

# The Junction Journey Process Book

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IXDS Assignment 2: Mobile Service and Emerging Tech

# Quick Summary

**Duration:** 3 weeks

**Methods/Skills:** Business Presentations/Pitching to a Client, Iterative Mobile Prototyping, Photoshop, AR Modeling (Microinteractions), Reverse Assumptions, Data Collection, Stakeholder Interviewing

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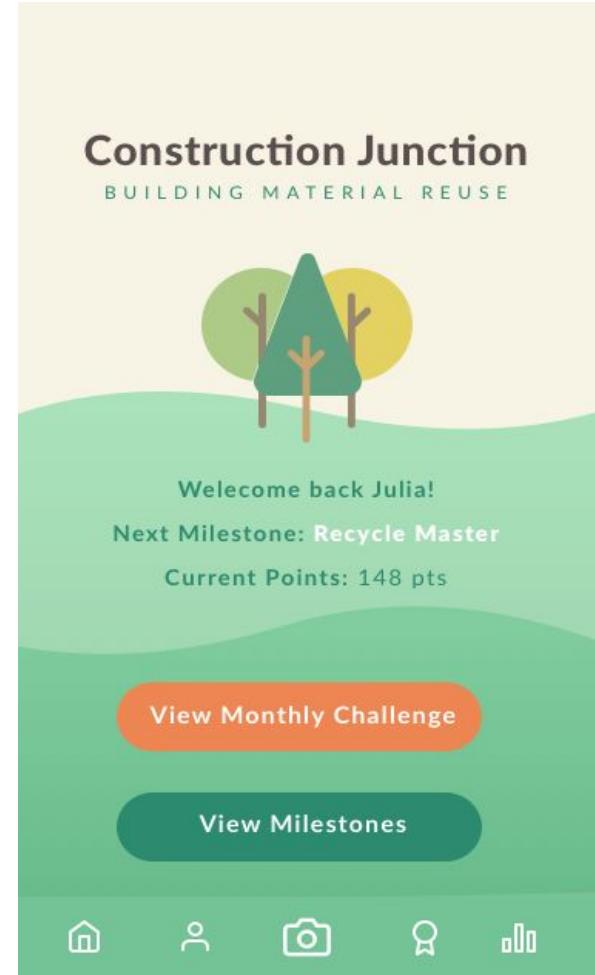
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# Introduction

# Randomly Selected Company

An additional variable was added to this assignment: **unfamiliarity**. From a pile of notes, we were to select our randomly assigned company. We selected **Construction Junction (CJ)**: a large, non-profit warehouse supplying surplus construction materials & appliances at reduced prices.



# Discovery & Synthesis

# What is Construction Junction?

We began our assignment with some initial research on what Construction Junction was, including their mission and what products they sell. We additionally discussed their involvement with community organizations, since they are a nonprofit organization.



Reuse Building Materials	Trade Institute
Promote Conservation	Goodwill
Donation Service	\$25k of materials
Buy/Sell Goods	Project_RE
Environmental Councils	Free Ride
Student Projects	Art
Local Businesses	"Cheap Home Depot"
Inventory Change Daily	Construction

# Honing in on Stakeholders

From this initial research, we came up with a list of central stakeholders and began ideating potential problems and opportunities they faced.

## Stakeholders:

Companies (donate, buy/sell)

Environmental Councils

Local Government/Regulations

Local Businesses

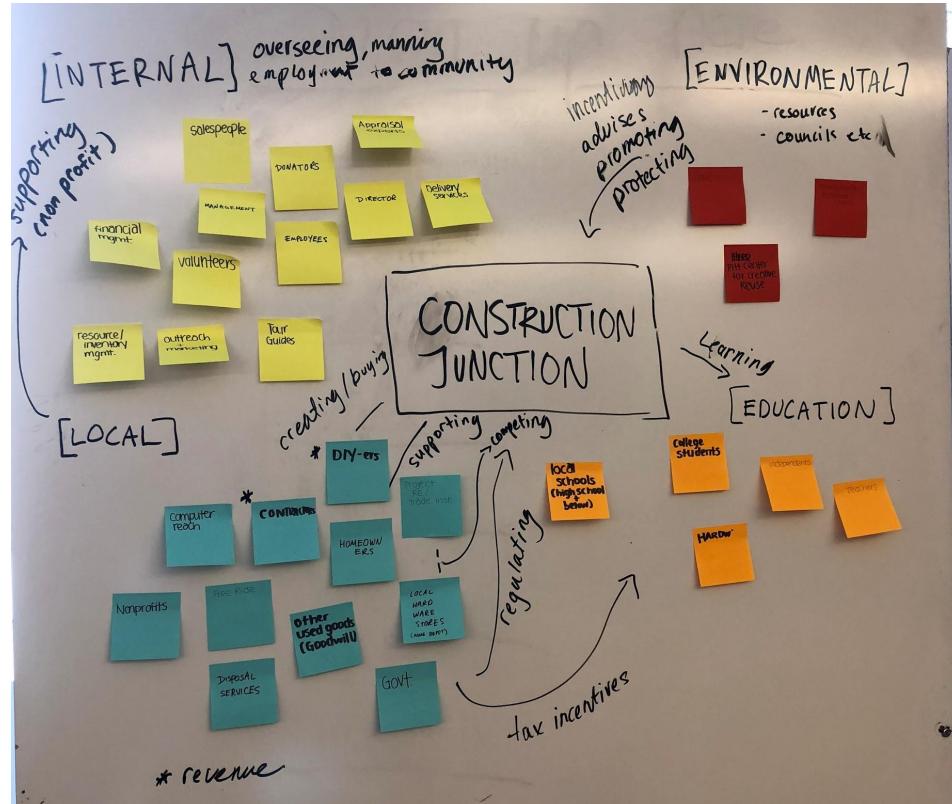
Local Schools/Students

Local Community

\*Homeowners

\*DIY

\*Contractors

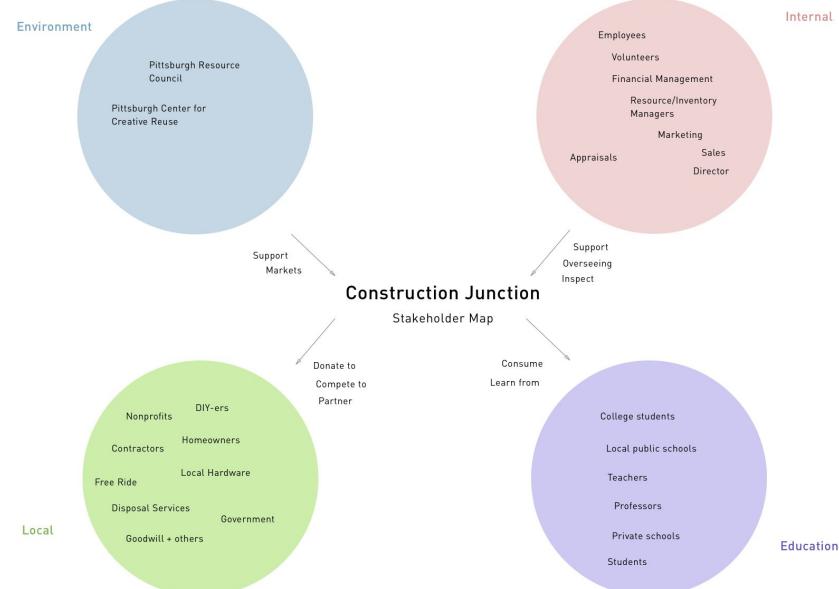


# Stakeholder Iteration

From our initial brainstorming session, we created a draft of our stakeholder map and got feedback in order to move forward to our final.

