

# Project 3: Embodied Shopping

**Mantra : “Making Grocery Shopping Fun for Kids”**



**March 12, 2020 / Grocery Gang**

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## Meet the Team



**Sarah Deak** is a freshman majoring in User Experience Design at Purdue University with minors in Psychology and Forensic Sciences, as well as a certificate in Collaborative Leadership. Sarah was drawn to User Experience Design as a combination of psychology and technology. Some of her passions include music, animals, and criminology. She intends to develop specialized skills in research, visual design, and project management. With her interests in mind, she strives to go out in the world and make a difference in the lives of many. To connect with her, feel free to contact [deaks@purdue.edu](mailto:deaks@purdue.edu)



**Matthew Will** is a second semester Sophomore at Purdue University, and is in his first semester within the UX Design Program. He has an understanding of both design programs and design thinking from taking courses TECH 120 and CGT 118 his Freshman year. Matthew's strongest personal skills are his advanced writing ability and creative imagination. Some of his hobbies include running and playing video games, which has led him to an interest in entering the video game industry upon graduation. He is excited to continue his career as a student in User Experience, and you can reach him at [will10@purdue.edu](mailto:will10@purdue.edu)



**Jacqueline Marks** is a sophomore at Purdue University studying User Experience Design as well as minoring in Economics and Communications. Her passion is to one day design educational products for children with Autism and daily tools to improve the livelihood of the elderly. While she is not in the classroom she enjoys sketching, photography and sewing. On campus she is involved in Greek Intervarsity, an active member of the Alpha Eta chapter of Alpha Xi Delta and a member of Purdue User Experience Design. Jacqueline can be reached at [marks59@purdue.edu](mailto:marks59@purdue.edu).



**Anne Pivonka** is currently a freshman studying User Experience Design at Purdue University, working towards a minor in Psychology and a Collaborative Leadership Certificate. As a UX design major, she is currently focused on user research and interaction design. Her interest in UX design began when she had the opportunity to shadow the UX design team at a marketing firm in Cleveland, Ohio through a program at her high school. During this time, she realized this was the career that she wanted to pursue.

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## Project Overview

Amidst the rising trends of online shopping and near-instant delivery, the traditional conventions of the grocery store have remained unmoving. The shopping patterns in grocery stores often cause **shoppers to feel unfulfilled**. The goal for this project was to design an “**embodied**” experience for a certain group of users within a grocery store that mainly capitalizes upon the current mental model of the users. Ultimately, our group’s objective ended up focusing on tying the experience of visiting the grocery store to the users themselves, **limiting desire to use another method to buy groceries**.

## Deliverables

- Digital Documentation
- Low-Fidelity Prototypes
- Digital Presentation

## Problem Statement

7-8 year old children feel bored at the grocery store because their primary caregiver takes too long and finds it hard to find ways to help and needs a way to feel productive and welcome in the grocery store.

## Defining Embodiment (Secondary Research)

The first thing we needed to do as a team was define the term “embodiment.” We turned to previous research in the area to gain some insights, explained for each article in the paragraphs below.

### User Experience as Embodied Experience: Considerations for UX Designers by Lauren Bedal

This article by Bedal (2016) explained embodiment in terms of User Experience as a digital experience within which **engagement** of the user is heightened or exploited, such as movement or senses. This prompted us to focus on the **physical environment** of a grocery store-- considering the ways the **sensory** environment can help or hinder the experience.

### Embodied Interaction: Exploring the Foundations of a New Approach to HCI by Paul Dourish

The article by Dourish (1999) was crucial in helping us define embodiment. He defines embodiment as “the property of being **manifest in and as a part** of the world” (p. 8). He goes on to say that embodiment “denotes not physical reality but **participative status**”. Embodiment in terms of groceries, to us, means **enhancing the experience** that is shopping by creating a more enjoyable

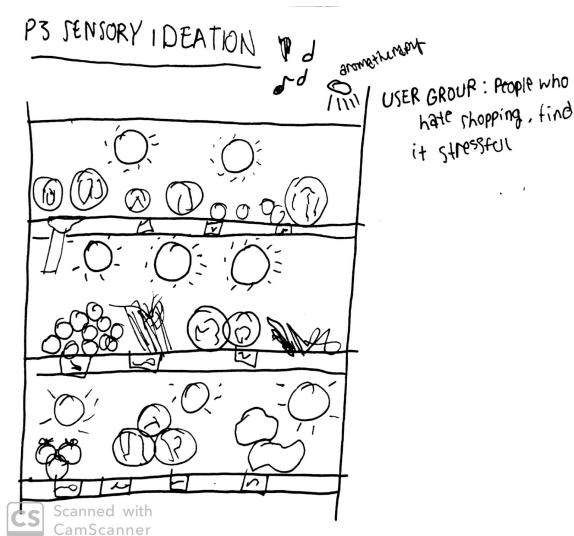
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**participatory experience.** This article recognizes that embodiment is less about the physical area and more about user engagement and enjoyment, which allowed us to expand our problem space.

## Problem Scoping- Overview

*Sensory ---> mothers ---> caregivers w/ children ---> children*

As the nature of this project was quite broad, a lot of our time was spent on scoping down our problem space and user group. We began with an interest in the **sensory environment** within which patrons in a grocery store shop. Insights regarding senses in the grocery store in Aylott & Mitchell (1998), demonstrated to us physical stressors such as aisle size, crowding, smell, and lighting.



This idea was created to provide a more relaxing sensory experience in the grocery store. Grocery stores can currently be loud and overstimulating.

Through sensory research, we found research on **what could calm people and why**. This led us to the idea of a self care grocery store involving light therapy, aromatherapy, and quiet music.

We later realized, these could cause sensory overload and not actually solve the problem in why mothers were stressed.

However, we realized that we needed to narrow our user group to tackle this exact problem space, so we narrowed to **alleviating stress on mothers** based on our observations. This led us away from environmental stress after doing some interviews explained below. When identifying what **stressors** are for a mother while shopping, we began to realize that a **mother is happiest when their child is happy**, and therefore it was the children causing not only mothers, but **all caregivers** stress. This led to some sketches removing the children from the caregiver while shopping, as shown below.



Another form of ideation was giving kids an activity to complete, away from the caregiver, so that the caregiver had time to shop.

This is a kids cooking kitchen where children can learn to bake.

We ended up rejecting this idea because of high cost, liability issues, and how hard it was to upkeep.

However, we now realized that our focus was on **two user groups**. We believed this would spread us too thin in trying to solve too many problems, so based on our second round of interviews as well as our group critique, we centered our problem space on **children**. The last round of interviews with children influenced our final decisions on our problem spaces and design goals, and is illustrated by our problem statement.

