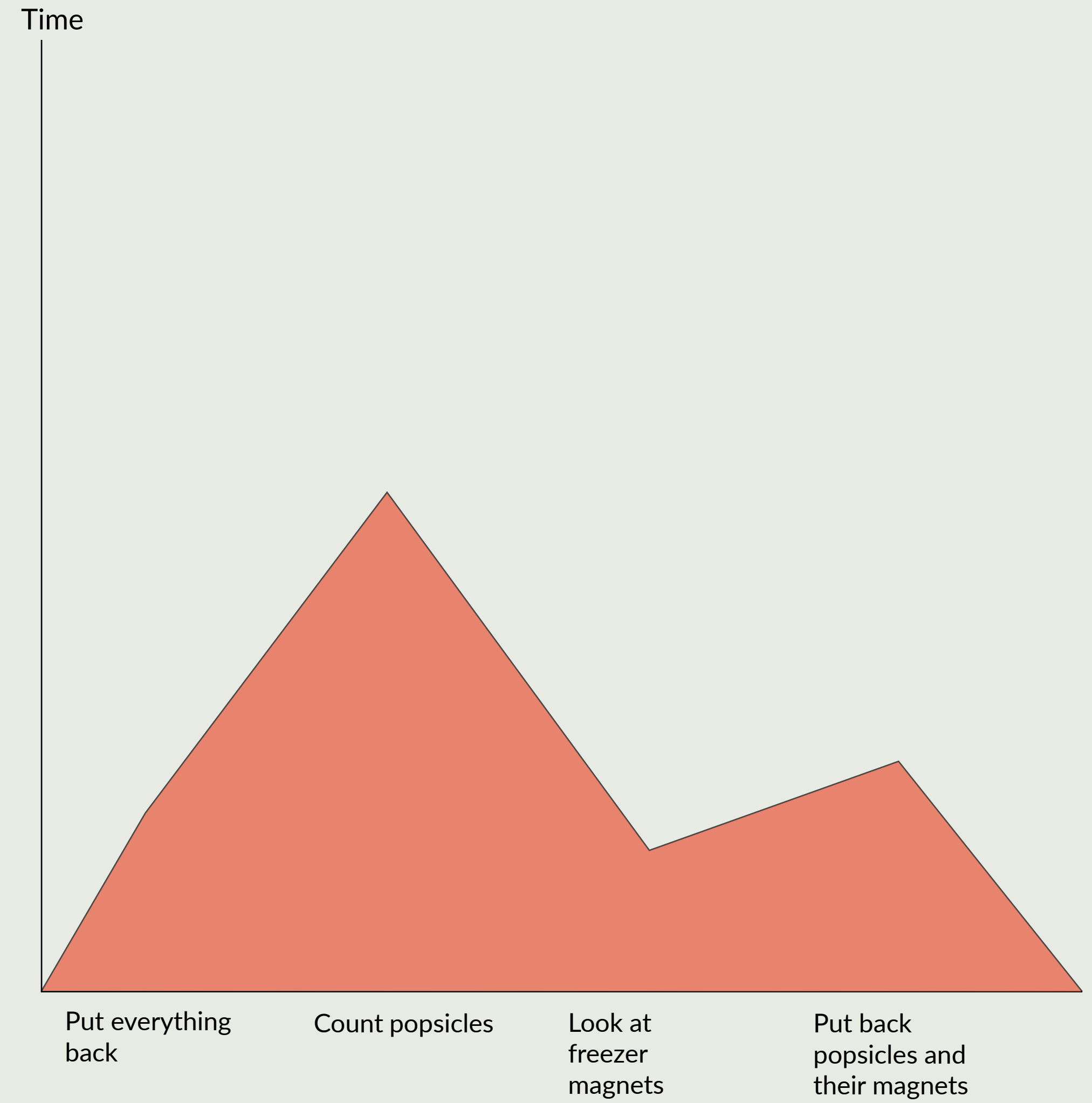