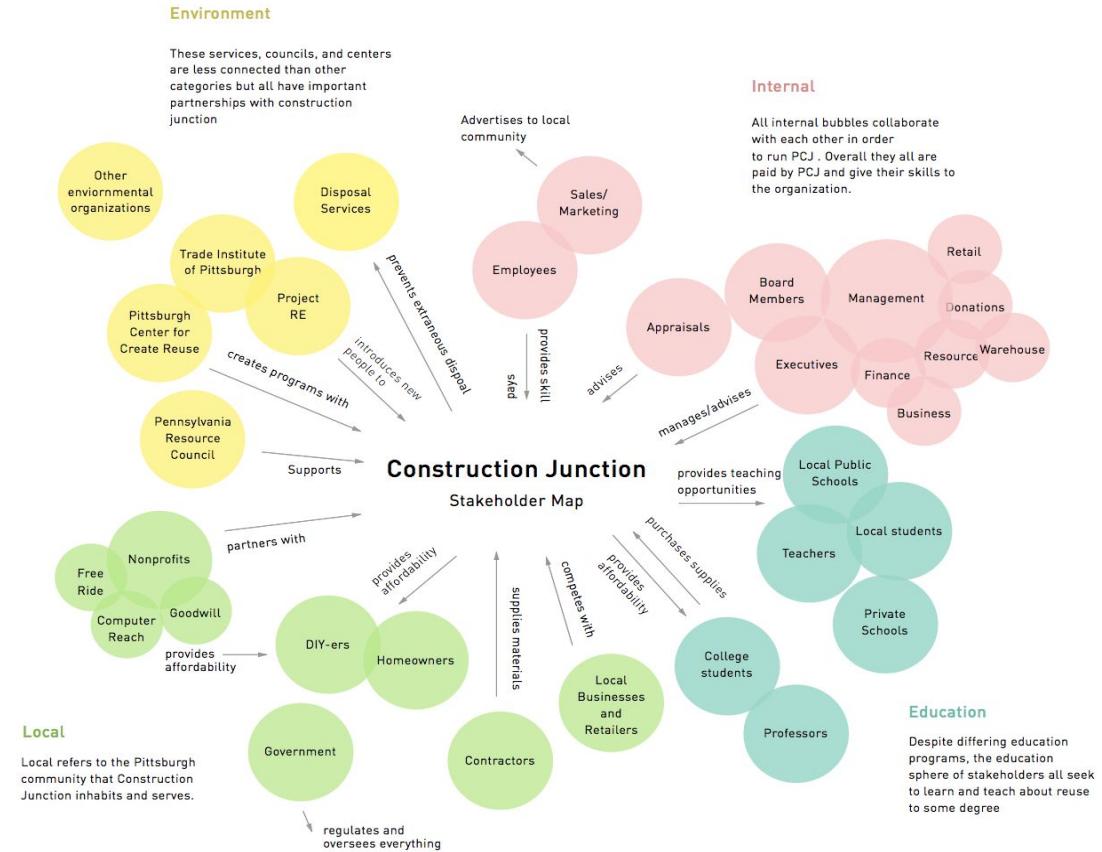
## Feedback:

- Consider other relationships besides just grouping categories
- Add in needs and intentions, the specific ties between different groups or people
- Don't just focus on relationships between different categories, explore within category relationships



# Final Stakeholder Map

From our initial feedback, we decided to redo some of the visuals in order to better indicate relationships and overlaps in our map. We enlarged bubbles of specific players and had them overlap to show connections. We detailed these connections in the blurb for each section. In order to capture the entire ecosystem, we also made sure to use arrow keys to highlight relationships in and out of Construction Junction.



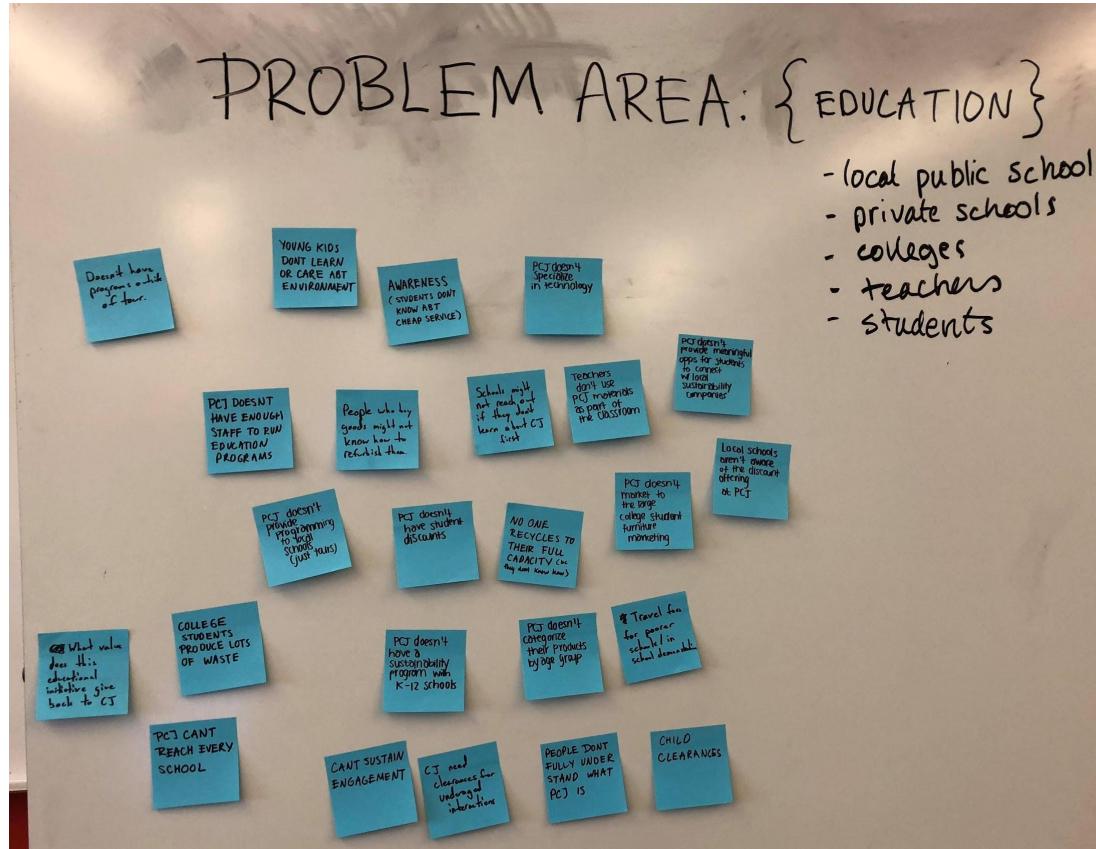
# Reverse Assumptions

We used reverse assumptions to help us come up with some ideas for our service.