### Why 7-8 Year Olds?

- Beginning of the **concrete operational stage**.
- Through observations, we noticed this age range was not sitting in the cart comfortably, were asking for items, and generally looked **bored**.
- This was the age range of kids that we had available for an interview and thought this is where we could get insightful data. (Vygotsky & Webb, 2013)

### Relevant Information in This Stage of Development

- Thinking in this stage is still very **concrete**.
- **Decentration:** Kids are able to focus on many aspects of a problem

## Primary Research

### Observations

#### Observation Goals

- Observe the general **shopping patterns** of patrons
- Determine possible **user group** and **problem space**
- Gather **insights** and **information** in order to ideate

**Early on** in the process, **each of us went to Walmart** at different times and different days to observe the shopping behaviors of the present patrons. We took **fieldnotes** and **headnotes** of almost everything we observed, and used these observations to influence our choice of problem space and overall ideation. See Appendix for full observation notes

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## Key Takeaways

- Children often get distracted and hyper while at the grocery store
- Children become another responsibility for caregivers to worry about during the shopping experience
- This causes stress and tension on both ends of the relationship



**To recap defining our problem space:** After our observations, we initially decided we were interested in the stress that the grocery store can cause, and we began to wonder if it could be a sensory issue, such as Aylott & Mitchell (1998) demonstrate in their text. However, after considering possible user groups, we then realized we were more interested in the way children and caregivers interact. This is also something that we observed, and we knew that children are a major pain point in shopping. We began to delve in by conducting interviews with both caregivers and children.

## Task Flow Diagram

### Goals:

- Recognize pain points in grocery shopping
- Visualize the shopping experience

Based on our observations in walmart, we decided to make a task flow diagram for both caregivers and their children. The **goal of the diagram**, as stated, was mainly **to recognize the biggest pain points** among the interactions of caregivers and children to identify what emotion in children we would focus on.

The pink sticky notes are identified pain points, and the area of the child task analysis that mentions boredom became our focus.

## Task analysis- Children

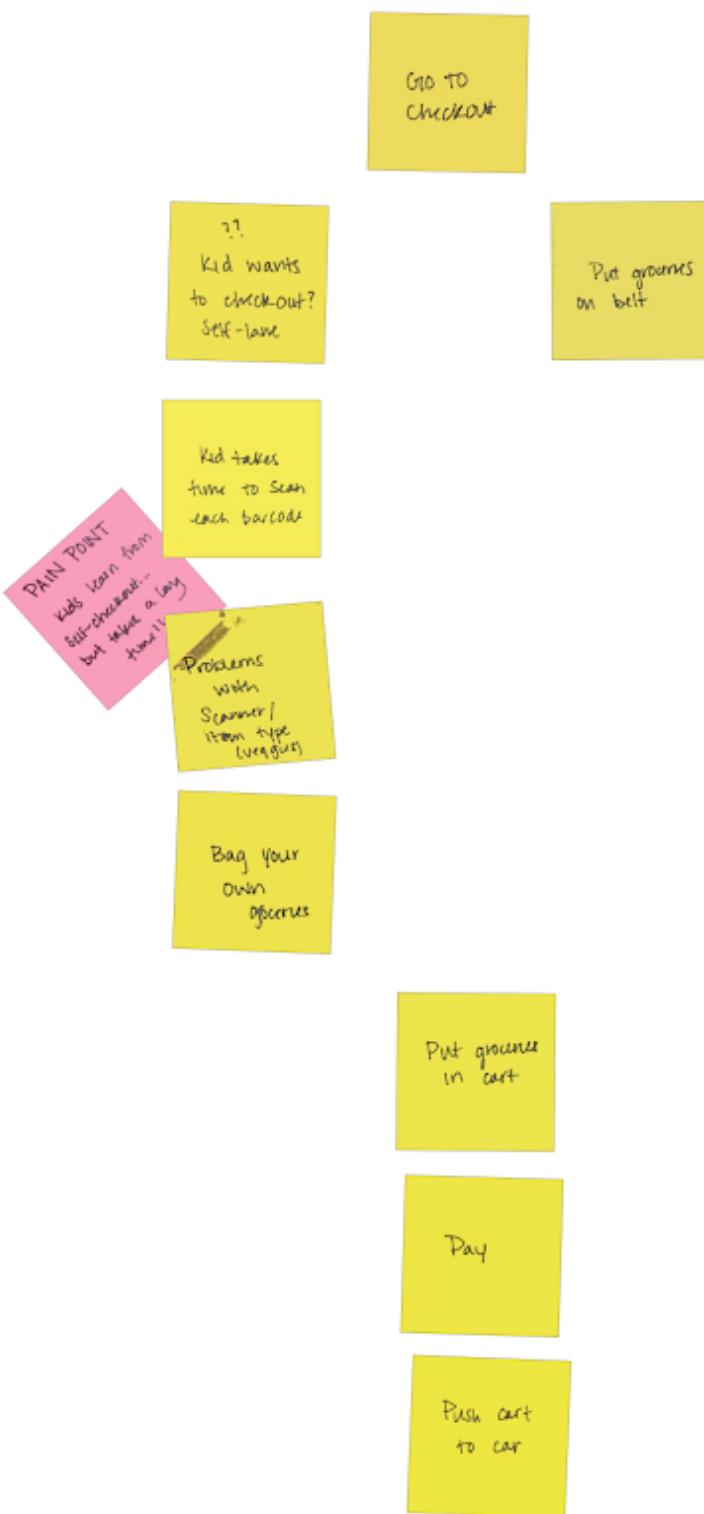


## Task Analysis- Caregivers



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## Task Analysis- Caregivers (continued)



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## Interviews

We initially began by **interviewing** several **caregivers**, and then we conducted interviews with two **children** for a total of seven interviews.