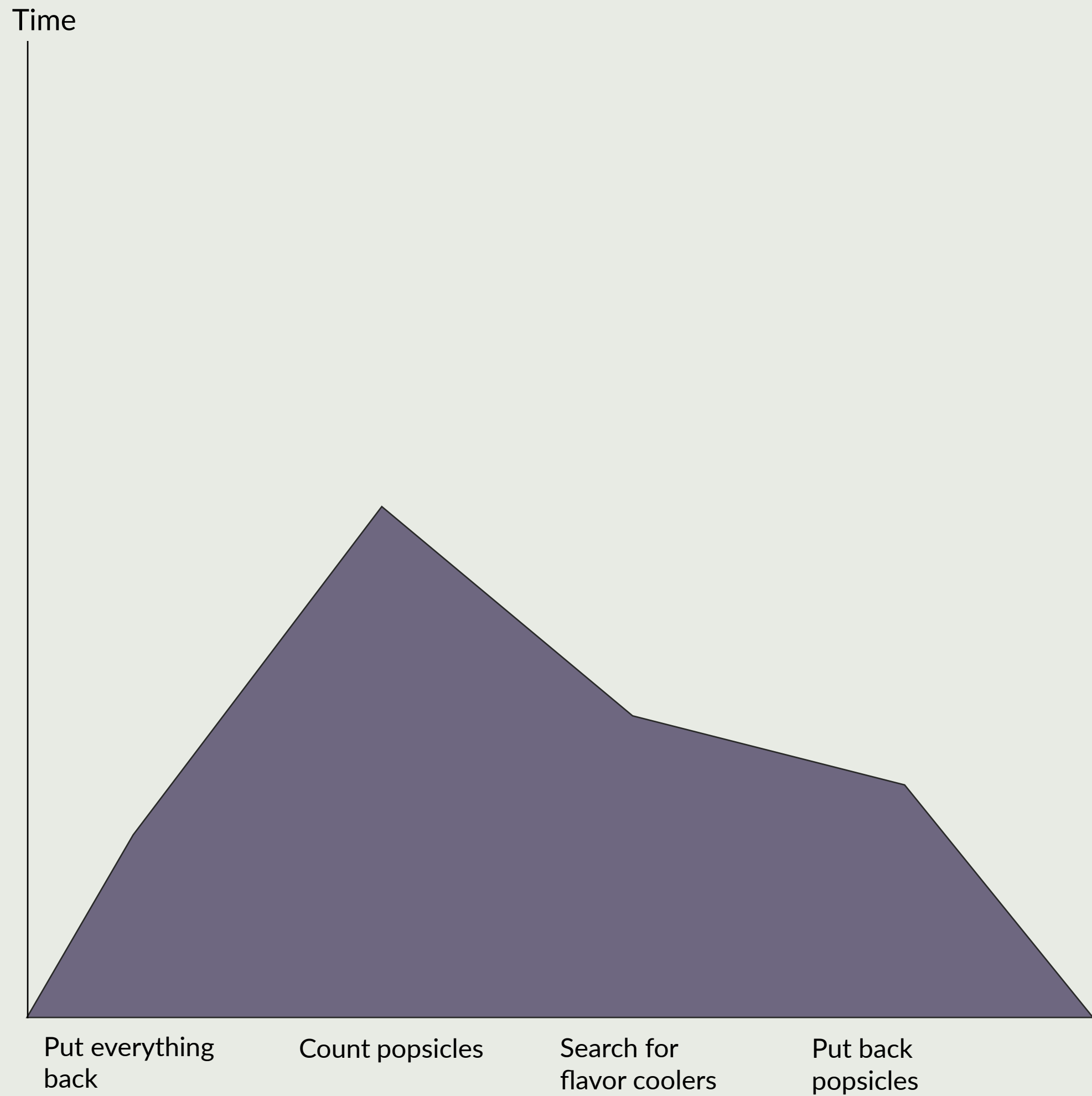