Assumption	Reversals	New Services
PCJ creates programs for the community w/other organizations	PCJ does not create programs for the community	Community proposes programs for PCJ to make
PCJ has someone that finds donations	PCJ doesn't seek out donations	Those who want to donate can find online/mobile platforms for info on PCJ donations
PCJ has quality testing for their services	PCJ doesn't test their services	Each potential donation can conduct quality testing at home via our PCJ guidebook
PCJ rely on their partnerships for many of their backend	PCJ performs most of the backend functionalities themselves	Managing partnerships vs. company obligations
PCJ value the community more than profit making	PCJ values profit more than community	PCJ sets up a new intersection between profit and community value
PCJ hosts tours onsite for schools	PCJ does not host tours	PCJ goes onsite to schools/hosts virtual evaluator

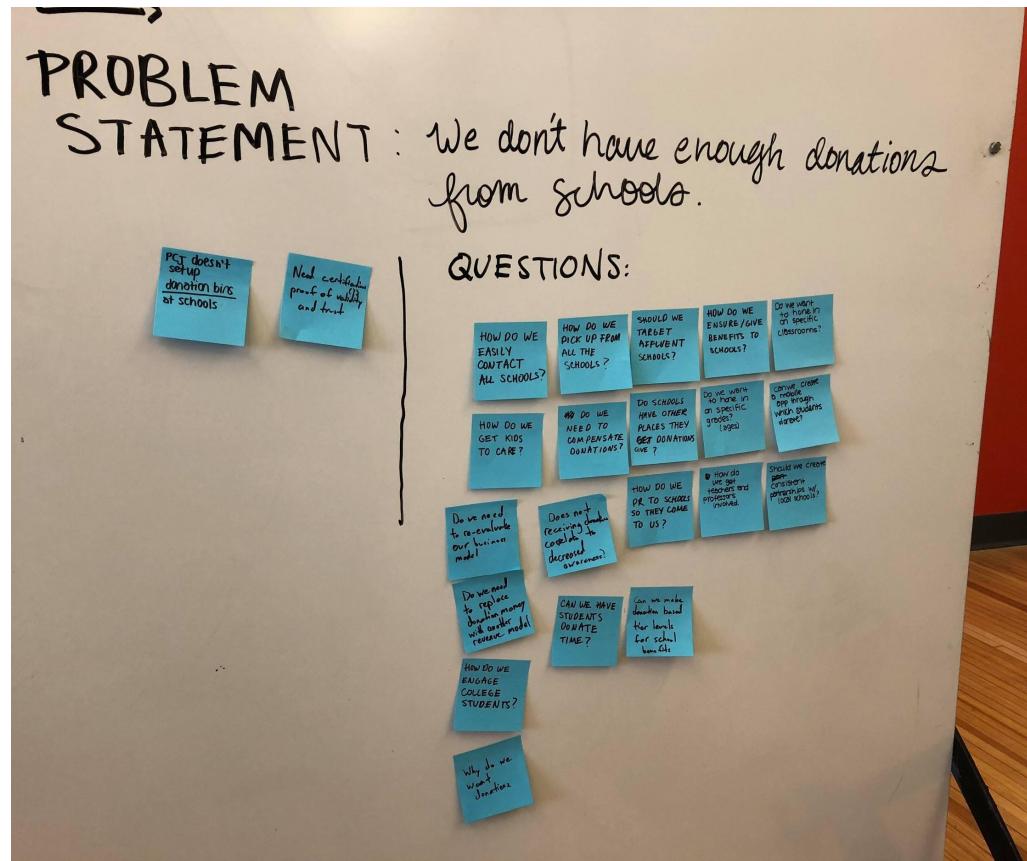
# Honing in on Education

Since community is really important to CJ, they host a variety of educational opportunities such as site visits, and Pittsburgh has a large academic community, we decided to hone in on schools and particularly the idea of conservation education. We came up with different problem areas within education.



# Problem Statements in Education

We practiced creating a problem statement in order to hone in on one specific motive for our educational mobile service that would solve an important problem at Construction Junction. Based on this exercise in class, we continued our search for a problem statement, by writing out 20 questions and figuring out which questions really appealed to us.



# Selecting Problem Statements

After the initial practice with a problem statement, we **brainstormed 20 more problem statements**. Here were the top statements, that all three of us had mutual interest in solving:

- We don't have a virtual presence with the younger population of Pittsburgh
- We don't have reusability drives in local schools
- Schools don't understand exactly what we can do for them / how they could benefit

From this, we created a combined statement:

**We don't have a virtual presence with local students in Pittsburgh to share and engage them in our vision.**

# 20 questions for the Mobile Service

We built a consolidated list of questions we could answer to help answer our problem statement and solidify our mobile service model. Bolded questions were the ones we felt were most feasible to answer. From these bolded questions, we began our ideation process.

- **How do we encourage students to reuse goods?**
- Where can we set up donation bins?
- Can we partner with clubs at school?
- **How are students motivated?**
- **Would this help increase revenue for Construction Junction? (co-creation of value)**
- Can we mobilize the education currently being provided by Construction Junction (virtual tours, etc.)? \*email or phone them?
- What are students interested in?
- What ages of students are interested?
- Do students care about virtual presence?
- Do students find out about PCJ through school or other means?
- **What kind of technology appeals to students in pittsburgh?**
- **What kind of technology do kids currently have access to? In school and out of school?**
- **What population of students in Pittsburgh know what PCJ is?**
- What age groups are most interested in technology?
- How do schools currently use technology in the classroom?
- What are the successes of technology in school?
- **How can we partner with multiple schools across pittsburgh?**
- How do we create a community that fulfills our vision?
- **What do the students gain out of engaging with our vision?**

# Word of Mouth Marketing

Since awareness of their mission of conservation is one of their elemental problems, we decided to look at the way Construction Junction markets. We realized that they had all the social media platforms they needed, and thus, further word-of-mouth marketing (the most effective form) would be the best strategy to show off their offerings and services to the community.

**People are 90% more likely  
to trust and buy from a brand  
recommended by a friend**



**28% of consumers say word of  
mouth is the most important factor  
in strengthening or eroding  
brand affinity**



# Middle School Children as our Target Market

Since Construction Junction wanted to build awareness of their mission in their community and word-of-mouth marketing was key to this, we decided to focus on Middle School Children specifically. This is because they are constantly surrounded by their peers and other community groups (parents, teachers, teammates), etc.