### Goals

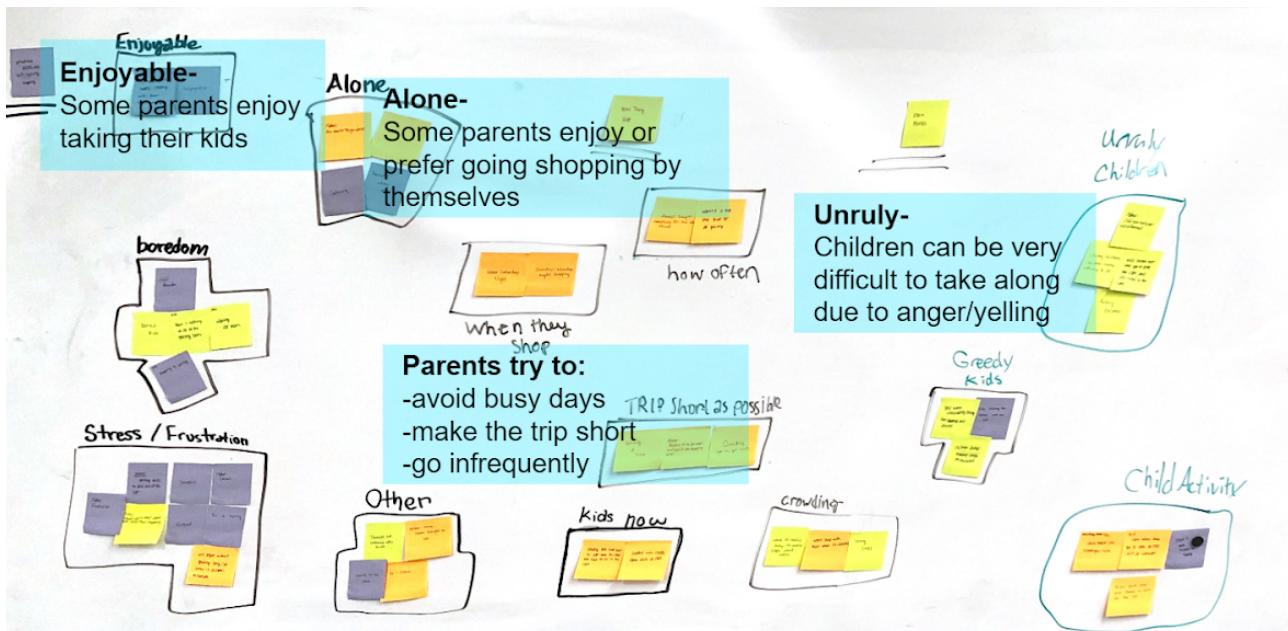
- *Understand* the struggles of caregivers who shop with their children.
- Pinpoint shopping patterns (how long and how often)
- Define emotions associated with shopping and likes/dislikes
- *Identify* if whether or not online shopping has been used prior
- Discover how caregivers currently manage the stressors of navigating a grocery store with children

Our initial round of interviews consisted of us **reaching out to caregivers** who we knew had younger children and ask them about their emotions and actions associated with the grocery shopping experience. We then decided to **narrow our problem space** to make the **experience** of shopping **more embodied for children**, so **we interviewed the children** themselves that were in our user group's specific age range to develop insights on how they personally feel about going to the grocery store. All of these interviews gave us some clear takeaways within our specific problem space. See *Appendix* for full interview protocol.

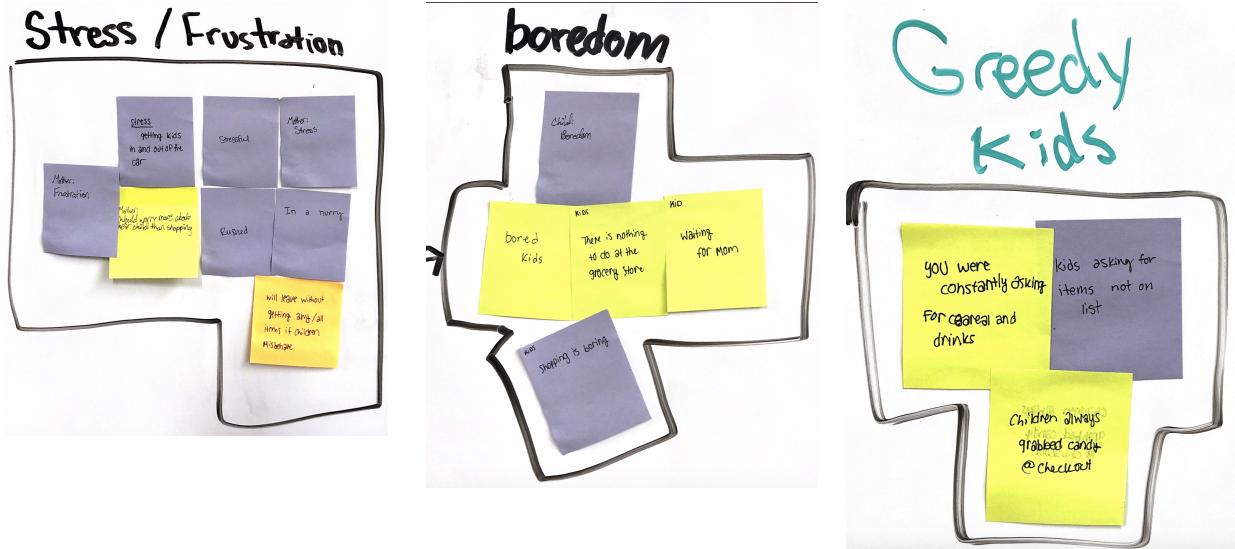
### Takeaways

- Caregivers become happy when their **child is happy**
- Some caregivers just prefer leaving their child at home
- **Boredom** leads children to acting up
- We determined children need something to stimulate themselves and interact with to have an embodied experience

## Affinity Diagramming

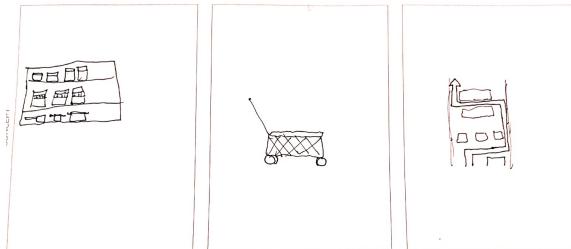


After conducting our interviews our team utilized **affinity diagramming** to identify common themes within our interviews and **pain points** in order to better understand the needs of customers. The purple sticky notes represent emotions caretakers associate with grocery shopping, orange is how people shop and green signifies reasons why children misbehave. Our **biggest group** among the three categories is found in the bottom left corner titled '**stress / frustration**'.



## Initial Sketches

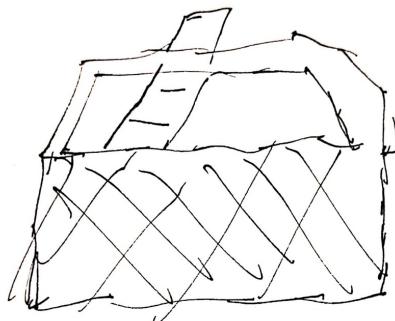
Our initial sketches reflect our **starting points and ideas** after reading the project brief. These are our designs that we **individually** had before discussing a problem scope.



Left : **Organizing shelves based on categories** of need for certain items, such as everything for sandwiches located in a single section.

Middle : A cart designed to be pulled instead of pushed so that it is easier for people of all height and age to use a cart.