Journey Map - Pop Selling



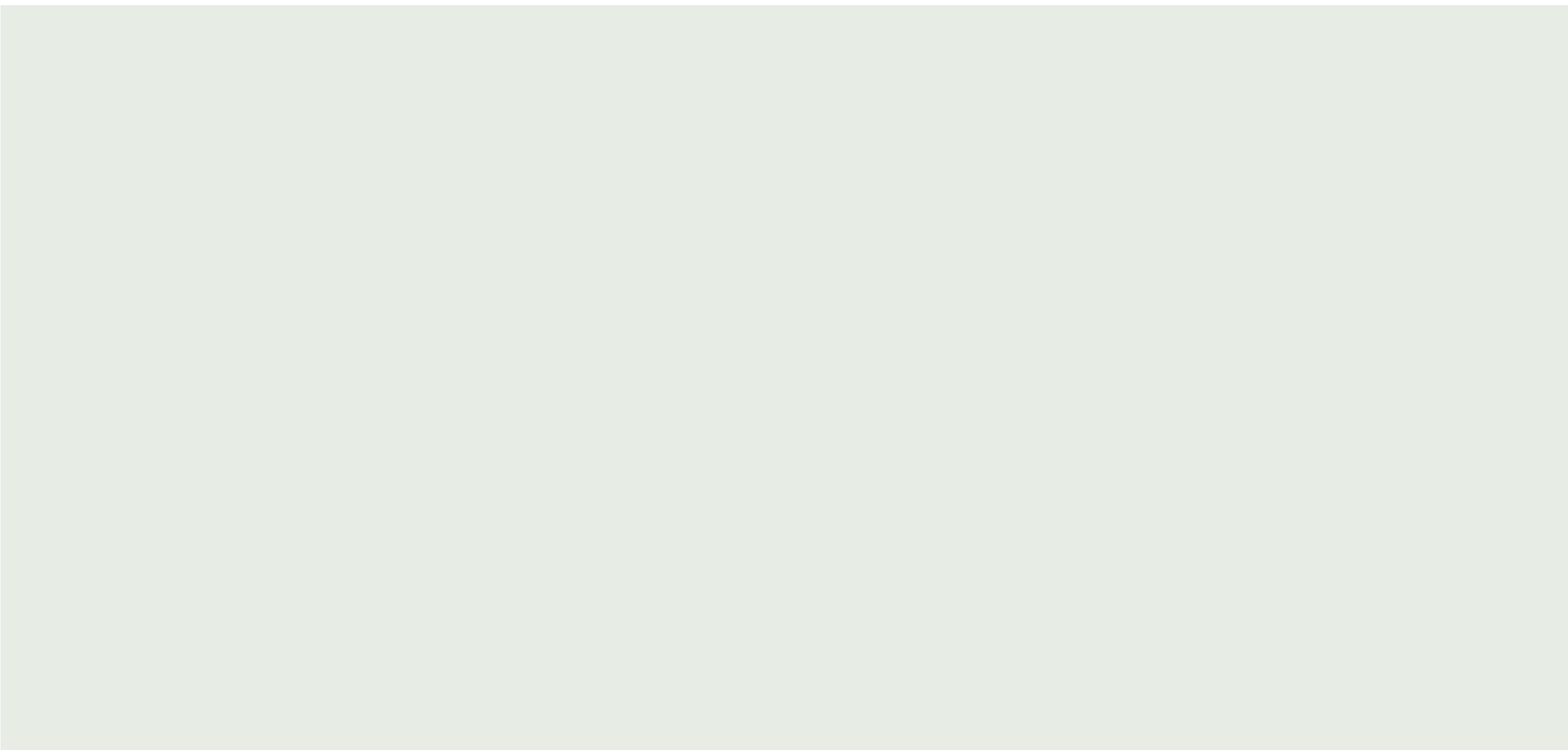


Journey Map - Inventory at HQ

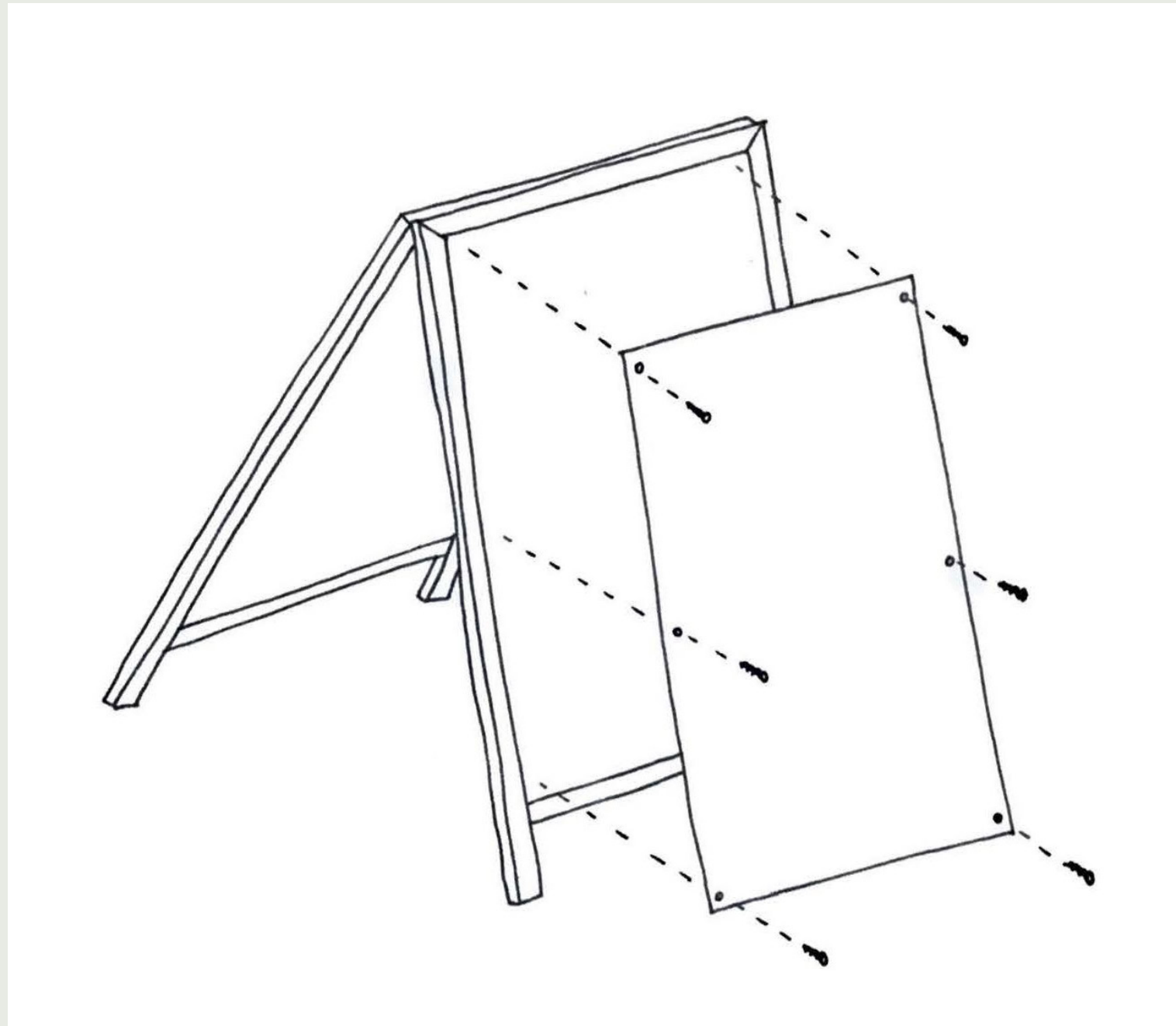




Simplified Journey Map



Immediate Implementation



Modifications to current menus to become magnetic:

- Paint 22 gauge sheet steel with primer and chalkboard paint
- Screw sheet metal inside frame

Labels:

- Design refined by KoP Graphic Designer
- Magnets printed at a local magnet printer
- Stickers printed in-house or through sticker printer
- Magnets and stickers used for labeling freezers, menus, boxes, and bins

Menus:

- New design refined for production by local carpenter or assembled by KOP staff
- Old menus made magnetic by adding thin ferrous sheet metal to front and repainting with chalkboard paint
- Use with flavor magnets for selling

Conclusion

Problem Statement:

There is no consistent or easily legible organization system for pops. Labeling is currently being addressed by many disparate strategies, including printed labels on bins/boxes, handwritten signs, computer paper printouts, etc.

Design Outcome:

A legible and multi-purpose label which can be printed as both a sticker and a magnet in order to address organization needs at various stages in the process. This system will increase efficiency and create a consistent labeling language from production through sales.