# Using Emerging Tech to Gamify the Experience

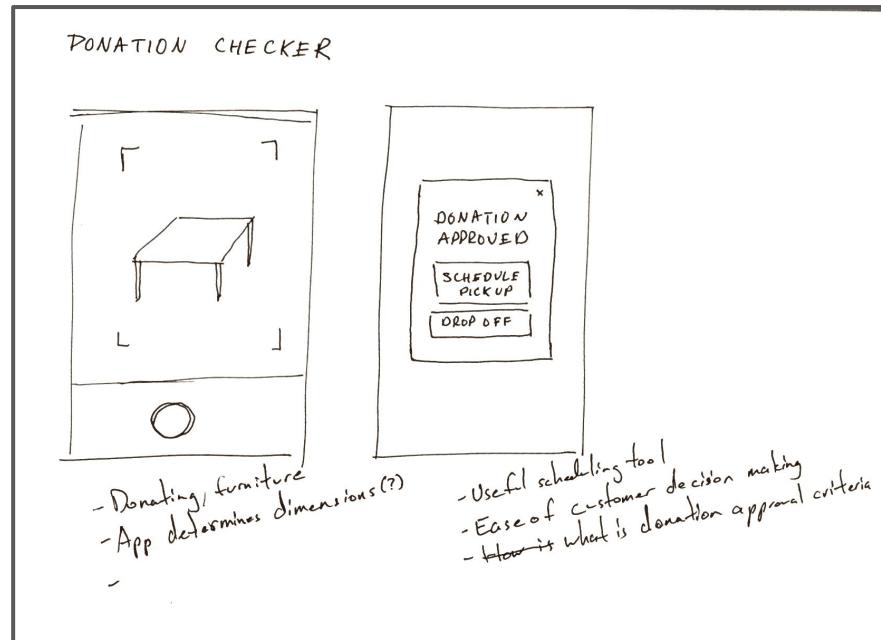
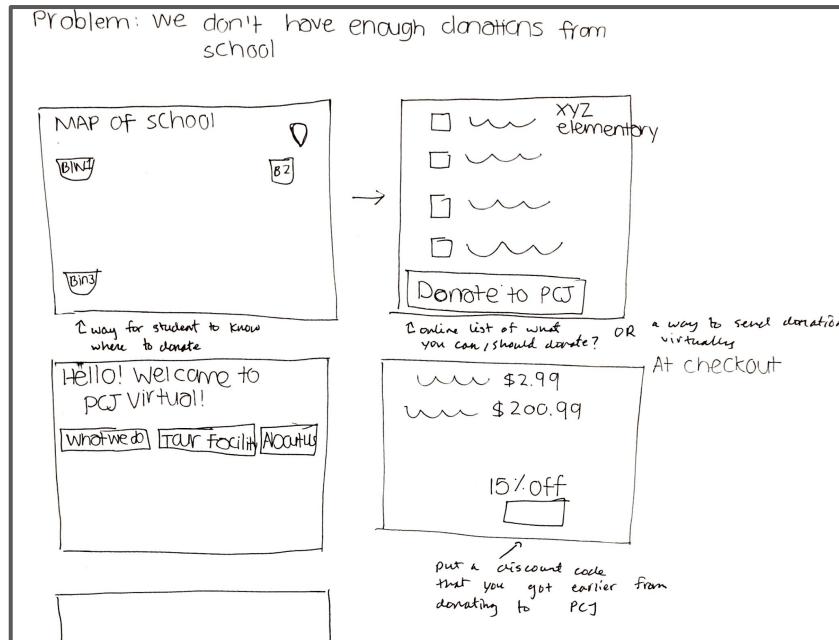
The second portion of our design was to not only solve a problem CJ has, but also using emerging technology. This only solidified our desire to focus on younger schoolchildren, because then we could gamify the educational experience and use several aspects of emerging technology. Additionally, gamification would allow for the creation of accounts, and thus valuable data collection for the future of building CJ brand awareness (from a internal management perspective).



# Ideation

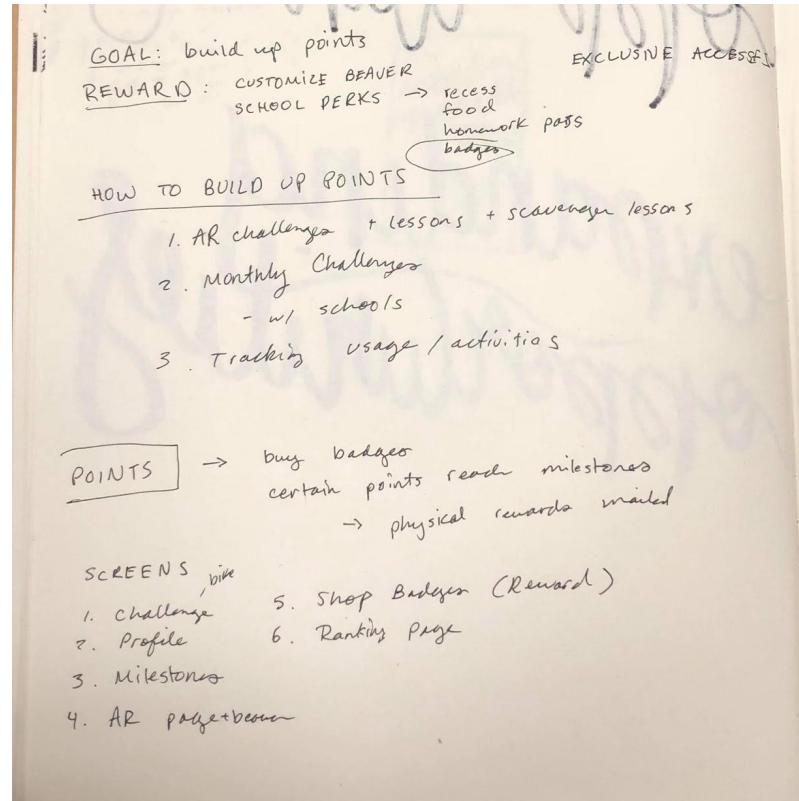
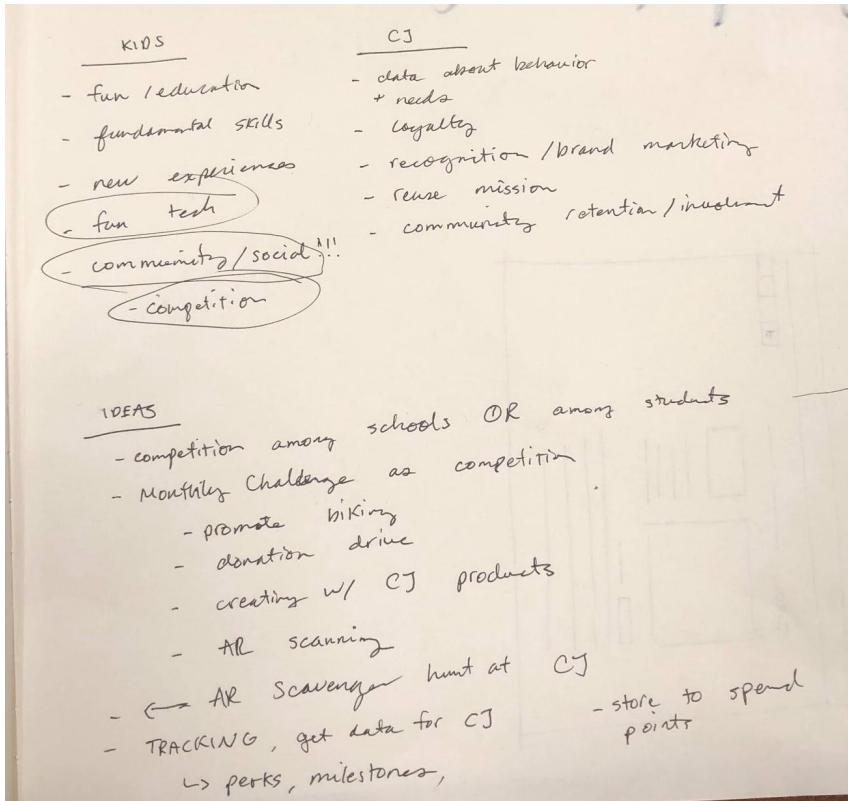
# Roundtable Brainstorm

We first did a roundtable brainstorm session. Each person in our group was given one page and was given 60 seconds to draw potential ideas for the screens. Then we rotated when the timer rang. This helped us get all of our thoughts out on paper, so we could have a meaningful discussion about the direction of our mobile app.



