5-1-2018

Cuoco Cart

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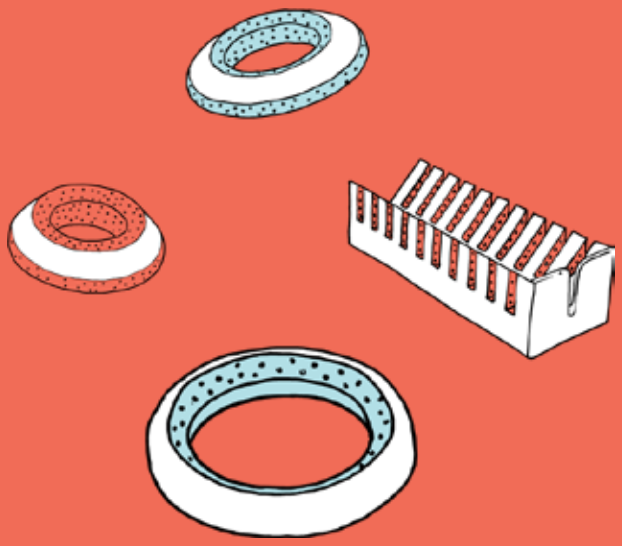

Thank You

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Families

Cahill Family
Guidice Family
Kradel Family
Quigley Family

Thank you to friends, family and classmates who helped and supported our project.

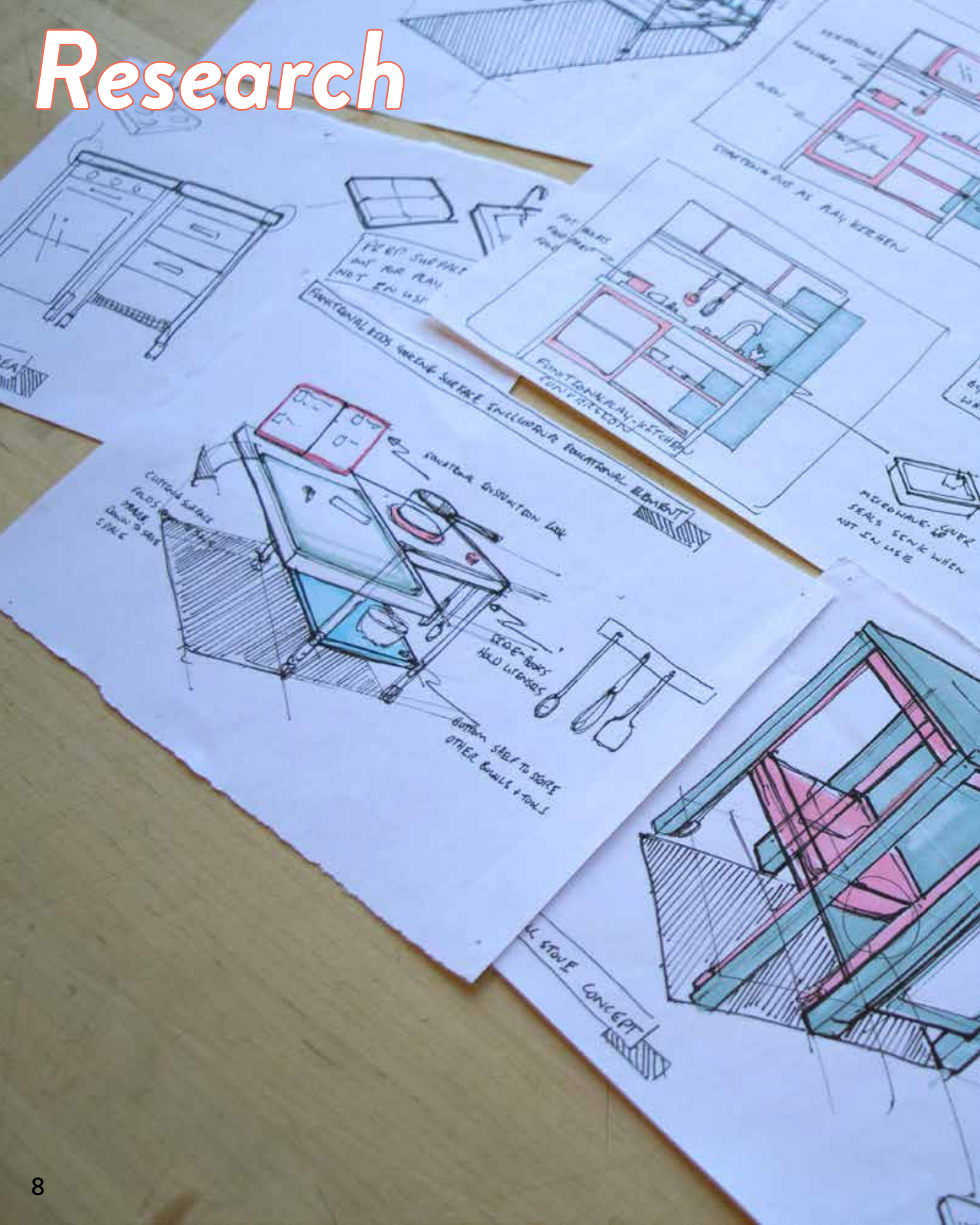
Research

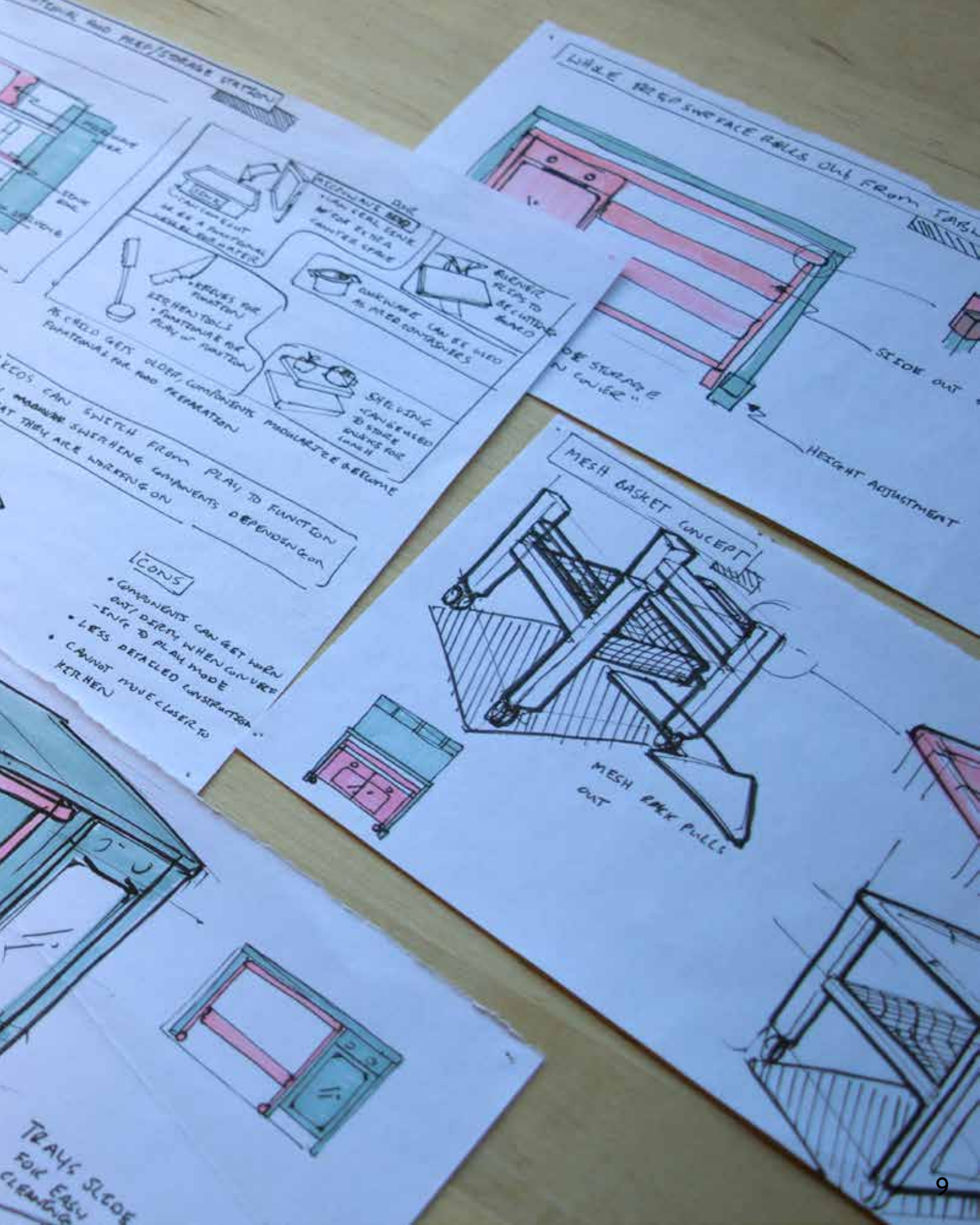
Process

Final Design

Cuoco Cart is a food preparation system for children that provides a safe, contained environment for collaborative cooking and early childhood independence between the ages of 5-8 years.

Research


FUNCTIONAL KIDS KITCHEN SURFACE SHELLWORK FUNCTIONAL ELEMENT
SIDE BOARDS HOLD UTENSILS
BOTTOM SHELF TO STORE OTHER BOWLS + TOOLS
STOVE CONCEPT


MESH BASKET CONCEPT
MESH BASKET PULLS OUT
HEIGHT ADJUSTMENT
SLIDE OUT
CONS
TRAYS SLIDE FOR EASY

“I didn’t learn how to cook until I got to college, and by then I was all on my own.”

– Dylan Ouellette

There is a Problem with Food in America

Cooking is now Optional

Modern America has effected our relationship with our food. We don't need to spend time in the kitchen to feed ourselves. After women left the kitchen to join the workforce in the mid 1900's, big food industry has taken advantage of the fact that preparing food takes time, and has flooded our supermarkets and restaurants with instant, convenient, processed foods.

Our Lack of Cooking is Effecting our Children and Young Adults

Our busy work lives not only effect our eating habits, but our children as well. Only 21% of parents are cooking from scratch every day, which means that the majority of kids are still eating processed food. It is not surprising to hear that around one in five children is overweight or obese before they even start primary school.

How will children and young adults grow to learn the basic life skill of cooking in our fast paced, processed food - driven society?

Teaching Kids about Food Starts in the Home

Parents are the Start to Good Eating Habits

Having children help their parents while they prepare meals at home creates a foundation for wholesome eating habits. Children are more comfortable at home, which makes them more receptive to new foods because they will make the connection to a positive experience.

Good Eating Habits Carry Through Life

Involving kids in the kitchen helps foster family togetherness, prevents behavior problems, and leads to better results for children in school. Kids develop a richer vocabulary and improve their communication skills. They build confidence in their abilities and gain independence when receiving tasks from parents .

"The social skills that meal planning, food preparation, and sharing provide are vital for school success and beyond."

-Paul Fieldhouse

The Reality of Cooking with Kids

What Parents Have to Say

In order to design a product that would provide a better cooking experience for both parents and children, we first needed to gain insight into what it was actually like cooking with children.

We formed a Facebook discussion group between us and all the parents we knew who cook with their children. In the group, parents shared their experiences with us.

Having your kids help you cook can be messy, stressful, and dangerous.

"It makes a huge mess. Cleaning up takes time away from preparing the meal."
- Renee D.

"Time in the kitchen is when they play separately from me. I get a small break from kid world to have an adult moment."
- Kristen C.

"Hazel cut her thumb on the peeler. Maybe I shouldn't have let her use it, but she wanted to and I didn't want her to feel left out."
- Renee D.

"I often blame lack of time for excluding my kids from kitchen work. It takes energy and attention to raise kids who are ultimately knowledgeable about food, confidence in the kitchen, and enjoy cooking."
- Kristen C.

Observational Research

Seeking Out the Source of the Problem

The next step was visiting families in order to observe them cooking together. We went to multiple households to gain firsthand experience of what it's like cooking with children in the kitchen.

We observed children both cooking and baking with their parents, and noticed many different pain points. Overall, cooking with children is a messy, dangerous, and stressful experience!

Having children help in the kitchen is messy, dangerous, and stressful, but what is specifically causing those problems?

The Seating Situation

- Kneeling on the stool rather than sitting on it because it isn't at proper height
- Kids have to get down from the stool they are working on to grab a tool they dropped

- There are multiple stools for different sections of the counter top
- Kids frequently wash their hands off, which requires getting on a stool to reach the sink

- Children are sitting on the counter top to help cook, which is a major hazard
- Sitting on the counter top does not provide a proper work height, which increases food spills/falls

Where to Put the Peels?

When it was time to dispose of the food waste/scrap, it was carried to the garbage, increasing the risk of dropping what is being transported.

Food and scraps can take up space on a work surface creating clutter, disorganization, and spills as they build up.

Stirring Stabilization

Stirring in a bowl on a surface that is not a proper height for children causes instability and reduced visibility.

Stirring and stabilizing a bowl at the same time can be difficult for children with developing dexterity in their hands.

"Gen-Z are more inclined to make their own home-cooked meals over processed, ready-to-eat foods that are heated in the microwave"

-NPD Consumer Trends

Kids and young adults aren't learning how to cook

Why?