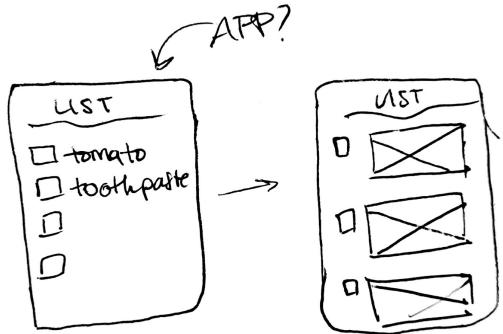
Right : A map designed to **help a shopper know where they need to go** to get the items on their list.



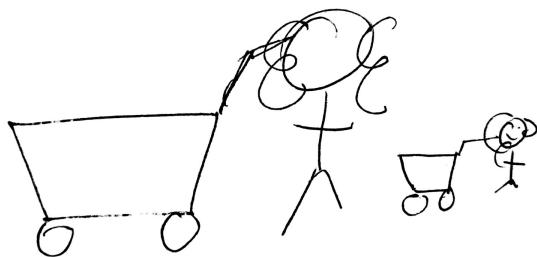
This sketch demonstrates our team trying to **reinvent the shopping cart** to a smaller scale.



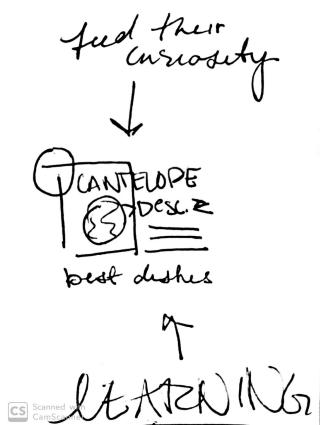
Left is a sketch of items being placed on the **shelves in categories** of both similarity but also likeness.



One of our ideas was to create an idea app where a **mom can add items to a list** and there is a child setting. In the child setting there would be **images associated with the items**. In our identified group kids are still widening their vocabulary and this would give them an opportunity to learn.



While small carts for children already exist, during this sketch our team was trying to determine how they could be altered to be **more interactive with kids**.



Left is a **card deck with fruits** for kids to better understand products, similar to the idea above with the app, this would be a physical card.

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## Personas



pexels.com

### Nate

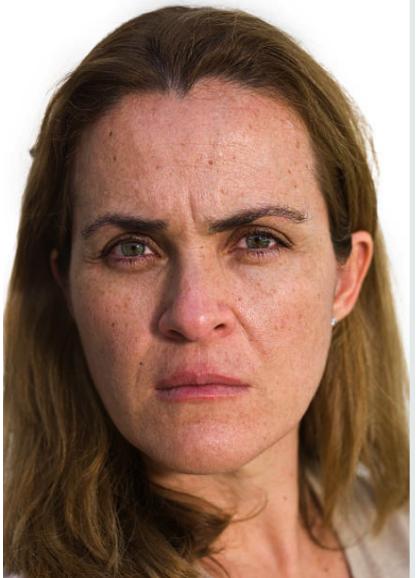
#### Pain Points:

- Has to join mother when going to the grocery store
- Finds the shopping experience too long and too boring

#### Goals:

- Have fun and always try to be entertained
- Avoid the boring experiences of shopping

Nate is a **seven year old boy** who attends school from 8am to 3pm. He is in second grade and enjoys playing with legos and action figures. He also really *enjoys playing soccer* and going to the park. He easily entertained and starting to develop his own sense of humor. One of the only times that **he is not entertained** is when **he must go to the grocery** store with his mom.



pexels.com

### Nancy

#### Goals:

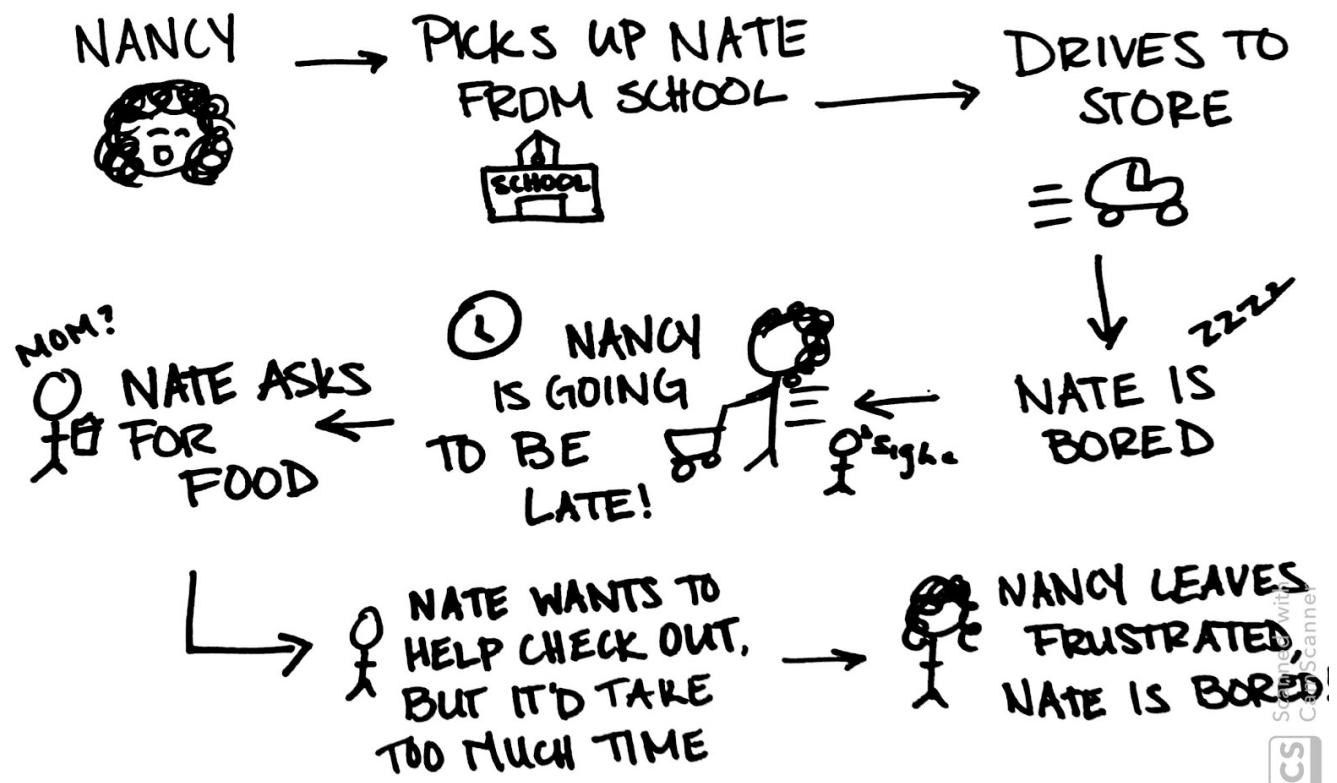
- Make her child happy
- Get the shopping experience done like all of her other responsibilities