# Plans for Low Fidelity Screens

We created plans for how we wanted to set up our screens, prior to the first round of low fidelity sketches.



# Low Fidelity Screens

**AR Scanning** - Students can scan local furniture to see how a specific furniture piece could be reused

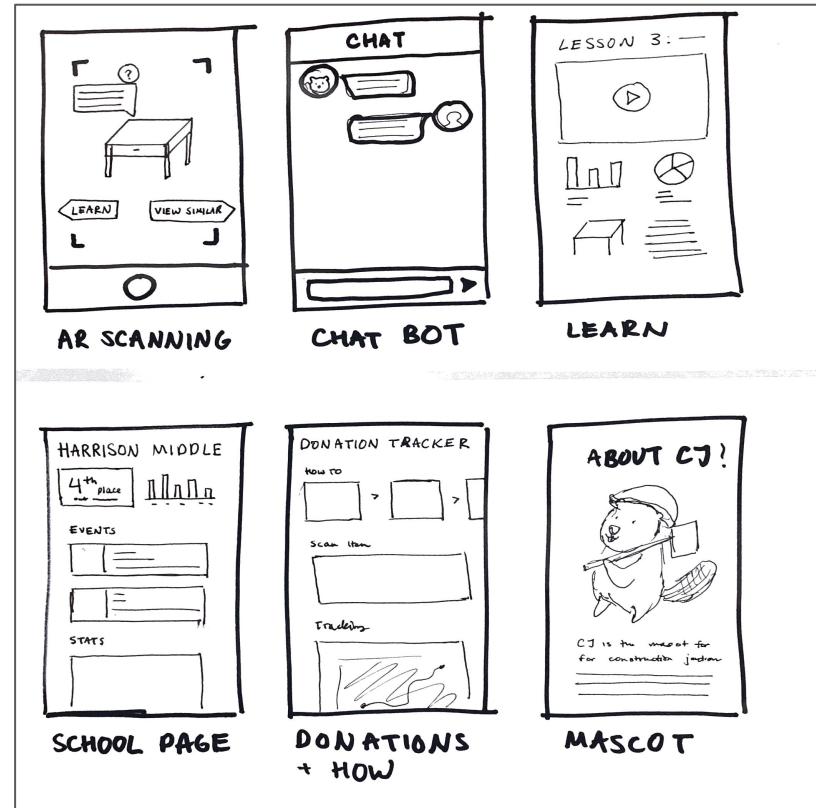
**Chat-Bot** - Interact with our CJ Mascot to ask questions about tutorials/learn or about our products

**Learn** - Have online lessons regarding the environment and conservative education

**School Page** - See how your school is doing in comparison with competitors and also see current events

**Donations + How** - How do we do donations/how do people collect points for their donations

**Mascot** - Learn about our Beaver Mascot, CJ!



# Low Fidelity Critiques

Skip had the following recommendations in order to strengthen our **concept**:

- Understanding what Motivates Younger Kids Coming
- Coming up with a Mission Statement
  - Our Initial: Our goal is to foster a love for reuse and recycling in our community's children through competitive games, challenges, and technology experiences.  
In turn, we hope to collect valuable data about our youth, educate them about reuse, and build Construction Junction's brand value.
- Why Kids? (That's where we honed in on effective word-of-mouth marketing)

Skip had the following recommendations in order to strengthen our **app design** itself:

- Finding Kid Friendly Color Schemes
- How do we create a user friendly, gaming environment?
- Building the experience by creating a rewards and sharing system
- Discuss the purpose of each screen
  - Discuss the effect first (why?)
  - Monthly Challenge
  - Children are gamers, players
  - Leaderboard - kind of like a rivalry
  - Milestones page - can have micro interaction

# Hi-Fi Version 1

In our Hi-Fi Version, we changed our design to be more user friendly for children. Additionally, we completely gamified the experience. We got rid of excess screens, such as Intro to CJ and how donations work for CJ, which wouldn't appeal to children.

We continued to grow two main themes:

- Community
- Challenges

We wanted these two ideas to be the central focus of our app and additionally how we would be promoting conservation.



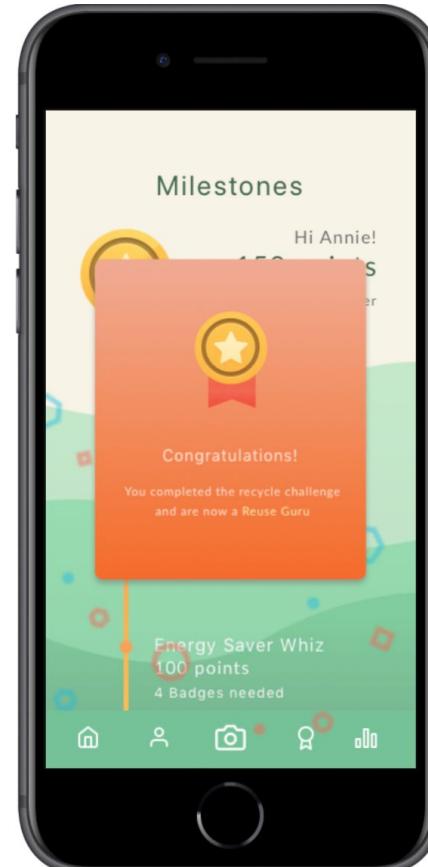
# Hi-Fi Critique

There was more critique about our concept over the design of it. We were encouraged to think about how it should appeal to both target stakeholder groups: internal management and the children who play on the app. This is when we really thought about creating games and pages that are easy to collect data from, which is the most important part of the experience for internal management (how to continue growing awareness of their vision).

# Microinteractions

# Milestones

One of the key microinteractions we created was the celebration and rising milestone levels on the milestone page. The reason for this microinteraction was to inspire a sense of accomplishment and pride in the children using the app, and through several rounds of user questioning, we learned that the majority of peers really enjoyed the small animations that showed recognition for their accomplishments.



# Tactile Responsivity

Small tactile response recognition microinteractions were also added to show users that we have acknowledged their input and this hopes to leave them feeling satisfied that their actions and intentions are understood.

These things include toggling animations, and button pressing animations.



# Information Microinteractions

In our AR screen, the information is presented and faded in in hopes of further drawing the user's attention to the information being presented. The slight delay also helps create a more humanistic aspect to the interaction, making it seem like the app needs a second to think about its response before returning it.

This could give a useful slight buffer time for if the technology needs time to load the data as well during the actual implementation phase.