Lack of interest in older generations
(Exposed to processed,
pre-made foods at an early age)

Parent's have hesitations
due to mess made, and
safety of children helping

Market Opportunity

"Younger generations will prepare dishes based on wordless videos and pictures found online"

- NPD Consumer Trends

The household kitchen is not designed to accommodate for tiny kitchen helpers

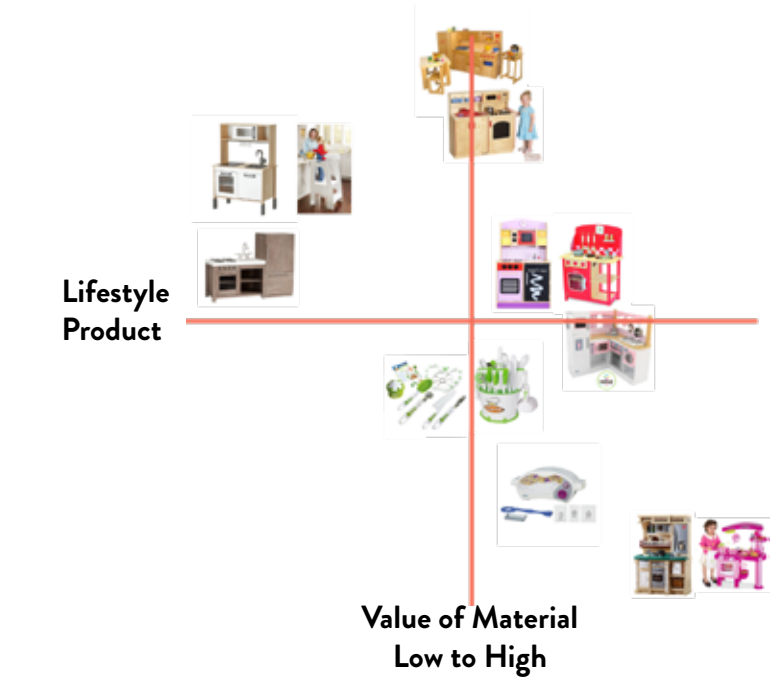
Who We are After

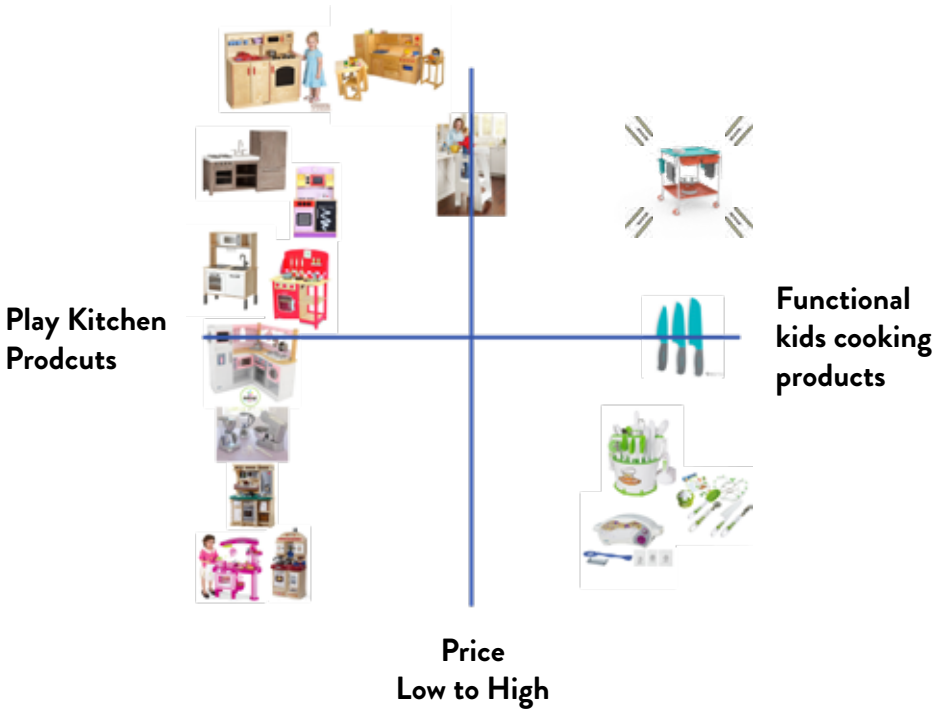
Food Oriented Families

Our target demographic are families that strive to eat together and are looking to improve or sustain healthy eating habits. These families want to/already include their kids in cooking, but are struggling to include them due to an unequipped kitchen or just dealing with the pain points of having your kids help.

Families that include their kids in cooking but are struggling with the challenges that follow.

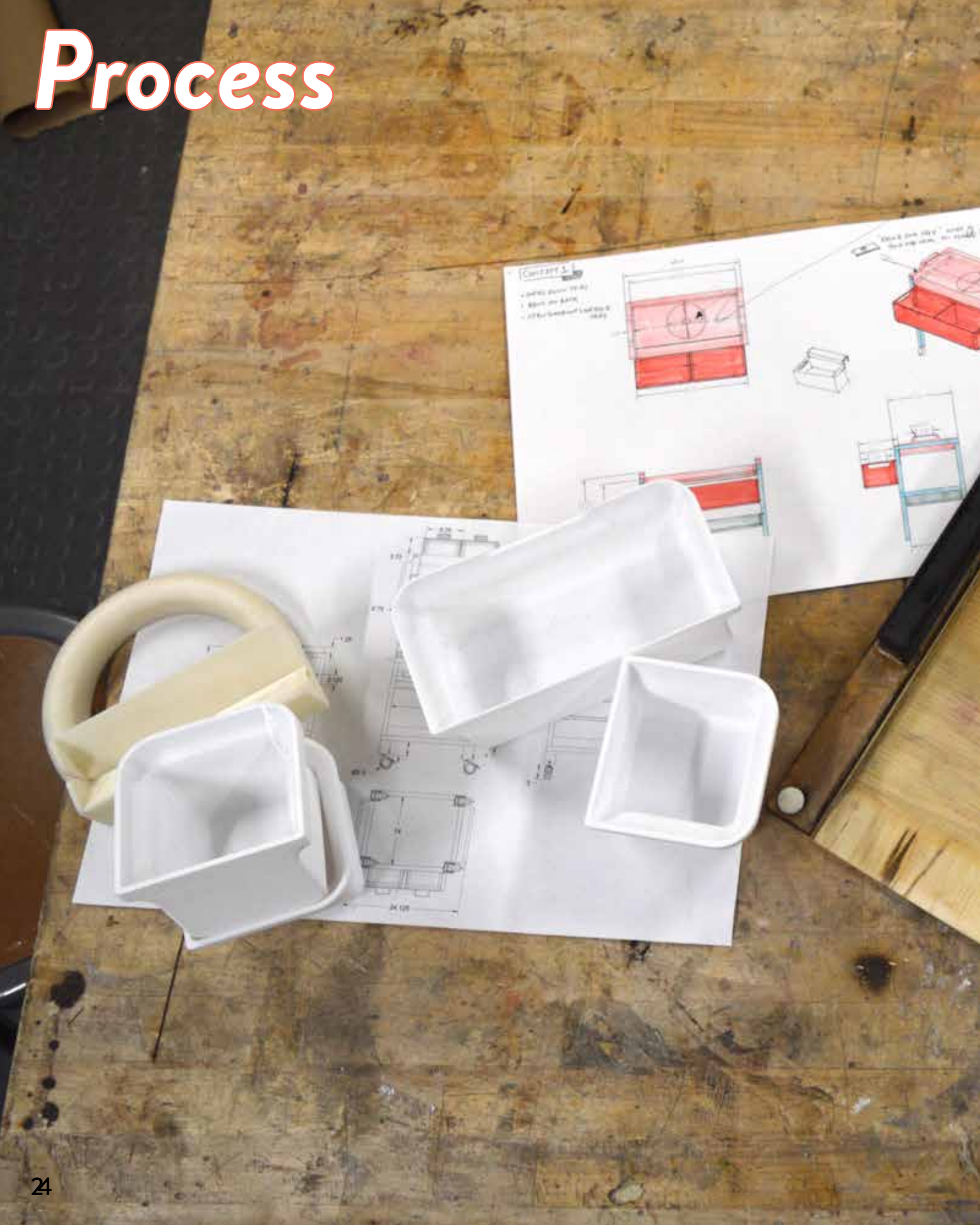
Market Analysis





Current kids kitchen helping products don't provide modularity, mobility, and a personalized workspace. Play kitchens are only designed for play, not real food preparation.

Process

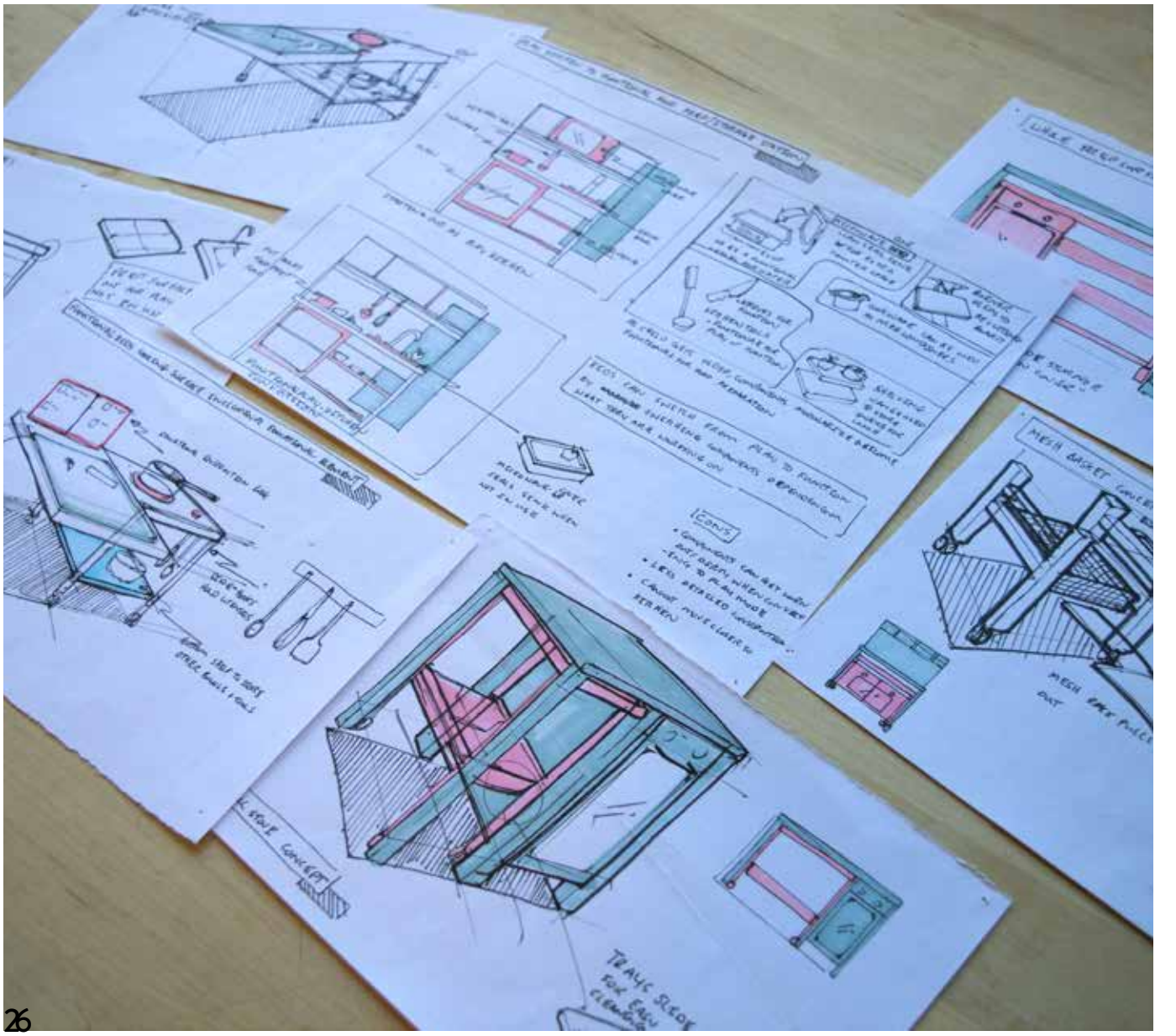


Revamping the Play Kitchen

Combining Play and Real Food Prep

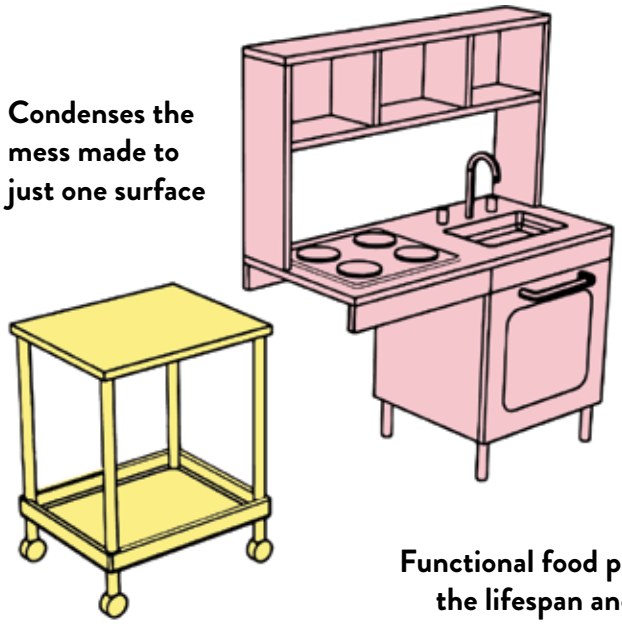
Our initial idea was to add a functional, real-food interactive component to the everyday play kitchen toy. We iterated on ideas that provided a slide-out cart for real food prep that was connected to the play kitchen. We discussed having certain "play features" be modular that converted the play kitchen into a real work surface. We also discussed having a real, working burner implemented as well.

Our initial idea was to add a functional, real-food interactive component to a play kitchen.