#### Pain Points:

- Has no other choice but to bring her child with her to grocery store
- Loves her child but is annoyed by him when he gets fussy and bored

Nancy is 38 years old. She lives comfortably with her husband and child, Nate, in Greensboro, NC. Both her and her husband work. Because of this, **she takes Nate grocery shopping with her on the weekends**. She is a very caring mother and rarely ever raises her temper. She enjoys spending time with Nate and supporting him at his soccer games. The only thing that she doesn't like doing with Nate is taking him grocery shopping. **He always complains** about how she is taking too long, tries to drive the cart recklessly, and is **always repeatedly asking to buy candy** at the checkout.

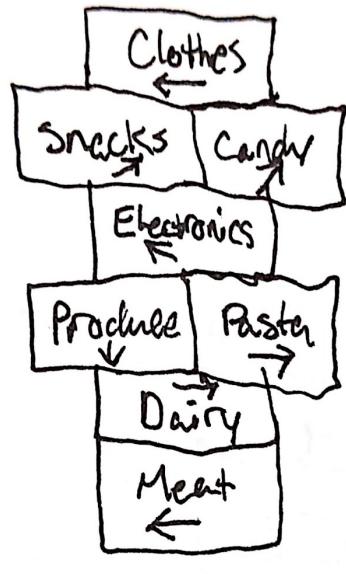
## Scenario



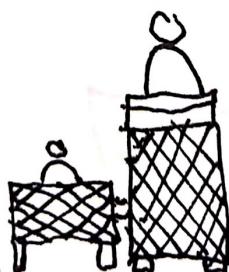
Nancy is a working mom who works part-time to help provide for her family. She has just picked up her youngest son, Nate, who is in third grade up from school. It is **2:45 on a Thursday afternoon** and she needs to go to the grocery store to get ingredients for dinner tonight. In about a little over an hour she has an appointment and figures that now is her best opportunity to go grocery shopping. Nate is in the back seat **tired** and **wanting to go home**, however Nancy does not feel Nate is old enough to stay home alone. Together they go to the grocery store and Nate quickly becomes **bored**. He begins to **drag his feet, falling significantly behind**. Overtime Nate grows more impatient, frustrated and overall bored. He really wants to leave. Nancy is annoyed with **Nate's complaining** and the constant request for foods not on her list. At the end of the trip, Nancy leaves the store **extremely frustrated** at herself & Nate.

## Ideation Sketching

After scoping down and defining our problem space our team decided to do another round of sketching that represented our problem space more closely.



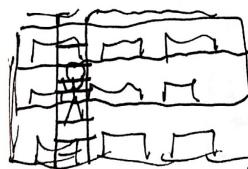
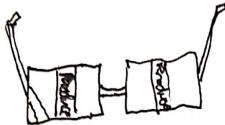
As a way to bring the playground inside, this top left sketch includes the **game, hopscotch** and it doubles as **directions for shoppers**. The game will keep children entertained while their caretakers shop as well as provide direction for shoppers struggling to find what they need.



Left is a sketch of a cart with a side cart for children to sit in. Although the cart might be on the wider side, this idea **creates a space for children who tend to wander off** but are too big to sit in the typical seat in the cart meant for young children.



Scanned with  
CamScanner



Scanned with  
CamScanner

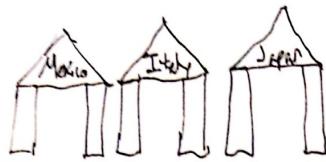
Top left is a sketch of a cart with **a tablet or screen on the side of the cart to keep kids walking** along the cart something to pay attention to.

Similar to the google glasses, the second design is **a pair of AR glasses** with the ability to show a shopper the most efficient way to shop. Through the lense, they would show the path from one area to the next where an item could be found.

Third is a sketch of **floor tiles** that identify one's **route to the next item**. This design would be interactive and a great distraction for kids.

Children sometimes want to help their caregivers get items off the shelves but are **too short** to be able to reach the items. The fourth sketch embodies this struggle and solves this problem by adding a ladder to shelves.

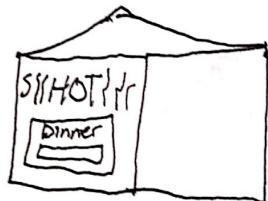
The bottom is a sketch that represents stores as being **one giant vending machine**. The items that have been selected would light up before being selected by the machine.



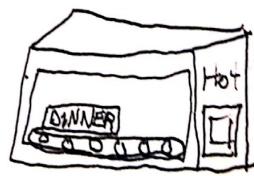
In stores ethnic food is often **spread all over the store**, instead of being in one central location. Left is a sketch of foods being **sorted** by where the food is traditionally from so it is easier for customers to find what they are looking for.



The second sketch is a **store mascot** that hands out free samples. Everyone loves free food and the mascot represents the store in a positive light.

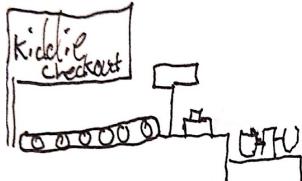


Both the fourth and fifth sketches go together, the fifth being an inside sketch of the fourth. This item would be **in the bakery or food area** where food can be placed on a conveyor belt and **comes out hot and ready to eat**.

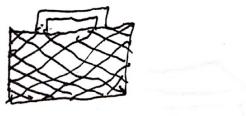




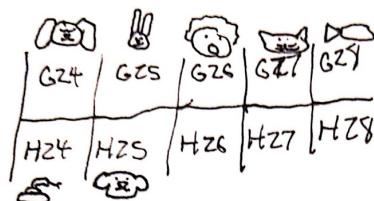
Top is a grocery list that **keeps track of what a shopper needs** like a traditional list but this also tells a user where the items are in the store.



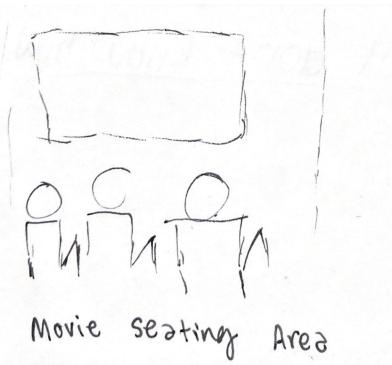
The second sketch demonstrates what it would look like to have a **checkout for kids**. It would be a great way to distract the kids while they are bored and really wanting to get out of the store.