# Final Solution & Roadmap

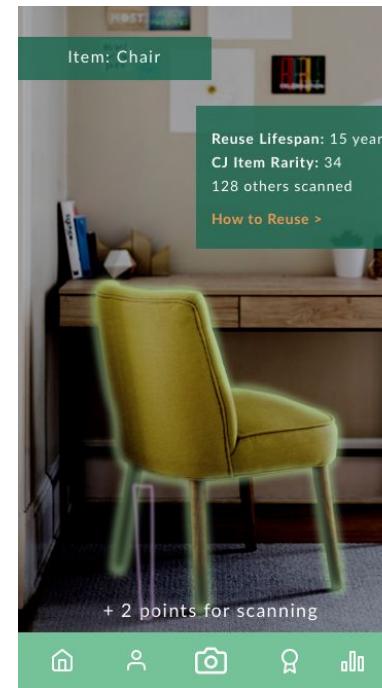
# Framer Prototype Link

<https://framer.cloud/ZIOOL>



# Final Solution Screens

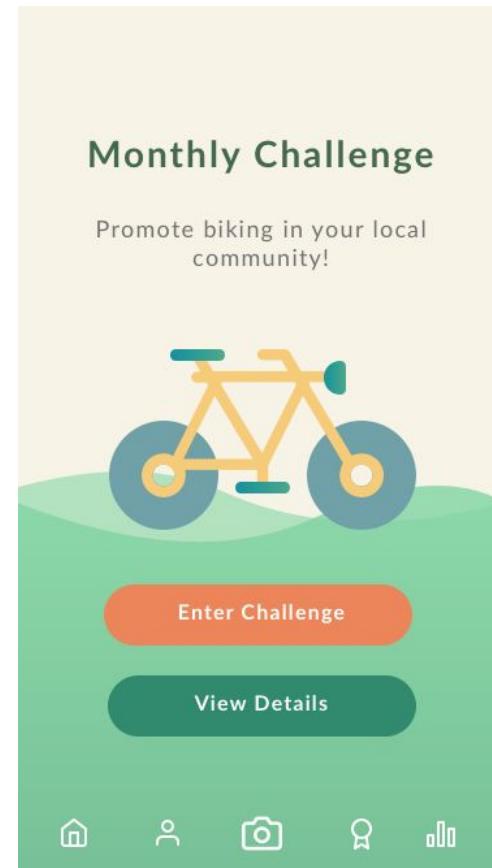
The AR scanning is an engaging way for children to learn more about reuse while leveraging their explorative nature. We use computer vision to identify objects in order to teach children how they can reuse the object. We also overlay information to augment reality in order to fascinate as well as add to our “gamified experience”



# Final Solution Screens

The monthly challenge is a way for Construction Junction to gather data based off their needs at the time. It serves as a way to test what events or what topic areas are more interesting and have more engagement and success than others.

This is also a way for children to engage consistently with the application, continually coming back to a new challenge



# Final Solution Screens

We chose to add a more gamified experience to our app in order to help promote engagement. However we understood that while badges and filling up stats were exciting at first, they would not last forever. We thought rewarding children for becoming a “Recycle Master” because they had learned how to recycle properly and earned the right badges for it, would be more conducive to engagement.



# Final Solution Screens

Lastly we also had a leaderboard based off of location services. Not only is this good for gathering data for Construction Junction, but it adds another motivating level for children. If they see that neighbors or classmates are also engaging, they may feel inclined to engage with them or even become competitive to try and beat out their points. We showed school rankings to promote a sense of community and promote working together.

Leaderboard



1st 148 pts  
Annie Wang  
Reusability Elementary School

Students Schools

Rank	School	Points
1st	Monta Vista High	900 pts
2nd	Hinsdale Central	788 pts
3rd	Robert Middle	609 pts
4th	Holliston High	589 pts
5th	North Catholic	402 pts

Home User Camera Search Statistics

Leaderboard



1st 148 pts  
Annie Wang  
Reusability Elementary School

Students Schools

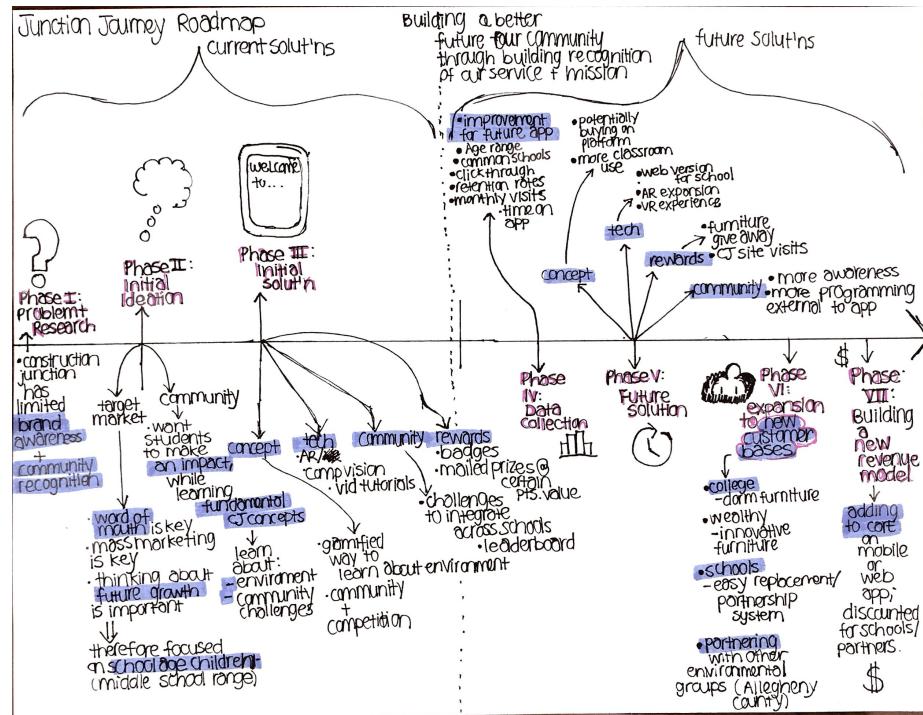
Rank	User	Points
1st	Andrew Huang	148 pts
2nd	Skip Shelly	80 pts
3rd	Andrew Huang	74 pts
4th	Julia Wang	55 pts
5th	Albert Einstein	40 pts

Home User Camera Search Statistics

# Roadmap Development

First we developed an initial roadmap sketch based off our current solution and how we imagined it would play into our future solution.

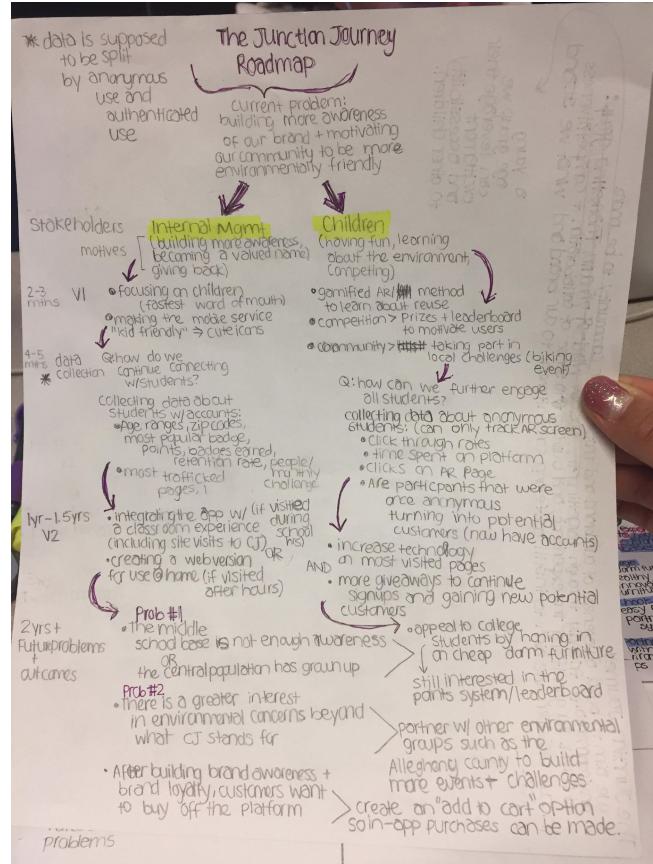
We took this into class and got a lot of helpful feedback in how to adjust the direction of this map. Key points were to treat this as a roadmap for a **mobile service** and that there should be a focus on future problems not future solutions. Another big aspect we missed was incorporating the different stakeholders and how the service connects them.