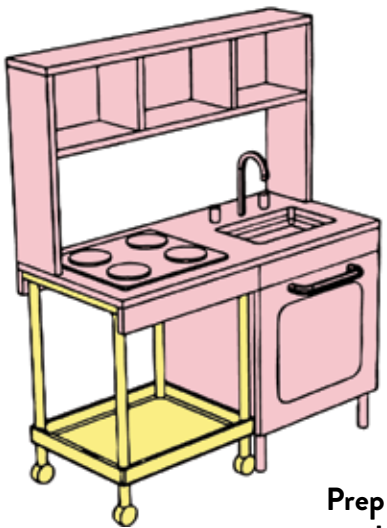
Concept 1

Condenses the mess made to just one surface



Functional food prep surface pulls out; extends the lifespan and value of the play kitchen

"Perhaps it could be dual use, as a both play kitchen and a fully operational kitchen, by designing it with wheels so it can easily be moved back to the playroom."
- Kristen C

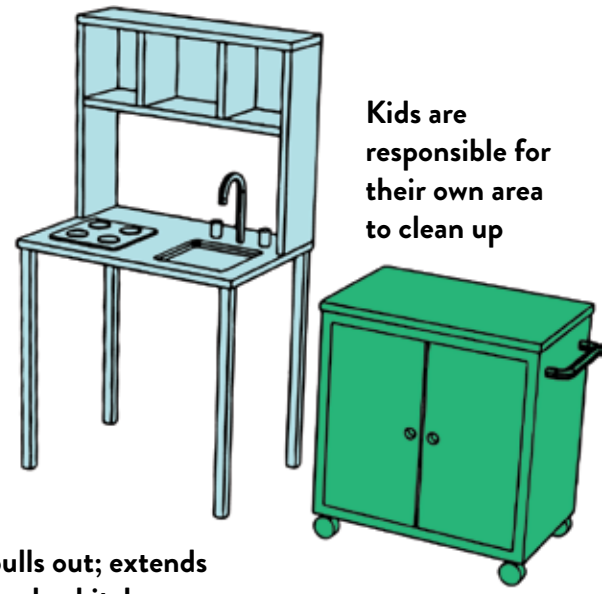


Prep surface is stored inside, when theplay kitchen is still in use

"I wouldn't replace the prep surface with the play kitchen, my kid still uses the play kitchen, even when she "helps" me cook." -Renee D

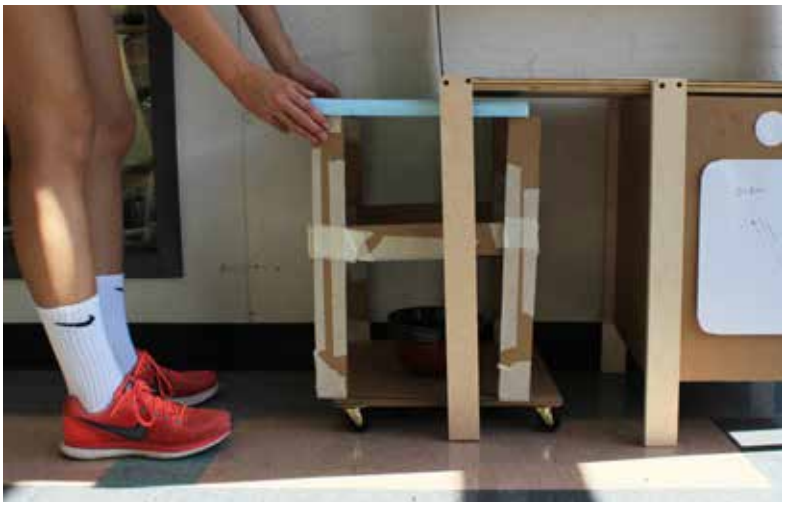
Concept 2

Kids are responsible for their own area to clean up



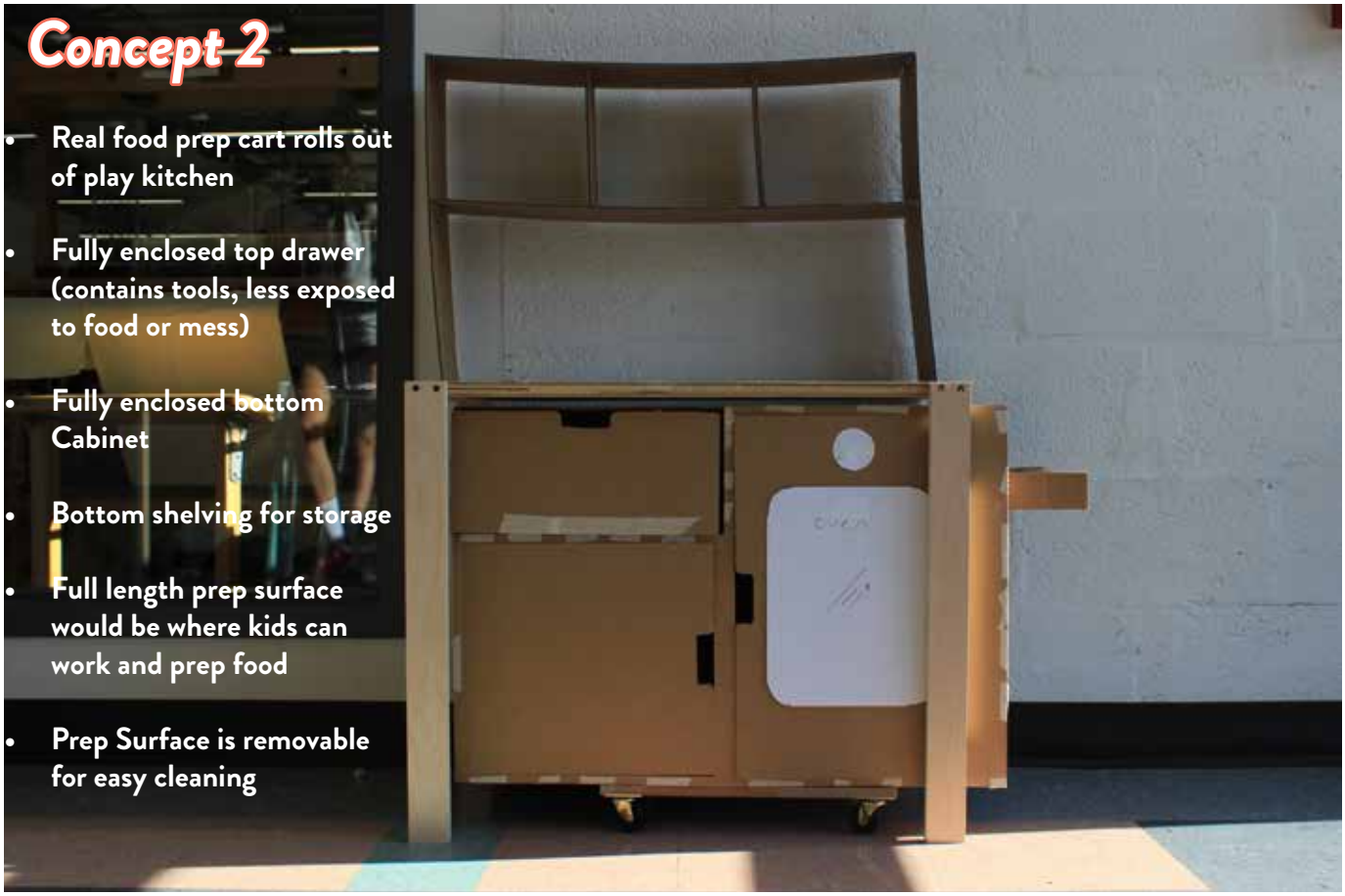
Concept 1

- Real food prep cart rolls out of play kitchen
- Prep surface would be where kids can work and prep food
- Prep Surface would be plastic, same properties of a cutting board
- Surface has a lipped edge to contain spills
- Prep Surface is removable for easy cleaning
- Bottom shelving for storage



Concept 2

- Real food prep cart rolls out of play kitchen
- Fully enclosed top drawer (contains tools, less exposed to food or mess)
- Fully enclosed bottom Cabinet
- Bottom shelving for storage
- Full length prep surface would be where kids can work and prep food
- Prep Surface is removable for easy cleaning

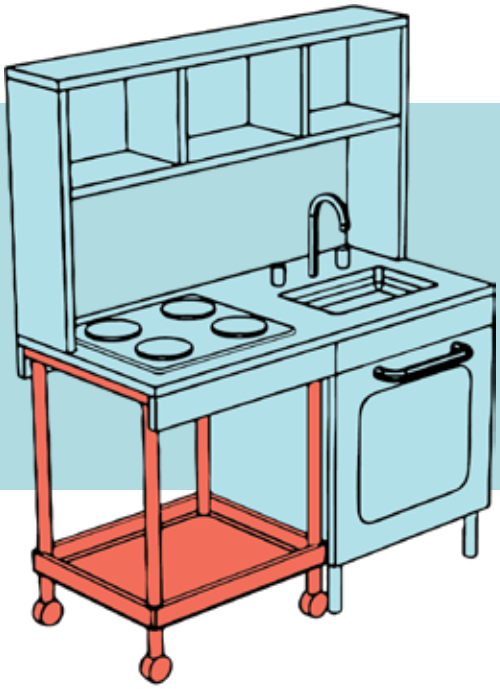


Problems from User Feedback

Food Prep Cart + Play Kitchen

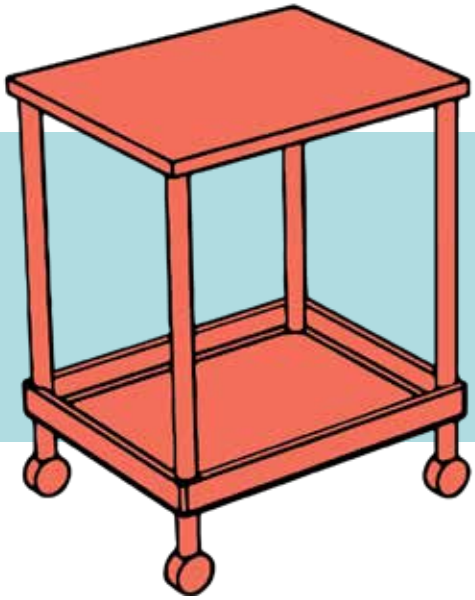
While visiting families and observing them cooking together, we asked parents whether they would buy and use a food prep cart and play kitchen system. Most people said that their children already had a play kitchen and would not buy a whole new one just to have it integrate with a food prep cart. A lot of people also had their children's play room on a different floor than their kitchen, and said that they would not want to carry the food prep part back and forth between the two.

Many parents we talked to said that they would only use the food prep cart.



Food Prep Cart
+
Play Kitchen

Based on our user feedback, we decided to eliminate the play kitchen component and focus solely on the food preparation cart.



Food Prep Cart

Developing Design Criteria

Designing Based on What Parents and Kids Need

We needed to develop design criteria for our food prep cart. The criteria needed to fulfill the needs of parents, as well as the kids to be successful in helping prep food. All of the features that we designed for the cart must include the following criteria on the following page.

Easy to Clean

Contains Mess

Encourages Organization

Work-Flow Oriented

Our design criteria needed to fulfill the needs of parents, as well as the kid's to be successful in helping prep food.

Safe Environment

Mobility + Height Adjustment

Encourages Collaboration

Promotes Independence

Developing Our Features

We designed our features for the cart based on our design critera.

Organize tools and prepared food

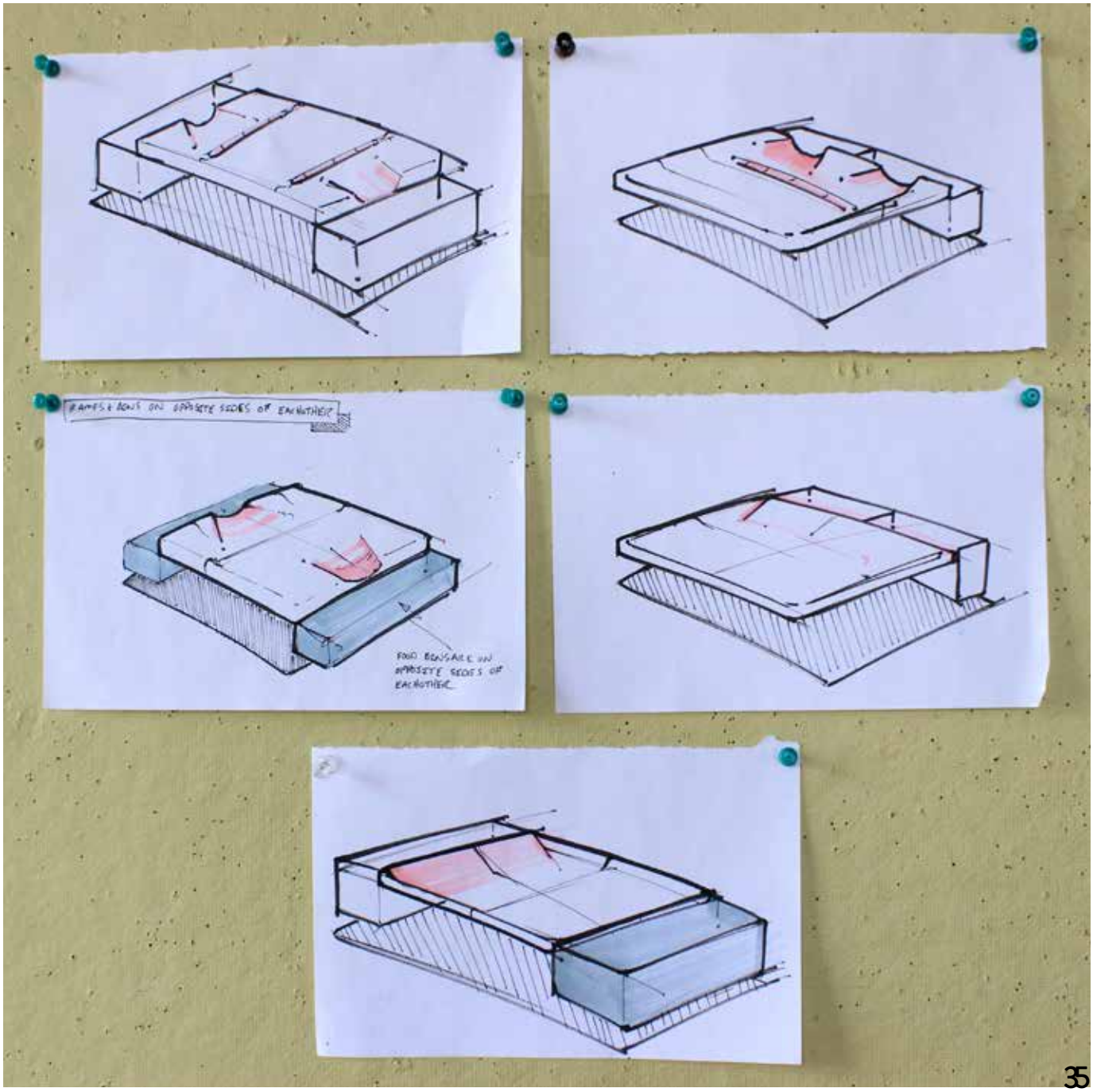
Provide a safe, easy-to-clean work space