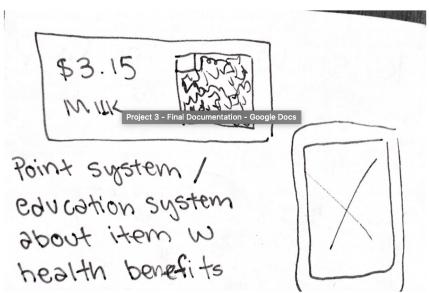
The basket is a **smaller size** that is meant for children to be able to **comfortably carry**. Sometimes the normal sized baskets in the store are too bulky and large for children to carry which leaves children with nothing to do. This way they have the ability to help their parents out.



The sketch to the left represents our idea of **having fun icons on the store floors** for kids to look at while in the store.

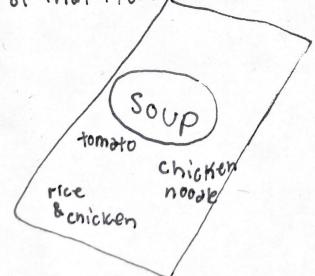


Some of the best parts of being a child were when your parents went about their business and you got to sit somewhere and watch a movie. The sketch on the left expresses a **seating area meant for kids to watch a movie**.

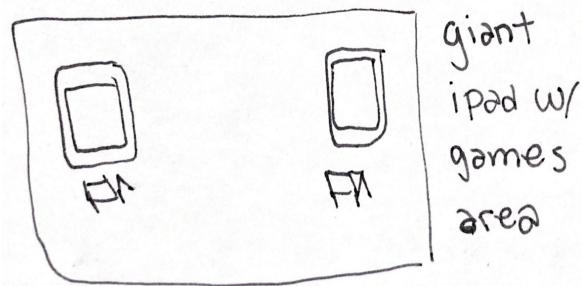


Similar to games **like pokemon go** where the app utilizes your location but as the user collects more points as they find more pokemon. This sketch embodies the same idea but **uses the scanning of a QR code instead** of location which drains a phone battery at a faster rate.

On Aisle with images & kinds of that item



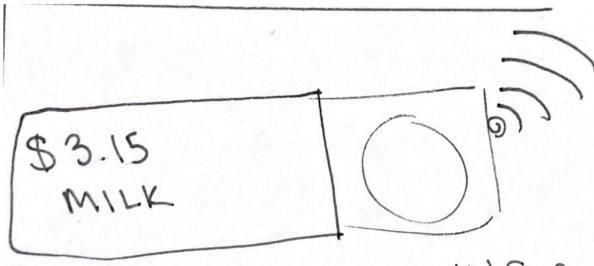
When kids are bored they tend to look at the ground as their eyes wander. Certain aisles tend to have certain food on them and having **something to look at solves boredom** to a certain degree. We designed these larger stickers to go on the ground to give children something to look at.



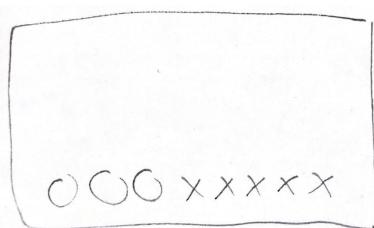
Kids nowadays love to spend time on their caregiver's phone, tablets and computers to play videogames. It keeps them busy and free of boredom. These **large ipads** are something that the store can pre-download on games and children can meet other children whose parents are shopping.



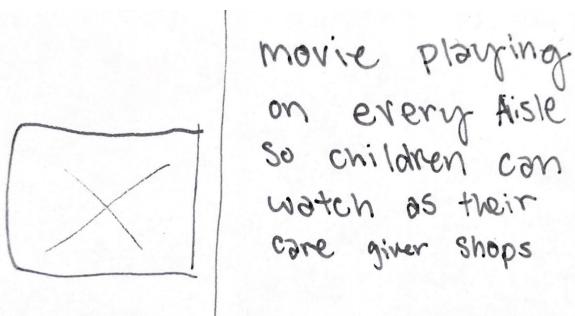
Instead of children sitting closer to their parents, **this cart provides a place for older children** in our focus group to sit in front of the cart. The attachment has a **place with a desk** for individuals to draw, work or play on the phone.



sound effect for children



Punch Card for  
behavior;  
free item



movie playing  
on every aisle  
so children can  
watch as their  
care giver shops

The design left is a learning opportunity for children to **learn about products through sound** and where they come from. After discussing this idea we found that this prototype and **design is geared towards a younger group** than our intended audience.

Left is a design inspired by the 'buy nine, get one free' but for children. Each time that the child goes shopping with their caregiver and behaves during their experience, **they would receive an item from the bakery.**

Children are easily distracted by movies as it involves their sight and sound. Caregivers want their children to **stay near by** fearing that they would get lost or into trouble. By having a **movie screen on each aisle** it allows children to both follow their parents and address their boredom.

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## Design Rationale

Our **scenario** considers the bored child in our **persona, Nate**. We needed to find a way to **remove boredom** for members of our user group during the grocery shopping experience. We wanted to give children the option to “shop” for their own items. These items would be basic **grocery items on stickers** set up around the store. The stands would resemble the stands with number tickets at the deli counter. Kids would be able to find their own “items” in order to complete their grocery “list”. This means that children could have a place and be **productive** in the grocery store. Without adding stressors to the caregiver, we designed an activity for a child to do during the shopping experience to keep them entertained and ultimately stopping them from annoying their caregiver. Our design involves a child being given a card with icons representing items in the grocery store. They are then instructed to find stickers at corresponding locations and place one of each on the card. Based on the amount of stickers they find, they will be **given a prize** at the end of the experience. After our testing, we realized the most important aspect of this design were the **instructions** given at the beginning of the activity. Our final design was based on encouraging the child to stay by their caregiver by influencing them through both the locations of the stickers being next to commonly shopped items and also being instructed to do so. We also refined what tasks the child needs to complete to make sure they do the process correctly.

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## Initial Prototype



This initial prototype represents **how stickers would be distributed around the store**. These rolls would be on stands around the store near the locations of the actual items. They would pick a single sticker from the roll and place it on the respective spot on the card each child is given. **Each type of sticker is intended to be in a separate location.**



The other piece of the initial prototype was **the card that each child would be given at the entrance of the store**. As previously mentioned, each sticker will be put in its respective locations and be turned in at the end of the grocery trip for a prize reflecting how many stickers they ended up collecting.