# Roadmap Development

From our in class crit, we redeveloped the roadmap keeping in mind the stakeholders and highlighting how problems drive solutions.

We split the map into two sides - children and internal of Construction Junction. We showed how there is a potential sequence, but most importantly displayed the connections and moments of value added to both stakeholders.



# Reflections

# Team Reflection

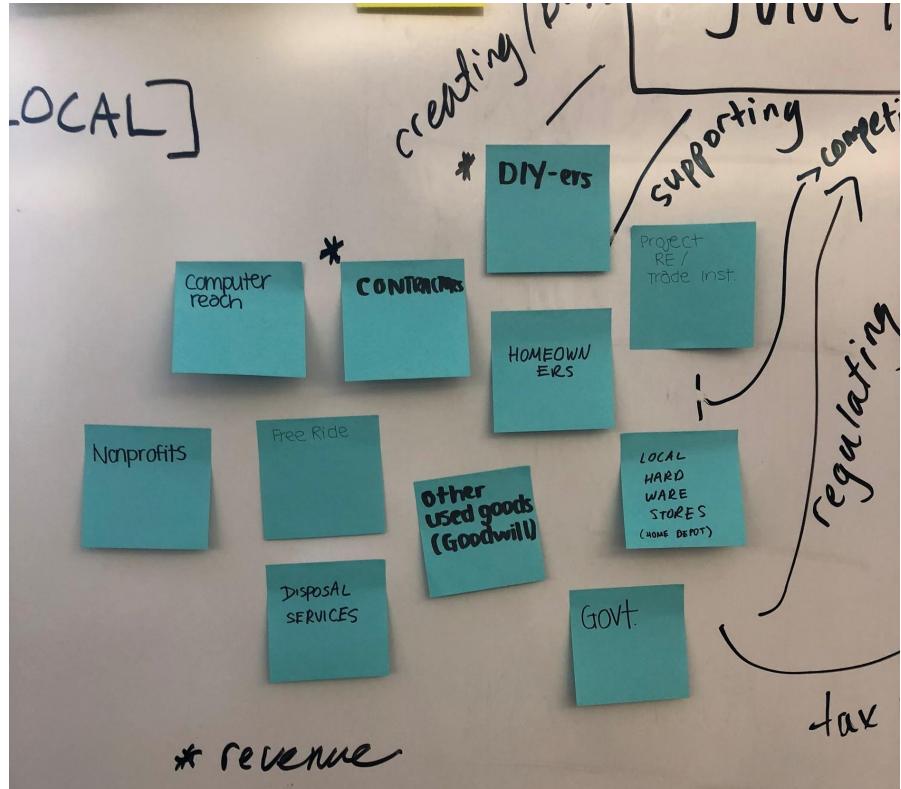
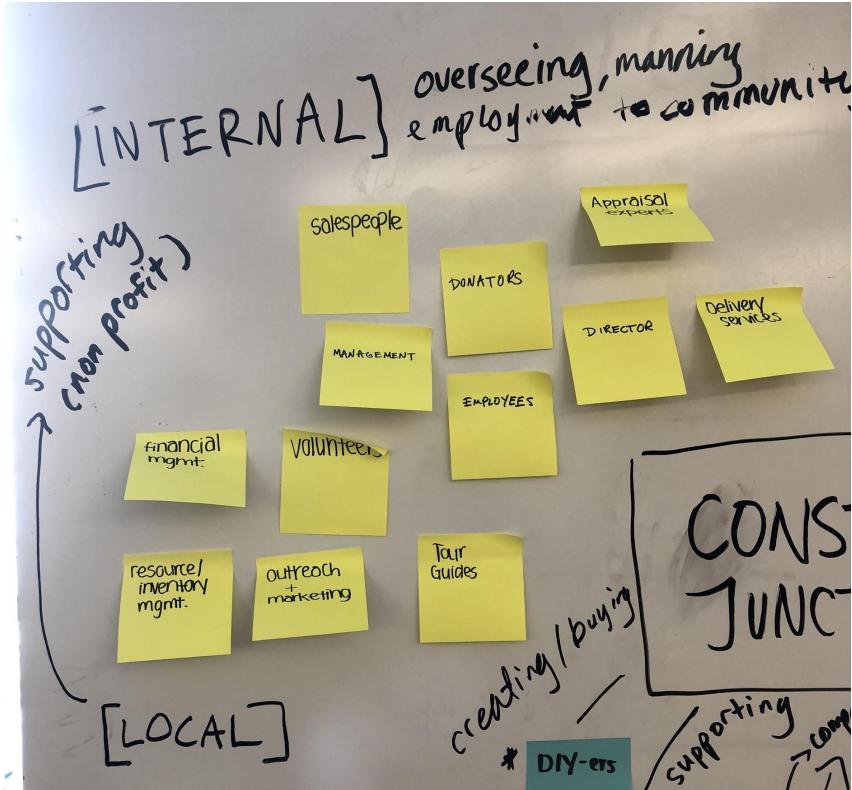
Overall our team really enjoyed our project due to the uniqueness of our client, Construction Junction. From the beginning when we were creating our stakeholder map and learning about the organization, we could see many different opportunities for the organization to move effectively forward with their mission and business.

Despite multiple opportunities, we were happy to focus on the younger population of elementary and middle school children and explore what designing for that population is like. We struggled as we delved into gamifying the application, understanding that our knowledge of game design is highly limited. In the future we imagine we would be more deliberate with how we create a gamified experience, taking into account more research about game design, especially for children.