Promote independence through the use of assistive tools

Provides a work flow by organizing the main three features

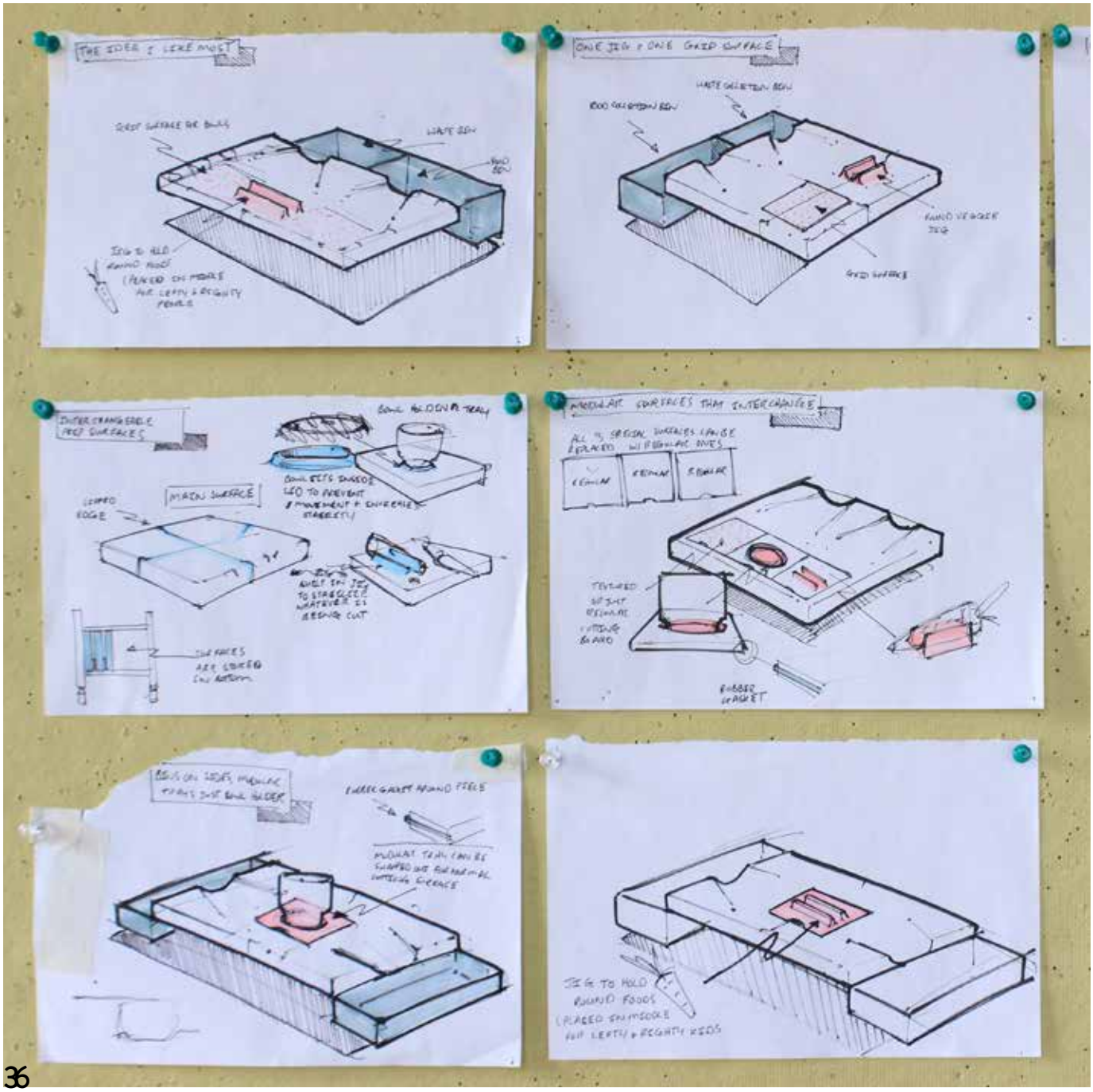
Developing Our Features

Iterations on how the tray interacts with the front food collection bins



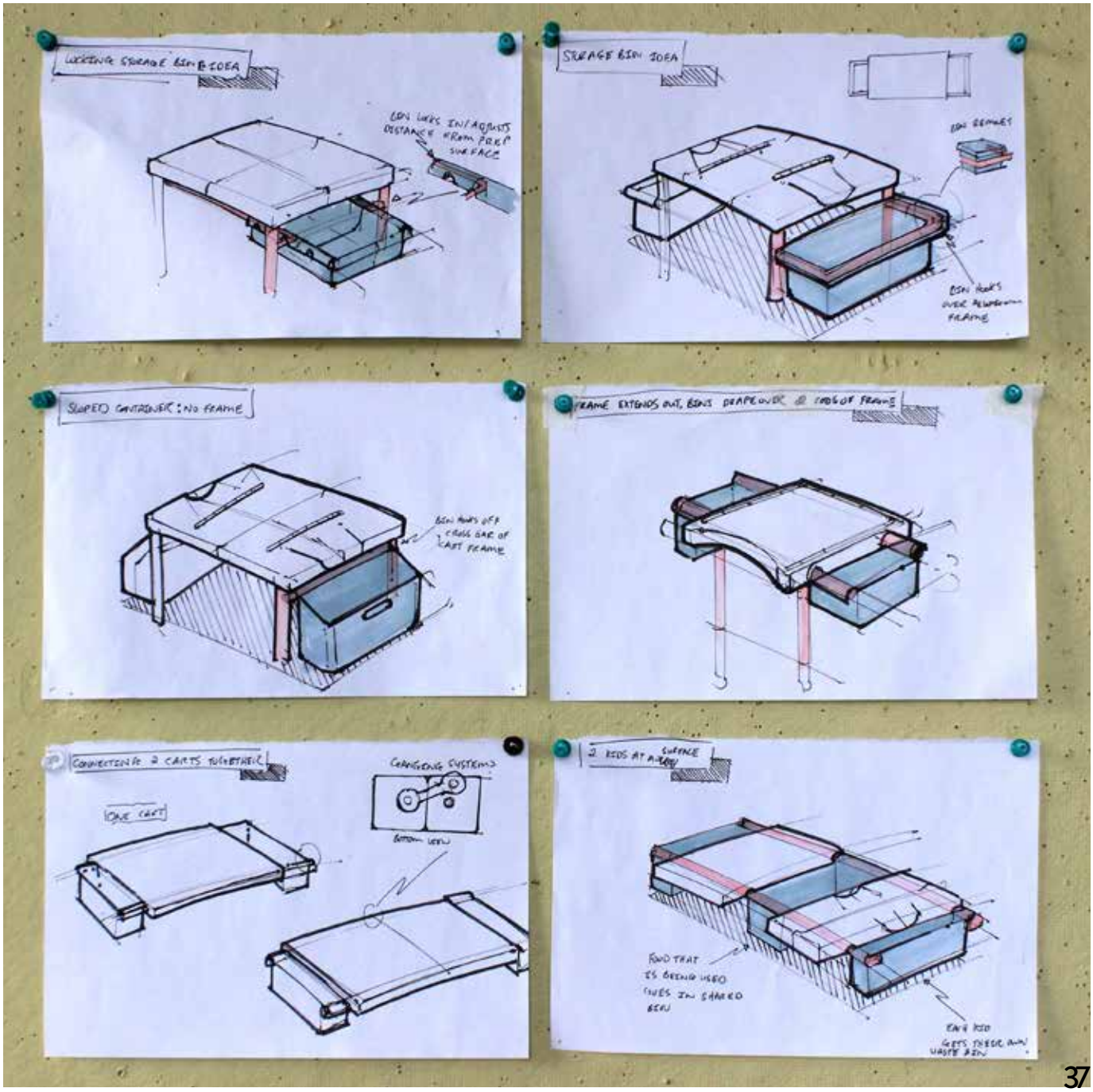
Developing Our Features

Iterations on how the assistive tools interact with the tray



Developing Our Features

Iterations on how the food collection bins interact with the frame



First Round of Prototyping

For the first prototype, we used wood and PVC pipe to construct our cart. We wanted to make sure that the tray would be removable for easy cleaning, and that all messes would be contained inside. We also wanted to make sure that the cart could be easily moved, so we added casters to the bottom and handles on the side that also function as towel racks or bin holders. We wanted to teach kids about workflow while cooking, which is why we added bins so that cut food or scraps could be organized neatly to reduce mess across multiple counters and the floor.

Cart features a removable tray, adjustable drawer storage, carrying handles, and food bins.

Food Collection Bins

- Collection bins are for containing food scraps and food prep products
- Side handles double as bin holders
- Bins can be placed at either side of the tray or in the back

Wheels and Storage

- Storage drawers have open tops, store food and tools in the cart
- Bottom casters allow the cart to move easily

Second Round of Prototyping

Adding and Removing Features

For the second round of prototyping, we eliminated the drawer storage so the cart could be cleaned more easily. We also added top handles to the tray so it could be easily picked up. In addition, we cut a hole in the top of the tray to stabilize a bowl in order to help children stir more easily.

We implemented food prep accessory inserts, designed the tray to be more interactive with the bins, and removed the bottom drawer storage.

Food Prep Surface

- Edge surface of the tray slopes down for food to swipe into bins
- Handles to lift cart off of frame

Tray Stabilization

- Tray is secured to cart frame using pegs on the frame that rest inside holes on the tray

Prep Accessory Insert

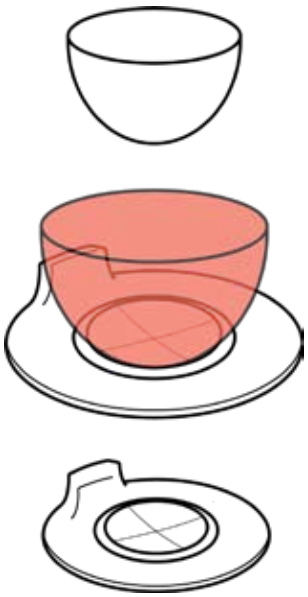
- Modular inserts implemented to assist in food preparation (see following pages for assisting food prep accessory design)
- Rubber seal around insert = no leaks

Designing Assistive Accessories:
Initial Idea - Bowl Stabilizer Modular Tray Insert

Food Prep Stabilization: Bowl

Based on our observations, we noticed children had a hard time stabilizing bowls when stirring, causing spills and unbalance. Our initial idea was to have an assistive insert that would go into the tray to stabilize a bowl, then when not in use, a flush inser t would enter the hole in the tray to allow for a normal food prep surface again.

Our initial idea of a removable insert would have increased the chance of leaks, and chance of losing the inserts.

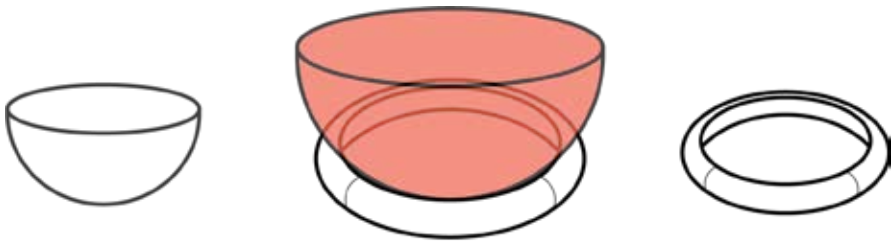


Drawbacks of Modular Tray Insert

- Modular inserts are more likely to be lost
- If the inserts are lost, the tray becomes useless because it creates an exposed hole
- Spill has to be cleared before releasing insert, otherwise food/liquid will drip through hole
- Lip to release insert creates a barrier when using the tray normally

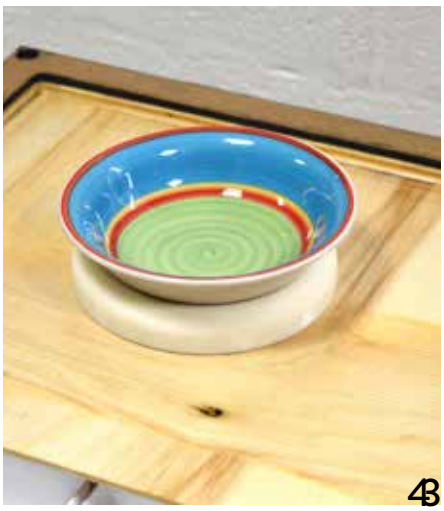
Designing Assistive Accessories:
Revised Idea - Bowl Stabilizer as Add-On Accessory

We revised our modular tray insert to a separate grip material accesory that gets placed on top of the tray, stabilizing a bowl.







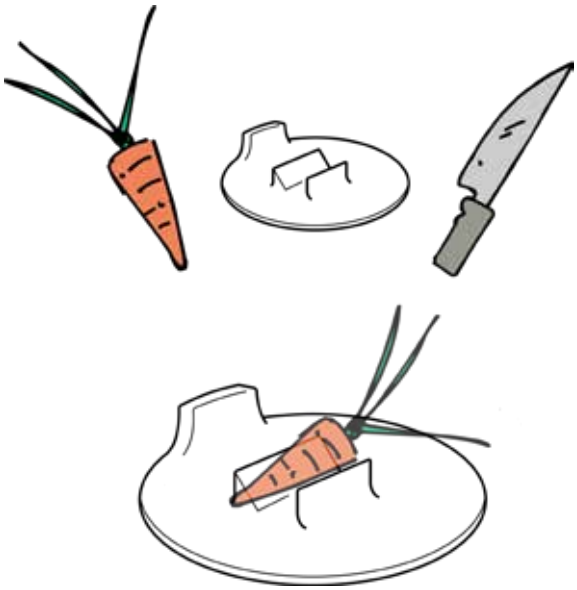



Designing Assistive Accessories:
Initial Idea - Slicing/Cutting Food Stabilizer

Food Prep Stabilization: Cutting/Slicing

Based on our observations, we also noticed/heard from parents that children had a hard time stabilizing a carrot or apple when cutting them up into pieces. We wanted to design an assisitve jig to help with cutting to include into our food cart. This would allow parents to feel more confident in their children when they are cutting up food.

Our initial idea of a removable insert would have increased the chance of leaks, and chance of losing the inserts.

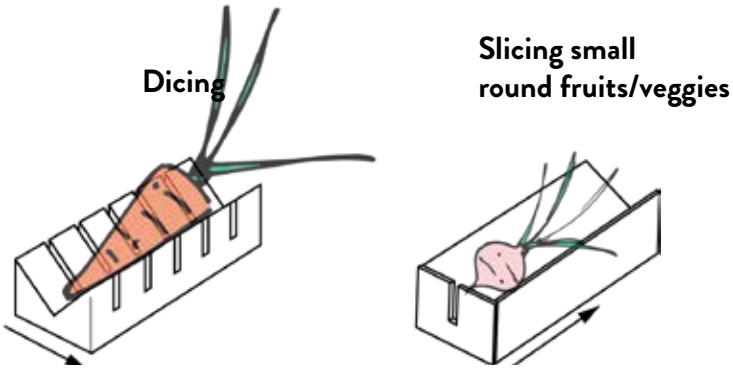


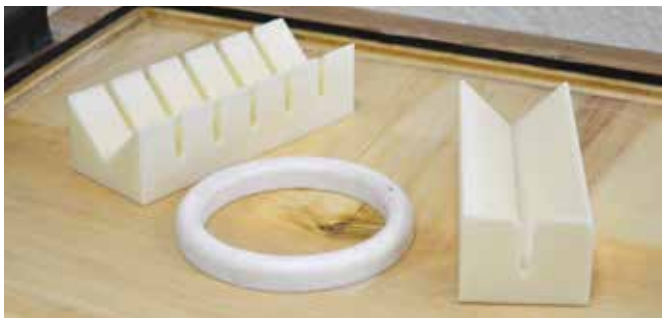
Drawbacks of Modular Tray Insert

- Modular inserts are more likely to be lost
- If the inserts are lost, the tray becomes useless because it creates an exposed hole
- Spill has to be cleared before releasing insert, otherwise food/liquid will drip through hole
- Lip to release insert creates a barrier when using the tray normally

Designing Assistive Accessories:
Revised Idea - Food Cutting Jigs are Add Ons

We revised our modular tray insert to a separate cutting food accessory that gets placed on top of the tray, stabilizing fruits and veggies.