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## Scenario Testing

### Goals

- Have **testees embody the mindset** and behaviors they had as a child
- Gain insight on **how a child could possibly feel** about the shopping experience
- Use our insights to influence design decisions

We first chose to do scenario testing on two people. These were college aged people who we **prompted to take the mindset of their own 7-8 year old self**. We did this as a way to test on those who have had previously the mindset of a seven year old, but also provide insight into how the product is viewed through their matured eyes as well. We got remarkably similar answers from both testees, which gave us good insight into how both children and caregivers would react to this activity. See *Appendix for Scenario Testing Protocol*.

### Key Takeaways & Applications

- **Scenario 1:** Both believed the experience of grocery shopping as a child to be boring
- **Scenario 2:** Both believed they would have enjoyed the experience of a treasure hunt while grocery shopping
- **Scenario 3 & 4:** Both mentioned they would likely wander from their caregiver and want to stay to finish the hunt.
- **Scenario 5:** Both voiced concerns about the prize being a food (allergies/mom wouldn't let him eat before dinner), but said they would enjoy a toy.
- **Application:** Our problem space is relevant to our testees.
- **Application:** Our prototype solves for childhood boredom while grocery shopping, according to testees.
- **Application:** Our final design would, if implemented, only take place in the most common place for caregivers' to shop within the store.
- **Application:** Our final design, if implemented, would offer a variety of prizes for each amount of stickers they collect.

## Revised Prototype



The **revisions** we made to the prototype were **based on the results of testing**. Previously, the initial prototype had all the different types of stickers on a single roll of tape. We revised this by **putting each type of sticker on a distinct roll** because they were intended to be placed in several locations. The prototype was also designed to allow individual pieces to be taken better.



For our revised prototype, we **lessened the amount of items on the child's grocery list** because through our scenario testing, we found many concerns about children being able to shop for these items in a similar amount of time.

## Usability Testing

We initially tried to conduct usability testing **within the context of the Walmart** with children in our user group. This proved difficult: we **struggled to find caregivers** who were **willing to let us test** our design with their children. We instead did usability testing on two college-aged people, each one individually acting as a child with a given scenario, and lastly participating as though they were in a caregiver-child relationship. See *Appendix for Usability Testing Protocol*.

### Goals

- Understand **how users interacted with prototype** in an active environment
- **Gain insights** into possible problems
- If an adult cannot figure it out, then a child cannot figure it out. See if they could figure it out.



## Key Takeaways & Applications

- Tester 1 Takeaways
  - Was uncertain how many stickers of each kind he should take
  - Liked the prize (HotWheels car)
- Tester 2 Takeaways
  - Struggled to find the locations of the stickers placed around the room
  - She didn't know if she was finished or not
- Final Test Takeaways
  - Main takeaway was that the "caregiver" started doing the activity herself for the "child"
- Tester 1 Application
  - Clarify in instructions how many stickers needed to be grabbed during the activity
  - Keep the Hot Wheels as a prize but maybe consider other options for prizes
- Tester 2 Application
  - Focus on making the locations of the stickers accessible but still challenging
  - Have enough sticker locations to fill the entire card
- Final Test Applications
  - Give clearer instructions that this activity is meant for the child because it was a source of confusion that made "mother" make that decision

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## Reflection

Overall, if we were to move forward, there are definitely some things that we can do to improve our final product. We would change the amount of time that it took to **scope our project** down. Because of the broad problem space, we struggled to find a specific path for our group to go down. It took a lot of effort for us to actually find a direction, but that process ultimately taught us how to address similar future situations in a **more efficient** manner.

Another thing we should have done was **prioritize testing within an actual grocery store**. While doing our testing it was done in a room inside of the honors college, although it was a contained environment, our team feels as though we would have received better feedback. This feedback would have helped us ultimately design a more improved finished product.

There were several areas in **testing** where we **found issues with our final design** that would have to be implemented at a full level. Based on our scenario tests, we would make sure the stickers were only placed in areas of the grocery store where caregivers shop the most, to ensure kids wouldn't need to stray far from their caregiver. We would also make sure there would be **a variety of prize options**, and that kids could only take one sticker at a time. These are areas that we found could not be accurately tested for within our current time limit constraints.

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## Appendix

### Observations Notes

3/2/2020 @4:04 p.m.

I notice the treats right at the front of the store. Rows of cookies on display. They look delicious, but this is not what I am here for. I start down the racetrack. I realize this just feels like the right way to go. The pathway is big, and it's the way people are going. It bypasses all the fresh food, though.

Walmart is fairly empty. Feels as though there are very few people throughout the store, and most of the people I see are older (60+ years). They use carts.

Surprisingly, I see absolutely no baskets. I always use a basket. Most of these people have carts with two items in them. Some even have loads of groceries filling their arms.

I see an old lady with tomatoes, a head of lettuce, and some type of medication in her arms. She is by the milk. These items are very far away from where she is. No basket, no free hands.

25 minutes in, I finally see a basket. It's got one item in it, and he looks like a twenty-something year old.

I see a few younger people now, but still surprisingly few. The ones who are there tend to use baskets or nothing and walk really fast. Nobody is really talking, except those who have partners or children, and even then it's pretty quiet.

Several times now I've seen people getting clogged in the aisles. It feels as though either everyone is in the same aisle, or nobody is in an aisle. Also, the younger people get held up by the older people crowding in the aisles.

Looking in people's carts, it feels like nobody really has a lot of things. The few that do, they have a cartload of food, but no bathroom supplies.

Nobody was shopping in women's clothes. About five guys shopping for men's clothes, all alone, and all silent.

A yelling child. There is a second child in the cart. People seem sort of put off by it, unsurprisingly. The mother is doing her best to get her to stop. The father seems uninterested in the child, and is very focused on shopping.

By the bathroom supplies now. The entrance on this side, there is not a single person coming through without grabbing a cart. It seems weird to grab a cart when thus far the pattern has been only have two items in it. Maybe people just like to push them.

The bathroom section is exceptionally busy. Most don't have food stuffs in their cart, but their carts are more full.

Everybody is once again in the same aisle. Deodorant, this time. They all seem stuck, at some sort of impasse, each half trying to go the opposite way down the aisle with their barely-filled carts. Once they figure it out (no talking, just someone gives up and moves) the whole aisle clears out. It's empty for quite a while.

I decide to look at the checkout. My roommate is done shopping. She came with me out of boredom, but she succumbed to the racetrack and is buying several things she doesn't really need. I know she doesn't need them because she told me she didn't before picking them up.

Scan and go on the bathroom side only has middle-aged men using it, and they have very few items. It is very quiet. It almost looks as though they don't have any.

Nearly everyone in the checkout lines is old and has a decent amount of items in carts. The lines are all four patrons deep, but almost all are open, which is a nice change from past experiences.