Third Round of Prototyping

For the third prototype, we had to adjust the bin location. We placed the bins just underneath the tray, so that food could be easily pushed off of the tray and into the bins without getting all over the floor. In addition, we added handles to the bins to make them easy to remove. We also added two storage options, the bottom storage and the top storage tray so that utensils or bowls or the jigs could be stored with the cart. We also eliminated the bowl stabilizer hole in the middle of the tray, and opted for surface bowl jig so that the tray wouldn't be unusable if the bowl stabilizer cover were lost.

Bins were re-positioned right below the tray, the through-tray bowl stabilizer was removed, and two storage areas were added.

Prep Surface of Tray

- Surface of tray is slightly angled back to reduce spills from running to the front of the tray

Bins with Tray

- Bins rest inside pvc holder at the back of the cart
- Food is pushed off the back of the tray into the bins
- Bin handles are added for easier removal
- Storage tray can be lifted off of the side rails and removed for cleaning

Bottom Storage and Wheels

- Bottom storage has wall for stored food and items don't fall off when cart is pushed
- Cart has casters for easy transportation

Third Round of Prototyping: Adjustments

Adding Adjustments to our Previous Model

We realized that it was impossible to remove the bins without first removing the tray, so we changed the initial bin holder to rubber-covered pegs. This allowed the bins to be removed from the back while not being able to accidentally slip off. We also made the holes that attach the tray to the cart not go all the way through the top of the tray, so that food wouldn't get stuck in the holes. In addition, we made several different cutting jigs in order to help hold the food while children were cutting it.

The bin holder and tray attachment were modified, and several cutting jigs were made.

Bins + Bin Holder

- Bins are attached to frame by resting on pegs covered in silicone grips
- Bins can be removed without removing tray from cart frame

Tray Attachment

- Tray is secured to cart frame using pegs on the frame that rest inside holes on the tray

Testing Our Third Prototype

Changes made based on observations and feedback

What We Saw Needed to Change

After testing our third generation food prep cart, we made some new observations based on how the girls (5 and 7) interacted with the cart. Overall, what we saw gave us some great feedback moving forward with our design and allowed us to have user testing influence the direction of where our cart was going.

What we observed during testing gave us great feedback moving forward with our food prep cart design and features.

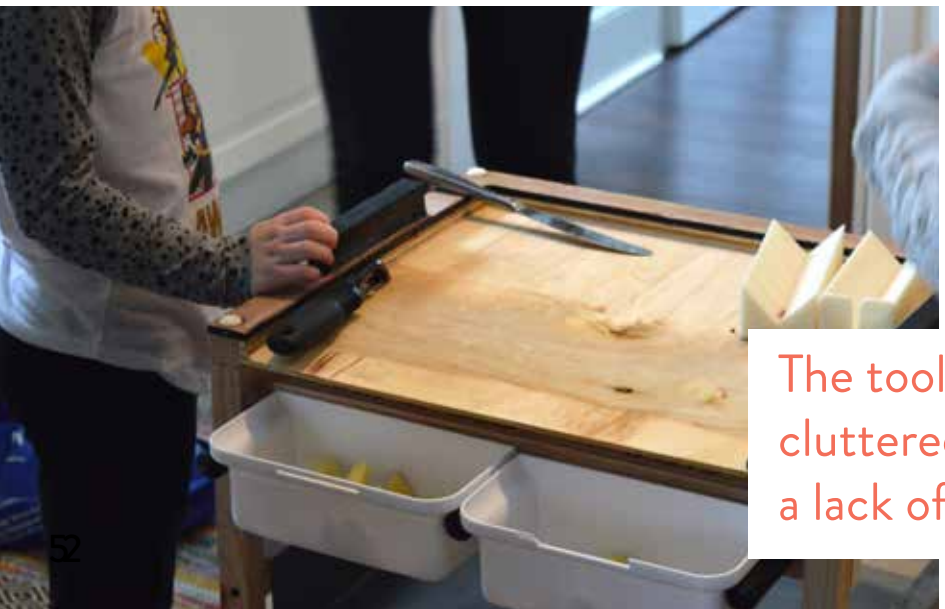
Dad helped peel, this gave us an idea for a peeling fruit stabilizer

7 y/o had a difficult time stabilizing the apple when she was trying to peel it

Pushing the scrap peels in the front collection bin worked just as planned

The horizontal slicing jig attracted the girls more than the vertical jig

After wiping the scraps into the bins, the girls needed to wipe their hands



The tools they were using got cluttered on the tray due to a lack of tool organization

The handles on the tray got in the way when the girls were cutting fruit

The food getting cut started to clutter on top of the tray's prep surface

We had to introduce the vertical slice jig so that the girls knew to use it

The girls worked together well, while one peeled the orange, the other was cutting banana

Both helped each other prep the oranges for slicing on the jig

The 7 y/o girl lined up the oranges to slice on both jigs at once

Oranges were easily placed into the food collection bin after getting sliced in half

The 7 y/o girl had a hard time stabilizing the cucumber while peeling because of it's rounded bottom + slippery surface

Mom helped peel, this also justified to implement a second smaller peeling jig

Peeler was placed on jig, need to provide a place for tools to go after being used

Both girls were using slicing jigs at the same time

Cucumber slices were a bit wide with the horizontal cutting jig

Cucumber slices were too wide, 7 y/o had to cut them in half again separately

Bowl jig sprayed with plasti-dip stabilized the mixing bowl well

Bins were removed and waste was dumped into the garbage can

Testing Our Third Prototype

Changes made based on observations and feedback

Feedback From the Family

After testing our third generation food prep cart, we received some great feedback from the family. They gave some suggestions on things they thought could be improved upon, and suggested adding some new features that they thought would be helpful.

After testing our cart, we recieved great feedback and suggestions from the mom and the girls.

“My suggestion would be to include a towel rack for them to wipe their hands”
-Joanna (mom)

“I wish there was a spot for the knives to go!”
- 7 y/o girl

“I like the orange and blue color way over the others.”
-Joanna (mom)

“When my girls were helping me make dinner the other day, they wished they had the cart to use!”

-Joanna

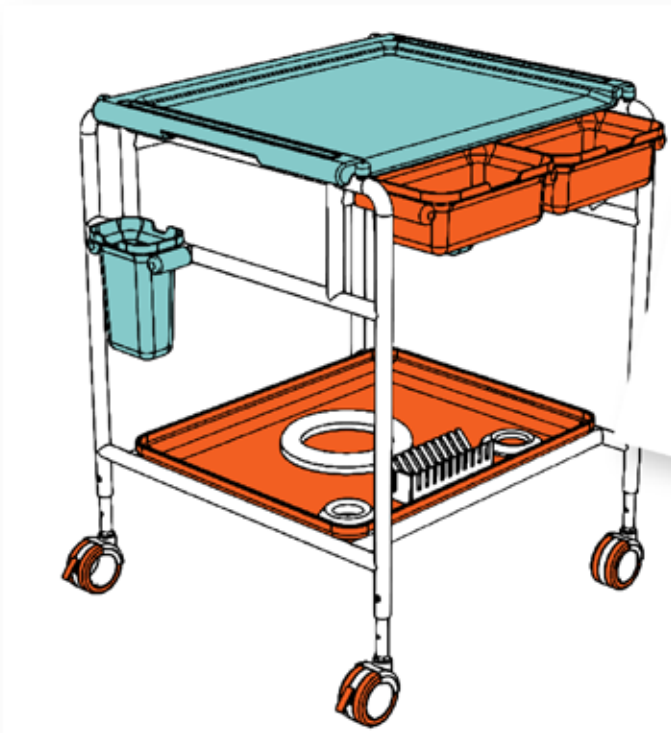
Color Research

Finding the Right Color way for Our Cart

We began with researching common color trends in children's bedrooms and toys. We looked to children's bedrooms because the colors that are found there are what parent's have the most influence on, and what parent's choose to match the rest of their house. Our food prep cart needed to not only be aesthetically pleasing to children, but also parents.

Our cart needed to be aesthetically pleasing and acceptable for children and parents.

We decided to choose orange, blue and white for our colorways, due to parent preference and commonality of colors in children bedrooms.



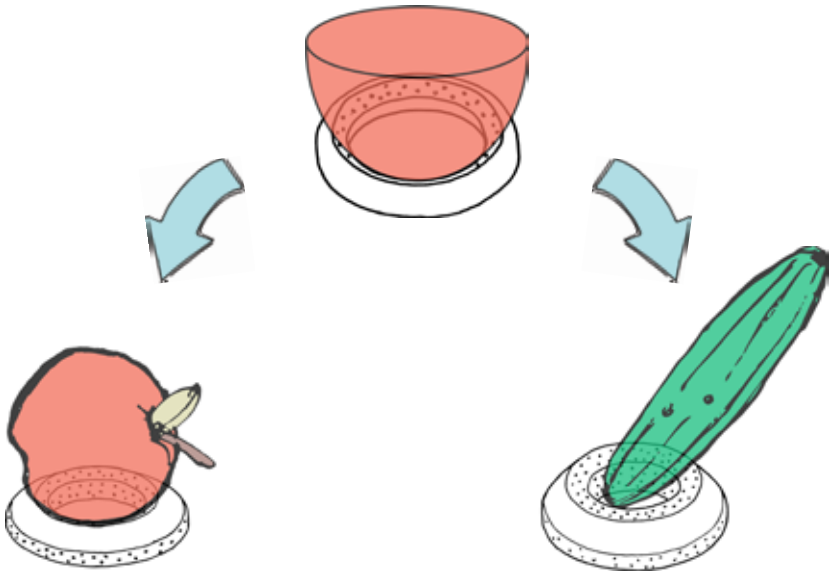
Designing Assistive Accessories:
Inspiration and Development of Peel Jigs

Stabilizing Fruits and Vegetables while Peeling

Based on our observations of the girls struggling to peel fruits and vegetables, we wanted to design a solution to assist them peeling.

We were inspired by our idea of a rubberized ring to stabilize a bowl. Since both fruits and veggies have a rounded bottom, we needed a "smaller bowl jig" to stabilize them.

We were inspired by our idea of a rubberized ring to stabilize a bowl to stabilize fruits and vegetables while peeling.




Bar Hoki Essentials

Designing Assistive Accessories: Testing Peel Jigs

Testing Our Peel Stabilizing Variations

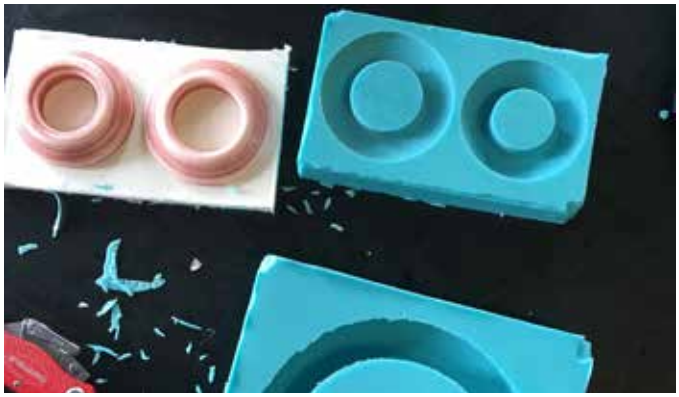
We 3-D printed many different variations of how the peel jigs should look. Some were taller with chamfered outside edges, and some were more low profile.
One of the parents of the kids that we tested on gave us some good suggestions regarding the shape of the peel jigs .

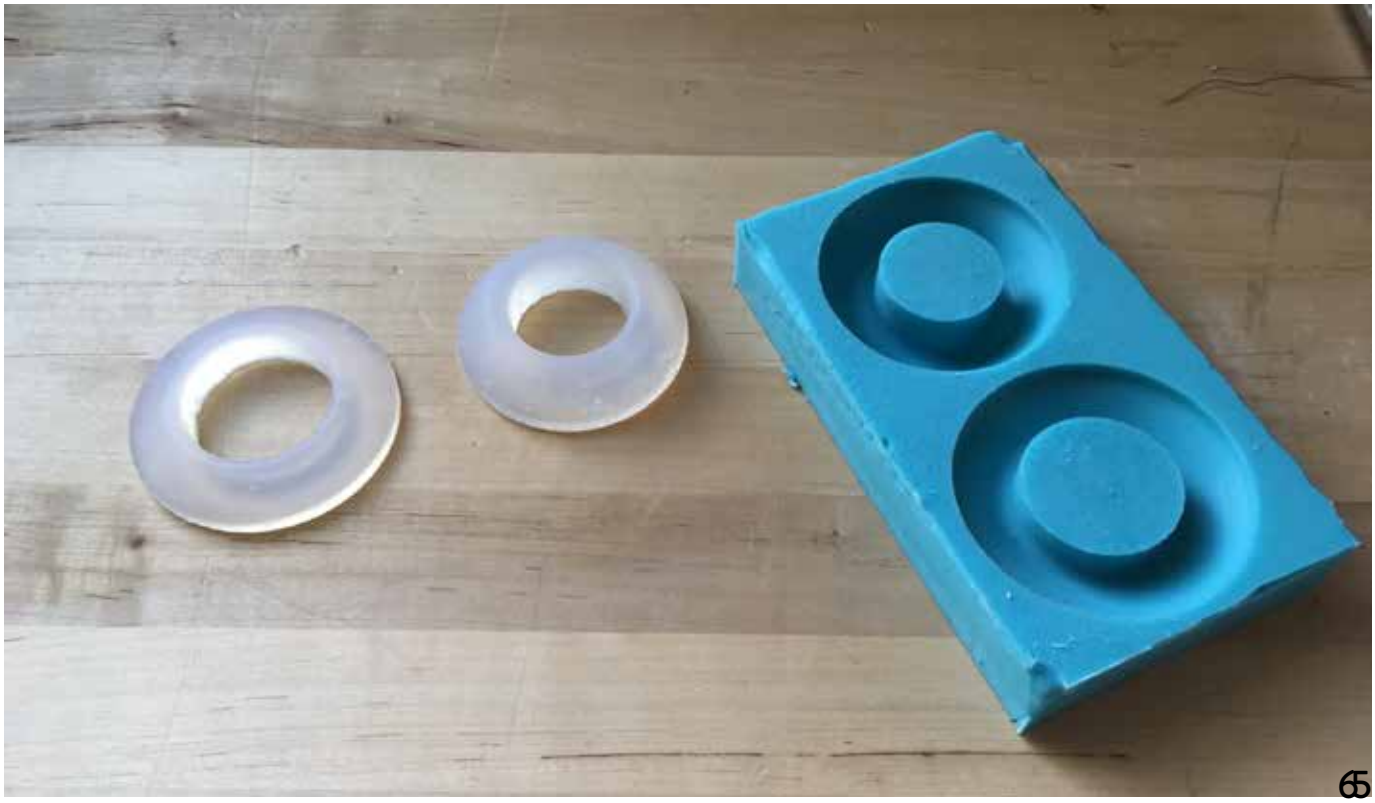
After feedback on the peel jig iterations, we began molding our final designs with silicone.

"Adding a chamfer on the tallest jig could help stabilize the jig better "
-Tony Guidice

"Maybe having wider base on the peel jigs may be better to stabilize the cucumber and apple "
-Tony Guidice

Designing Assistive Accessories:
Molding with Silicone





Fourth Round of Prototyping

Adding New Features and Adjusting Existing Ones

Our first 3 prototypes had a square, clunky frame, that didn't flow with the form of the features we were providing. We decided to prototype with tube stock framing. We found that the form structure that the PVC was providing looked better with our features. We moved forward with this design.

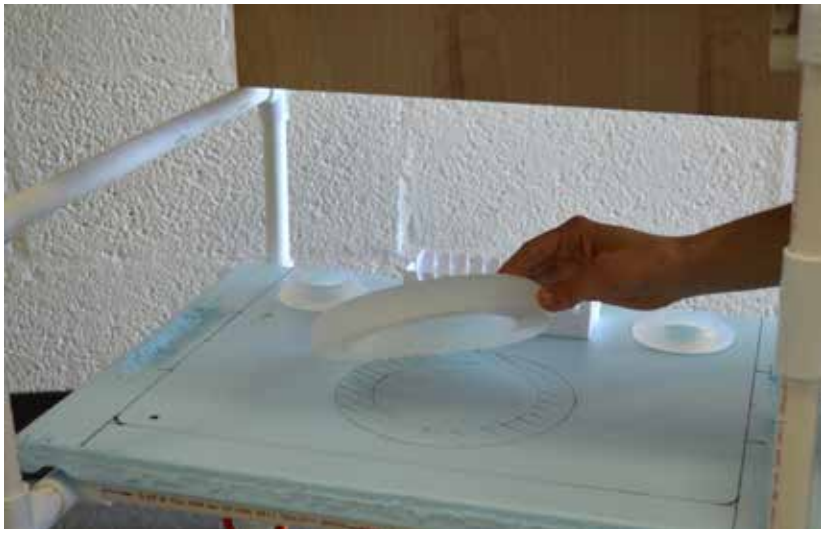
We decided to prototype with tube-stock for our frame of our cart and add new features based on our observational research.

Tray

- Tray includes channel on edge to have utensils lean on and catches food liquid on tools
- Low profile handles underneath tray so they don't get in the way of food preparation

Utensil Bins

- Side bins allow for storage of utensils and small tools to be stored so they don't clutter the top tray surface when not in use



Bottom Storage Bin

- Bottom storage bin creates a place where assistive tools go in a "puzzle-like" interaction. This encourages organization and limits space where other unrelated objects could get placed.

Testing Our Fourth Prototype

Validating Our New Features and Adjustments

We were able to test our new PVC frame model with our adjusted features and added new features. The problems we observed from our first round of tested were solved based on the changes we made on our previous third model.

Problems we observed from our first round of testing were solved from the changes we made.

Fruit Peel Jig

- We added a wider base and a chamfered edge to the fruit peel jig for more stabilization to the fruit and tray.
- The silicone material gripped well to the apple and tray.

Cucumber Peel Jig

- We added a wider base , chamfered edge, and more height to the peel jig for more stabilization to the cucumber and tray.
- The silicone material gripped well to the cucumber and tray.

Cutting Jig

- We reduced the spacing between the slots of the cutting jig, as well as combined both slicing and dicing jigs into one.

Final Design

Final Design

Implemented Design Criteria

Tray

Easy to clean

Contains Mess

Safe Environment

Mobility +
Height Adjustment

Encourages Organization

Work -Flow Oriented

Encourages Collaboration

Promotes Independence

Final Design

Implemented Design Criteria

Assistive Food Prep Tools

Easy to clean

Contains Mess

Safe Environment

Mobility +
Height Adjustment

Encourages Organization

Work -Flow Oriented

Encourages Collaboration

Promotes Independence

Final Design

Implemented Design Criteria

Food and Tool Bins

Easy to clean

Contains Mess

Safe Environment

Mobility +
Height Adjustment

Encourages Organization

Work -Flow Oriented

Encourages Collaboration

Promotes Independence

Final Design

Implemented Design Criteria

Bottom Assistive Tool Bin

Easy to clean

Contains Mess

Safe Environment

Mobility +
Height Adjustment

Encourages Organization

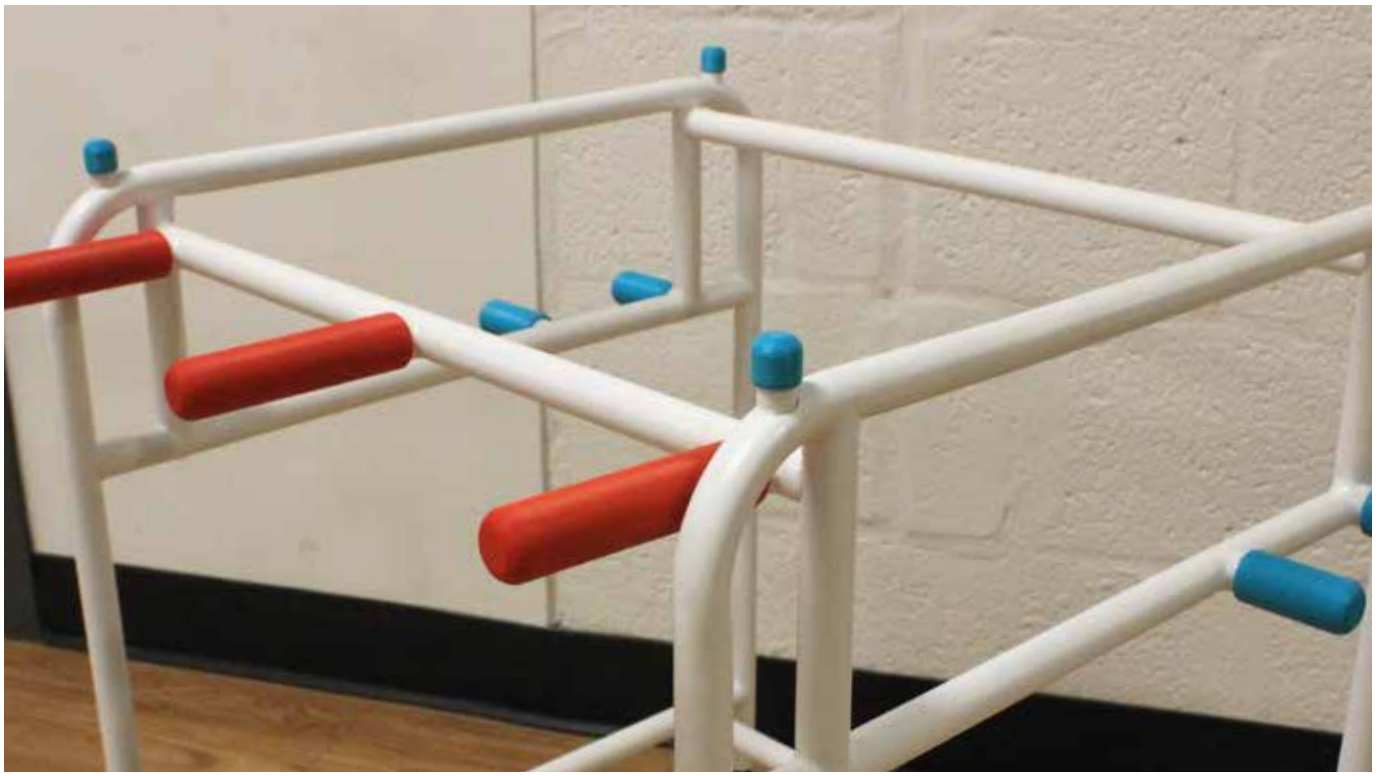
Work -Flow Oriented

Encourages Collaboration

Promotes Independence

Final Design

Implemented Design Criteria



Bin and Tray Grip Sleeves

Easy to clean

Contains Mess

Safe Environment

Mobility +
Height Adjustment

Encourages Organization

Work -Flow Oriented

Encourages Collaboration

Promotes Independence

Final Design

Implemented Design Criteria

Frame With Casters

Easy to clean

Contains Mess

Safe Environment

Mobility +
Height Adjustment

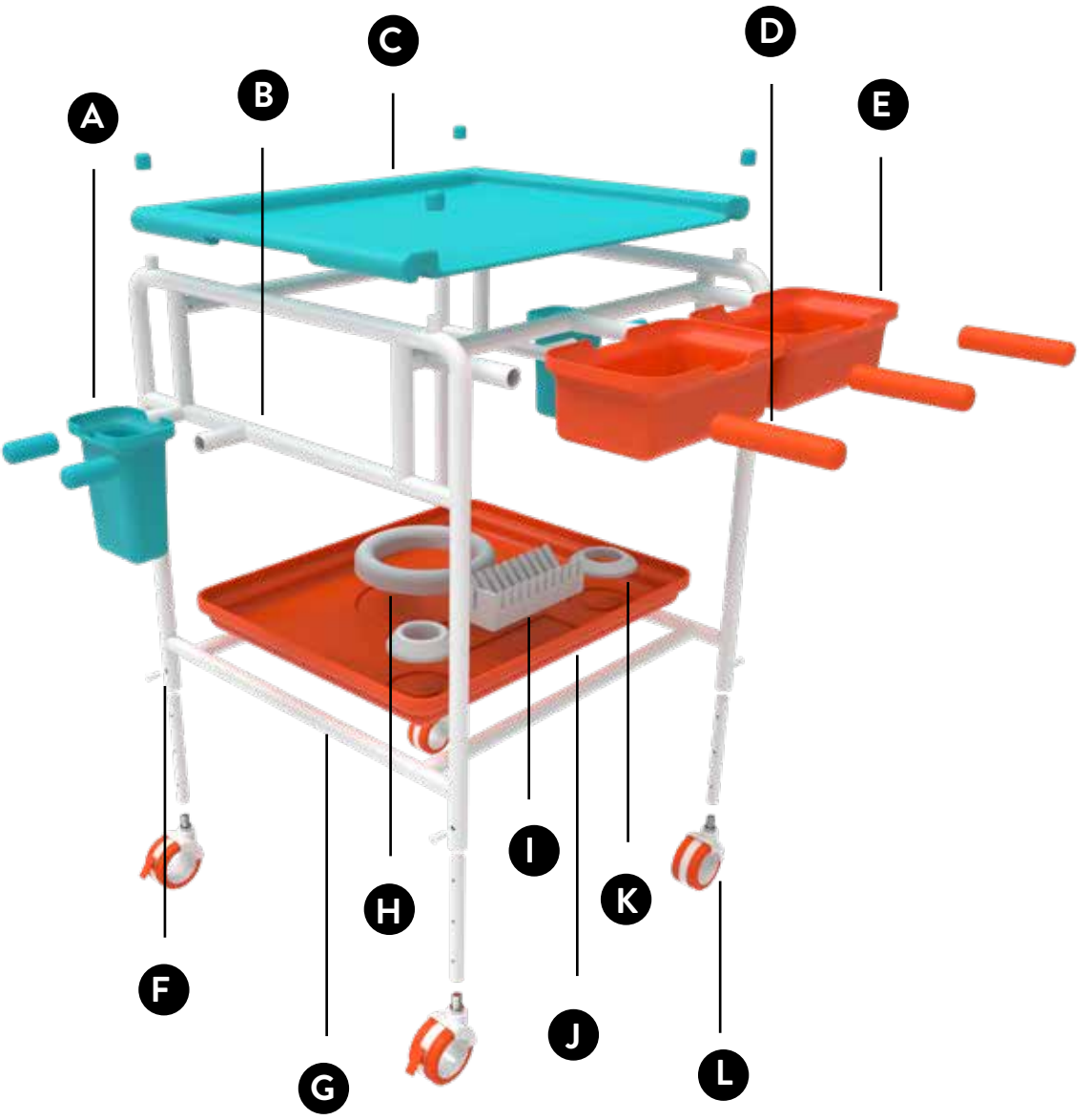
Encourages
Organization

Work -Flow Oriented

Encourages Collaboration

Promotes Independence

Features: Final Design



- **A** Utensil Bins
- **B** Handles/Towel Run
- **C** Food Prep Tray
- **D** Grip Sleeves
- **E** Food/Waste Bins
- **F** Screws
- **G** Cart Frame
- **H** Bowl Holder Jig
- **I** Cutting Jig
- **J** Jig Holder Bin
- **K** Fruit Peeling Jig
- **L** Locking Casters

Manufacturing: Materials

Injection Molded HDPE	Injection Molded TPV	Powder Coated STEEL
Prep Tray	Bin Grip Sleeves	Cart Frame
Food Collection Bins	Tray Grip Sleeves	
Utensil Bins	Peeling Jigs	
Bottom Organizer Bin	Bowl Stabilizer	
Cutting Jig		