Roommate uses the fresh-fruit side self-checkout. Most people in the scan and go on this side have carts and A LOT of items. Not sure where they came from as I noticed hardly anyone with more than a

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few items in their cart while observing. A few people have only one or two items, these are mostly younger (20s) people.

On the way out I notice the greeter. She is old, seems grumpy and is greeting no one.

### **Start: @5:54 PM**

- Most shoppers are alone
- Young person with basket, not cart
- Kids running
- Most people browsing are silent if alone
- Adults in toy section, not kids
- Kid is riding cart
- Shoppers bunched up in tight aisles and cross-sections
- Two teenagers older women play on arcade cabinet in tech section
- Video-games are expensive
- College students paired together
- Waiting in lines for tech
- Speaking foreign language to worker
- Sorting through bargain bin for movies is slow
- Clothes all over floor
- Woman said, "Chaotic" and "Everything is on clearance"
- Random scream
- Why?
- Towers of inventory and boxes with no organization
- Almost ran into someone when turning corner
- Huge selection of basically the same thing for randomly sorted prices
- Stock boys clog aisle
- Boxes are EVERYWHERE
- Surprisingly not a ton of people on their phones
- Almost everyone is keeping to themselves
- Hard to navigate cart
- There is a very large line for self check-out
- Snacks and drinks placed at beginning of line
- Line went relatively fast
- Friend grabbed a half-drunk drink on the shelf
- Varying amount of groceries depending on patron
- Got lost on way back to car
- Huge swathes of space open in the back of parking lot

End: @ 6:22 PM

### **Sunday March 1, 3:20 pm**

long line of people pushing to get carts  
produce section is very crowded  
line of 6 people waiting to get meat and cheese

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one person walking with basket  
large lines of people on the perimeter of the store  
5 people wearing airpods  
child sitting in cart. mother pointing to types of pringles asking son which one “that one?... that one...”

-“there’s already spring cleaning stuff out.  
there’s always cleaning stuff”  
“it’s a thing! it’s seasonal. spring cleaning”

“kid sitting in basket of grocery cart with gallon of apple juice  
mother chasing newly walking child exploring. catches child but is holding her.  
line for scan and go is really long  
wraps around outside  
tons of open lanes but people still prefer scan and go  
farther scan and go is completely available  
6 or 7 year old kid sitting in basket. groceries being piled on top  
mom with two kids. one sitting in kid seat. one riding on end of shopping cart  
two people on their knees leaning down to get something on the bottom shelf- one for beer, one for paper towels  
self check out-  
insert cash was low, couldn’t tell if it took cash

## **Interview Protocol**

“Hello. Thank you for agreeing to interview with us today. The goal of this interview is to understand the troubles that caregivers experience while shopping with their children. I would like to begin by saying that there is no wrong answer. We are simply trying to gain a better understanding of this experience and how you handle it.”

### Background:

1. Tell me about how you typically grocery shop?
  - a. How often do you go shopping?
  - b. Where do you shop?
    - i. Why do you shop there?
    - ii. How often do you shop there?
  - c. How many items do you buy during your typical shopping experience?
  - d. How long do you usually shop?
  - e. Who do you shop with?
2. Tell me about what each of your kids likes doing right now? What do they do for fun?
3. Do you/have you considered shopping online?
  - a. If you do, what do you shop for online?
  - b. What keeps you from online shopping?

### Experience:

4. Tell me about a time where you went shopping with your children?
  - a. How do they usually act in a grocery store setting?

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- i. Are there any identifiable emotions that you can associate with this?
  - 5. What part of this shopping experience brings you back to the store?
  - 6. Describe the emotions that you associate with grocery shopping with kids?
    - a. Why do you feel this way?
  - 7. Tell me about a negative/stressful experience you had while grocery shopping with your children?
    - a. Describe specific interactions with the environment that made it this way?
    - b. Where were you shopping?
  - 8. Tell me about a positive experience you had while grocery shopping with kids?
    - a. Describe specific interactions with the environment that made it this way?
  - 9. When going shopping, what makes you decide to take your child(ren) or shop without them
    - a. What is that experience usually like?
  - 10. How do you typically deal with these stressful experiences with children in the grocery store?
    - a. How does this help
  - 11. In a perfect world, describe your ideal experience of grocery shopping with your children.

## Testing protocol

### Scenario Testing Protocol

#### Introduction

Hello, thank you for taking part in this scenario usability test. Today, I will ask you to think back to experiences you had as a child with your caregiver in the grocery store. I will also give you a specific scenario that involves joining your caregiver at the grocery store as a child. Your main task is to embody the mindsets you had as a child and give honest responses to the scenario prompt that I present to you.

#### Scenario

You are a 7-8 year old child in third grade, and it is at the end of an average school day. Your mother picks you up and tells you that the both of you are going to the grocery store to buy ingredients for dinner that night. What are your thoughts, feelings, and actions at this moment?

#### (Response 1)

At the entrance of the store, the greeter hands you a card that you can fill with stickers that you find locations around the store. You're told that when you leave, you'll win a prize based on the amount of stickers you find. If you were a child how would you feel about this activity?

#### (Response 2)

As you're walking through the store with your mother, you can encounter several locations with stickers. As she picks up items for dinner, you also collect the stickers and put them on your card. How do you think this would affect your behavior and emotions at the store? What do you think your approach to this activity would be, and how would your mother feel about it?

#### (Response 3)

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Your mother is finishing up, and you have an amount of stickers left on your card with about half of the card remaining empty. You are now in the checkout and there is no longer any other opportunities to grab more stickers. How would you feel about the end of this activity?

(Response 4)

As you're leaving the store with your mother, the greeter takes your card and gives you the choice of a bag of fruit snacks, a cookie, or a small gimmicky toy. What do you think of this selection of prizes, and what do you personally pick?

(Response 5)

Conclusion

It is now the end of the shopping trip. As a child, how would you personally feel about this sticker activity? Is there anything you could give us feedback on?

(Final Response)

Thank you for taking part in this scenario test, your insights and participation are greatly appreciated. Is there anything you want to finally add or ask about? Thank you.

## **Usability testing Protocol**

### Goals

- Find ways to improve upon our initial prototype
- Gain insights into possible problems
- Learn the possible behaviors of users when utilizing design

### Protocol

Hello! Thank you for participating in our usability testing. In this test, we are testing the product's usability and not you. We are looking into a solution for children to feel less bored while shopping with their caregiver.

You will be asked to complete a simple activity that is meant for a child. You will be given a card with several icons and there are several locations around this room with stickers decorated with each icon. Your task is to search this room for these stickers and place them on their respective spots on the card. Once you get your card you may begin. Report back when you believe you are finished.

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