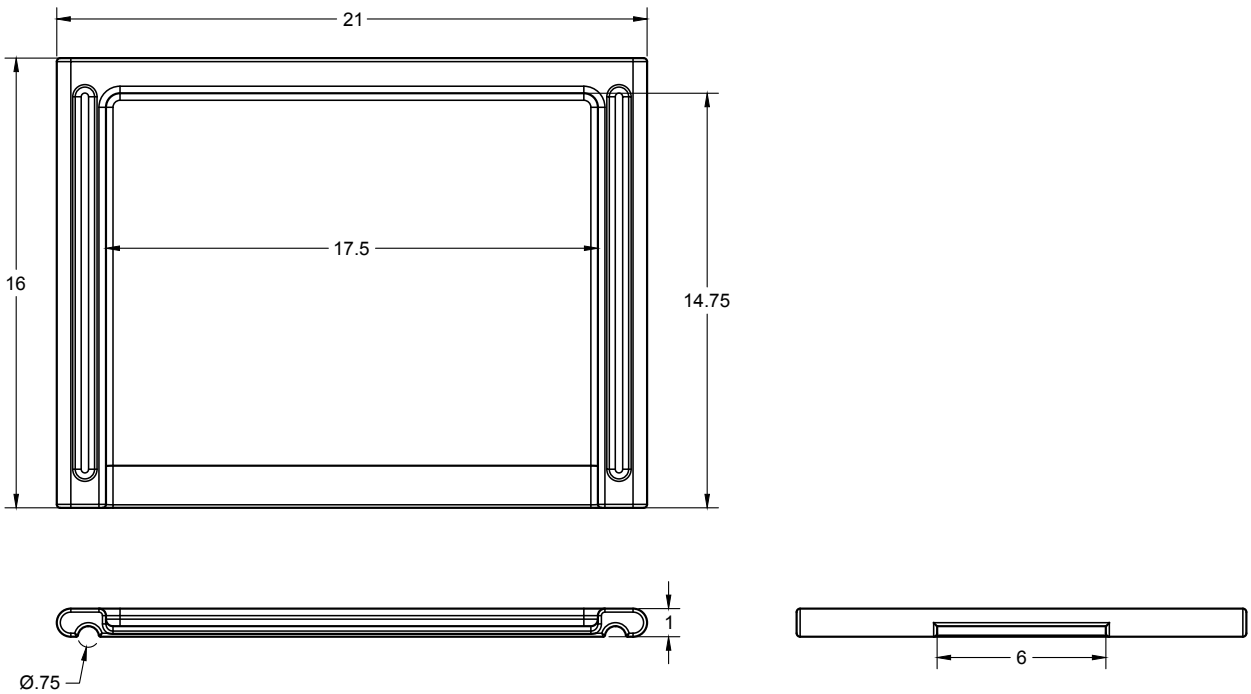
Features: Tray

Channels act as spoon rests, keeping utensil messes off of tray

Ramp helps when pushing food into bin

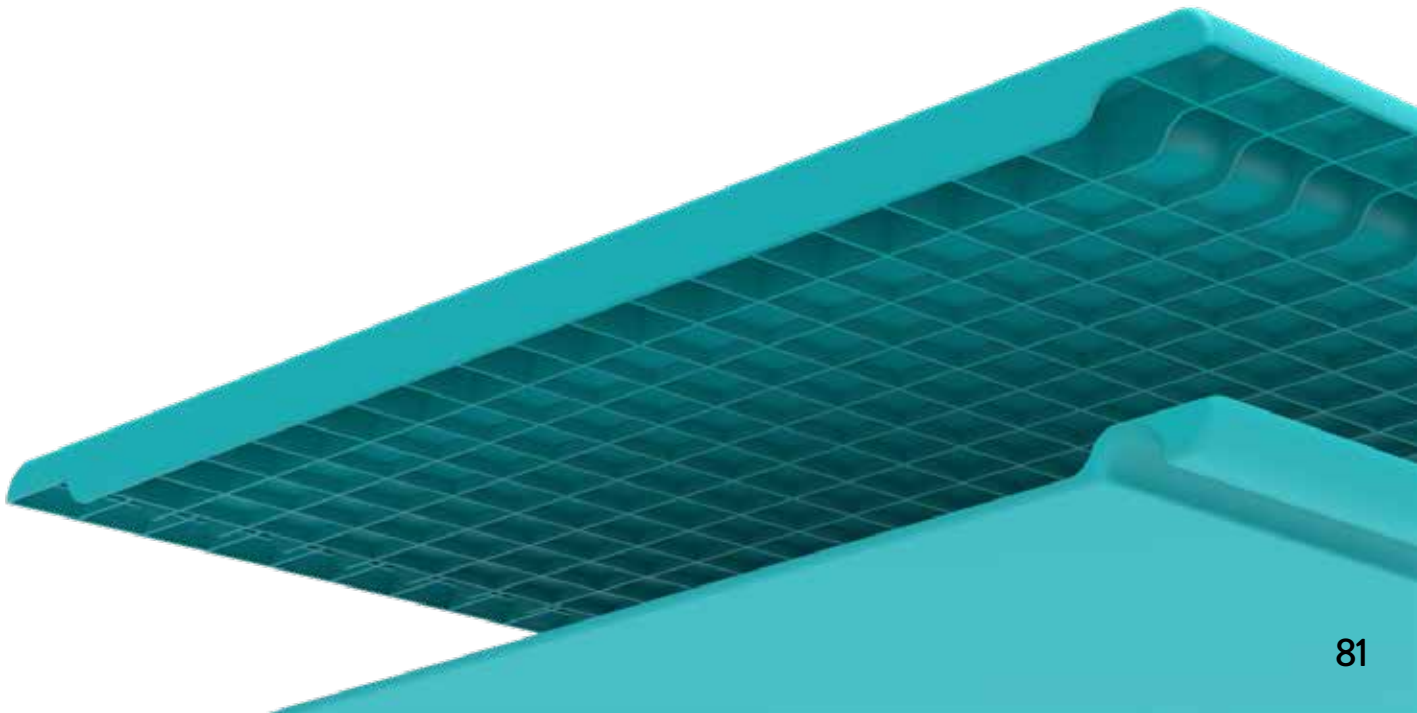
Side cutouts help tray to be easily picked up

Semi-circular channels keep tray locked into cart



Manufacturing: Tray

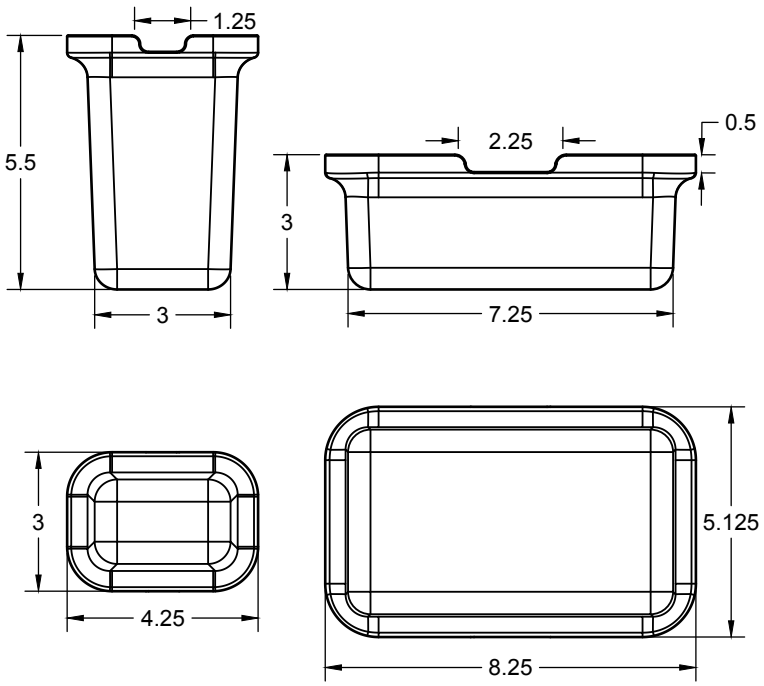
- Split to avoid undercuts
  - Ribs + draft angle
- Ultrasonically welded
- 2 mm wall thickness



Features: Organizational Bins

Front cutout helps bin to be easily removed from cart

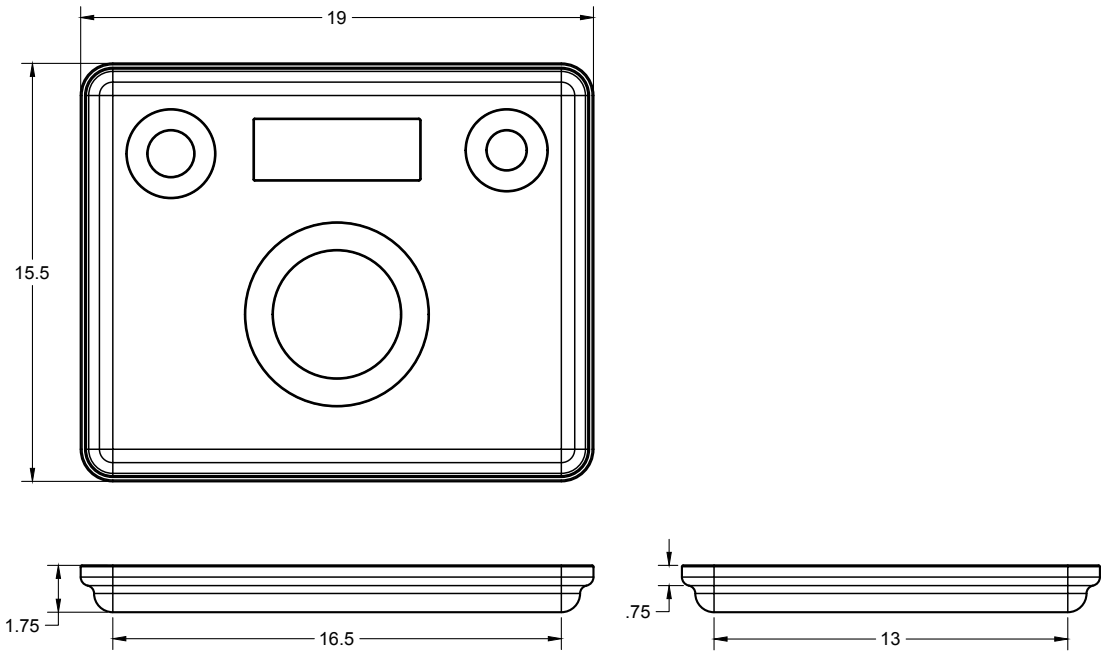
Lip around edge holds bins firmly to cart rails



Features: Bottom Assistive Tool Bin

Cutouts in bin show where to put each jig, ensuring that they don't get lost while making clean up more fun

Lip around edge allows bin to rest on top of bottom cart rail

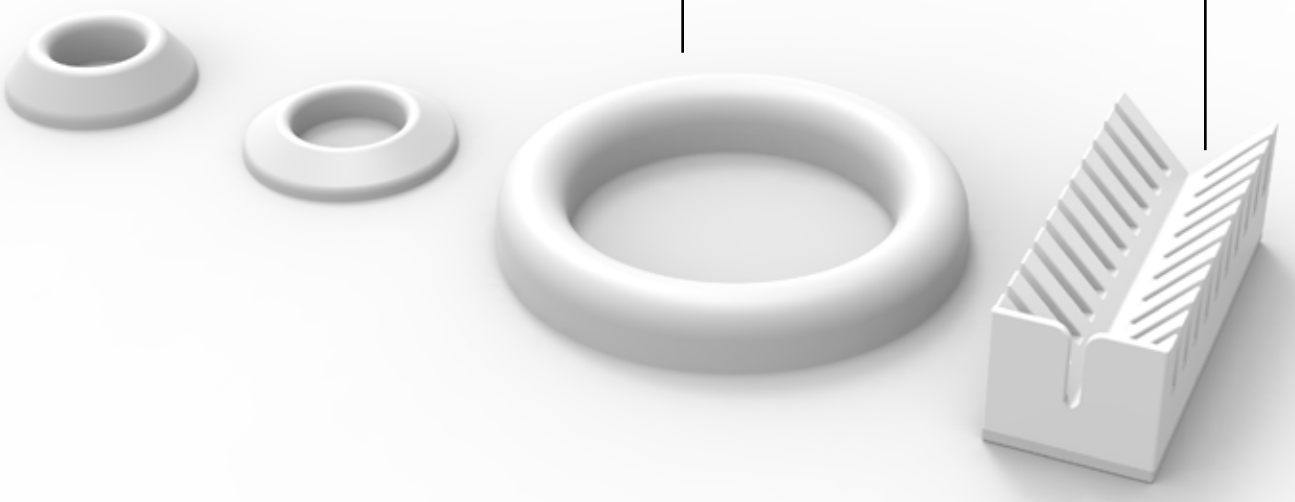


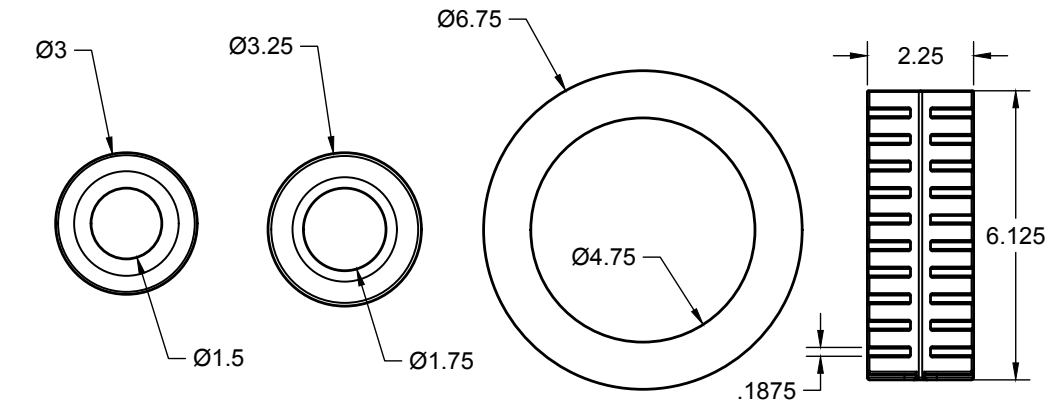
Features: Food Prep Jigs

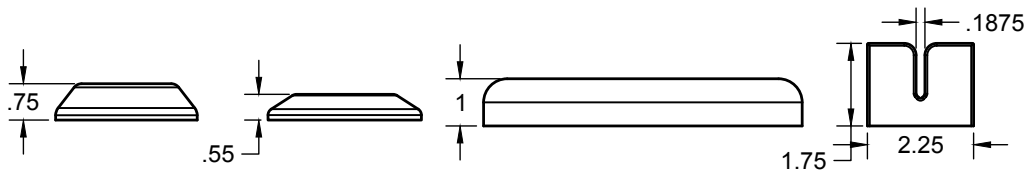
Fruit peeling jigs hold fruit in place so children can peel them more easily

Bowl holding jig prevents bowl from slipping so the task of stirring is made more easy

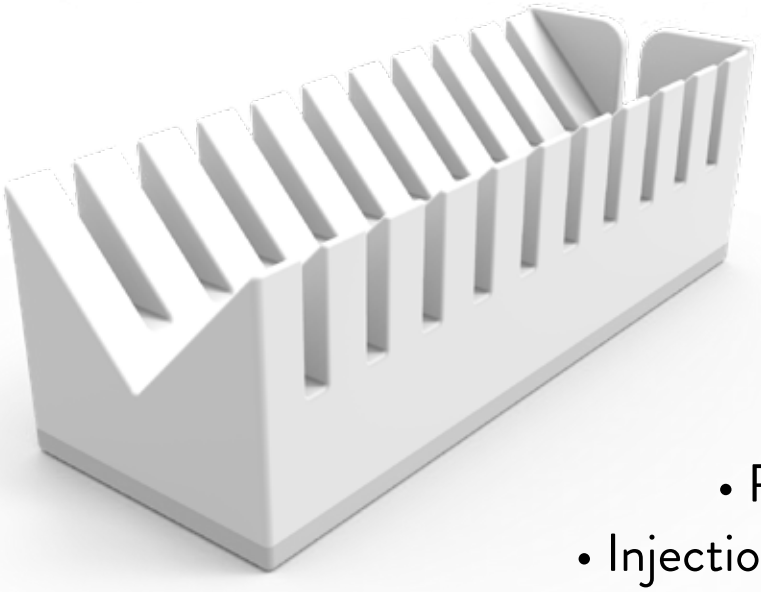
Cutting jig helps children safely cut up food into uniform pieces







Manufacturing: Food Prep Jigs

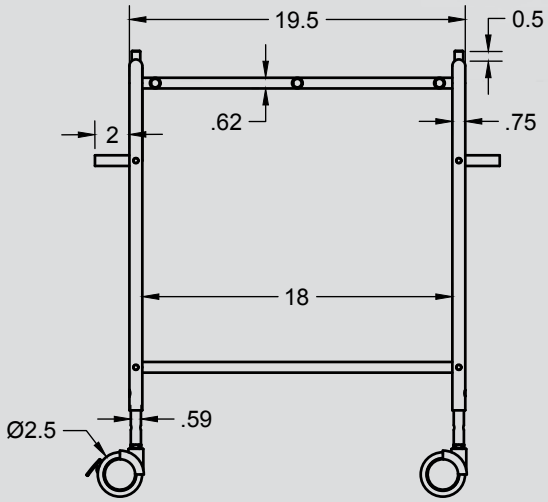


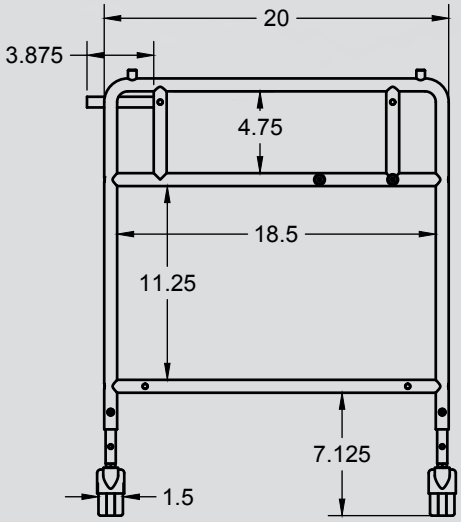
- Ribs + draft angle
- Injection molded snap-fit cover
- Overmolded TPV base
- 2 mm wall thickness

Features: Frame

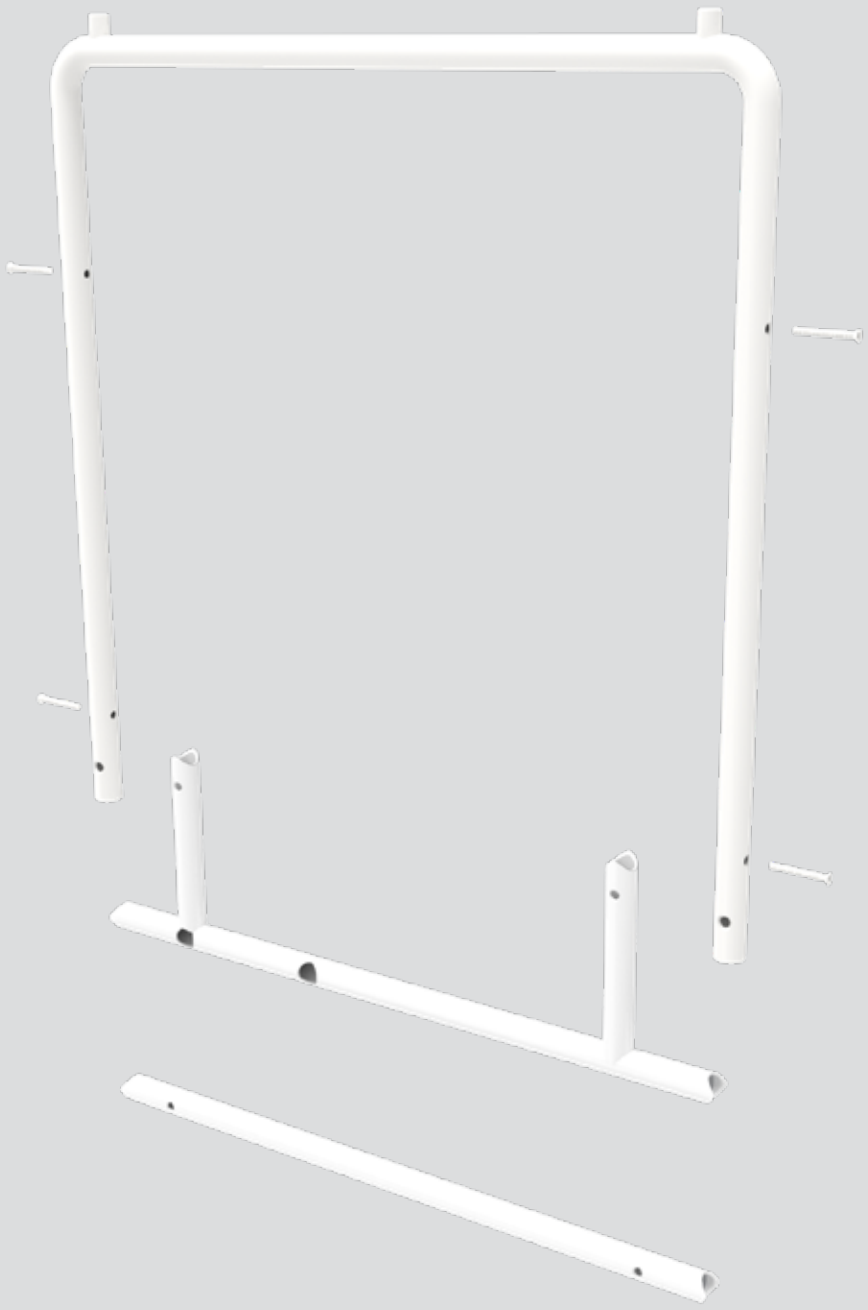
Sturdy, height-adjustable frame holds bins and tray

Santoprene sleeves keep tray and bins from slipping off of cart



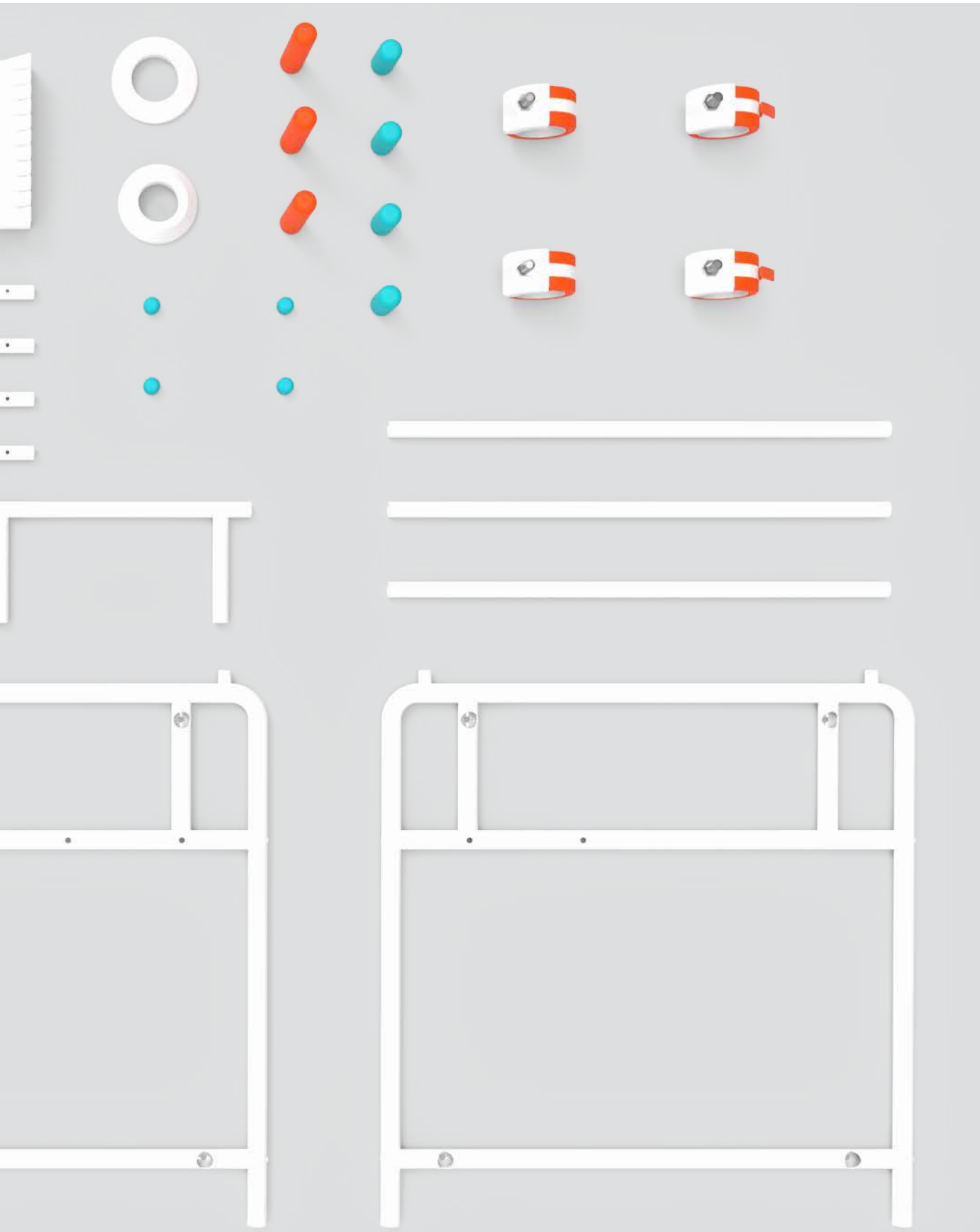


Manufacturing: Frame



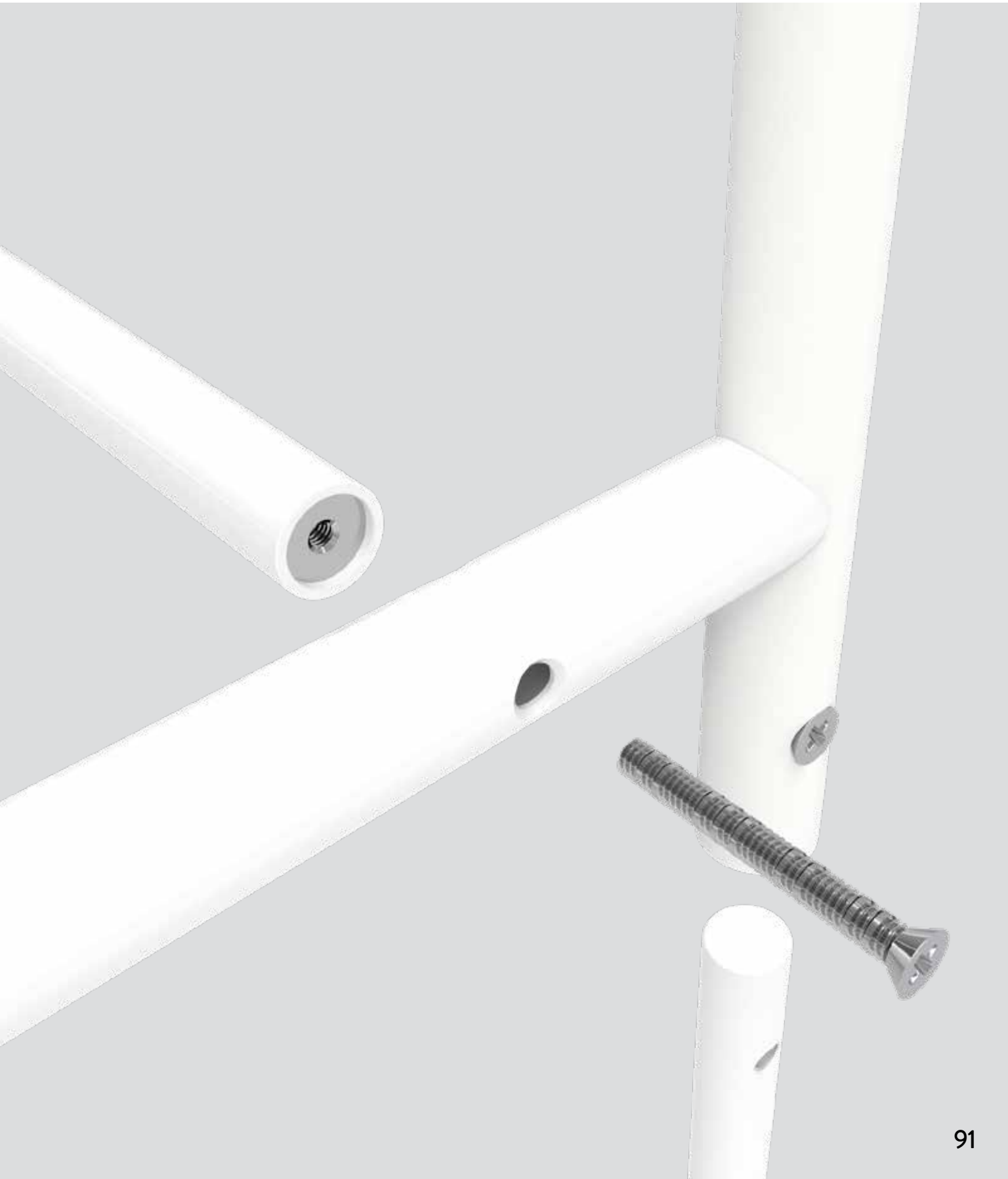
- Lasercut steel mechanical tubing
- Screws + threaded inserts
- Minimal welds

Manufacturing: Flat Pack Packaging



Manufacturing: RTA (Ready-To-Assemble) Frame

- 4 cross supports
- 2 cart frame sides
- Threaded inserts + screws



Features: RTA (Ready-To-Assemble) Casters

24” Height

26” Height

28” Height

- Casters thread into post
- Adjusts to 3 different heights

Material Cost Breakdown

Tray nub: 4 x $0.36 = $1.44
Utensil Nub: 4 x $0.61 = $2.44
Food waste bin nub: 3 x $0.69 = $2.07
Food Waste Bin: 2 x $1.78 = $3.56
Utensil bin: 2 x $1.55 = $3.01
Wheels: 4 x $1.11 = $4.44
Bowl holder: 1 x $1.42 = $1.42
Apple peel: 1 x $1.61 = $1.61
Cucumber Jig: 1 x $1.75 = $1.75
Cutting Jig: 1 x $2.09 = $2.09
Tray: 1 x $5.34 = $5.34
Bottom Bin 1 x $5.48= $5.48
Metal Tubing: 25 ft x $0.31/ft = $7.75
Hardware: 24 x $0.01 = $0.24

Factory Cost

Material Cost: $42.64
Labor (30%): $12.79
Total FC: $55.43

Landed Cost

Duty Tax (6.5%): $3.60
Total LC: $59.03

MSRP

3x Markup: $177.10
Wholesale: $88.55
Profit: $29.52

MSRP: $179.99