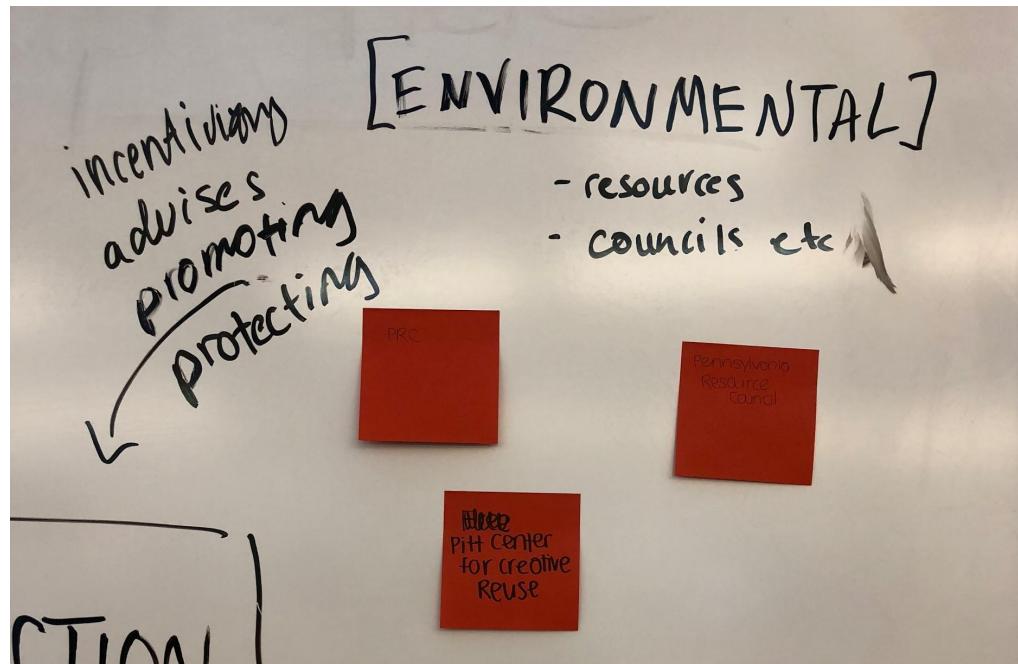
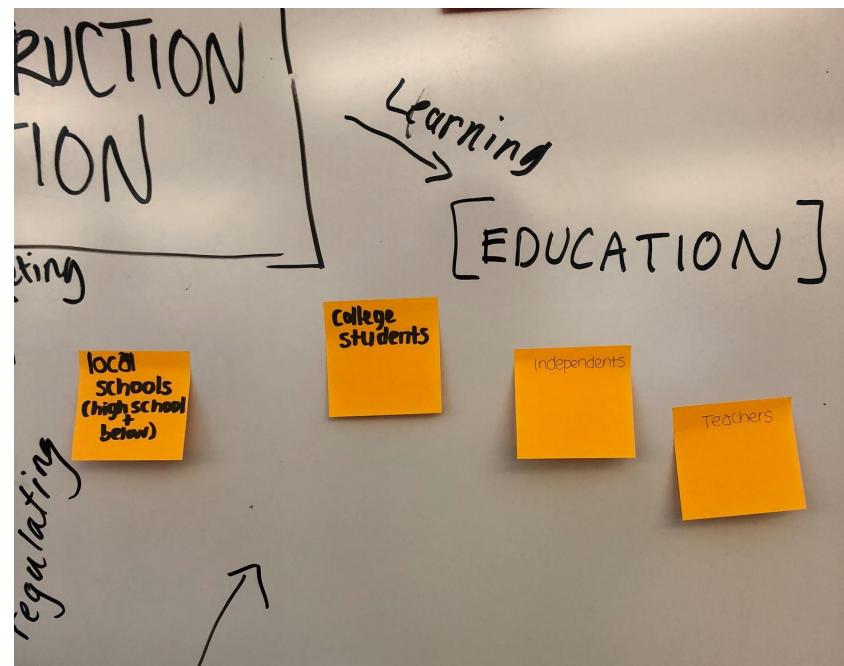
# Appendix



# Stakeholder Brainstorm Closeups



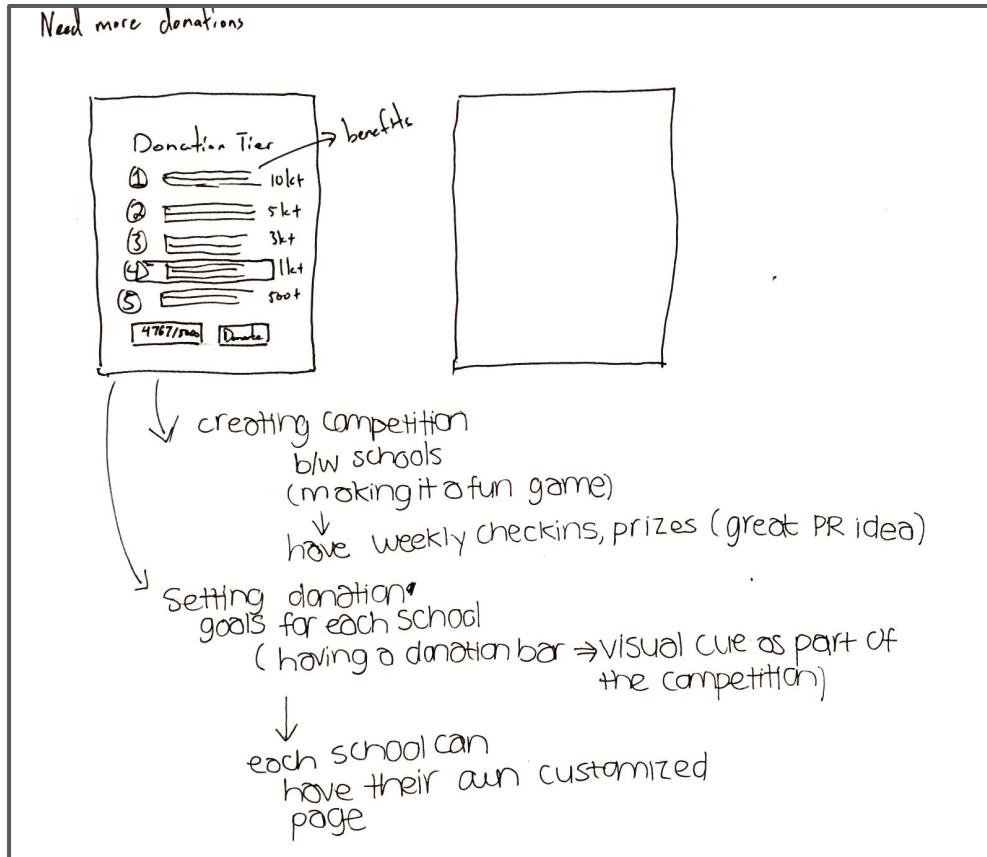
# Stakeholder Brainstorm Closeups



# Reverse Assumptions Rough Draft

ASSUMPTIONS	REVERSALS	NEW SERVICES
<ul style="list-style-type: none"><li>- PCJ creates programs for the community w/ other organizations</li><li>- PCJ has someone that finds donations</li><li>- PCJ has quality testing for their services</li><li>- PCJ rely on their partnerships for many of their backend functions</li><li>- PCJ value the community more than profit making</li><li>- PCJ hosts tours onsite for schools</li></ul>	<ul style="list-style-type: none"><li>- PCJ <u>does not</u> create programs for the community</li><li>- PCJ doesn't seek out donations</li><li>- PCJ doesn't test their services</li><li>- PCJ performs most of the backend functionalities themselves</li><li>- PCJ values profit more than the community</li><li>- PCJ <u>does not</u> host tours</li></ul>	<ul style="list-style-type: none"><li>community proposes programs for PCJ to make</li><li>- Those who want to donate can find online/mobile platforms for info on PCJ donation</li><li>- each potential donator can conduct quality testing @ home via the PCJ site</li><li>- Managing partnership vs company obligations</li><li>- Profit/Value proposition evaluator</li><li>- PCJ hosts virtual tours</li><li>- PCJ goes onsite to schools</li></ul>

# Roundtable Brainstorm



# Roundtable Brainstorm

- SCHOOL COMP
- DONATIONS BINS
- KIDS ACCOUNT PERSONAL
  - GET POINTS
  - LEARN
- AR - scan objects
- MASCOT / CHAT BOT
- 6 SCREENS ON BOX
- AR / VR SCREEN
- LEARNING / INDIV
  - ?
- COMPETITION / SCHOOL
- PRODUCTS PAGE
- MASCOT
- IN PERSON TOUR



SCREEN IDEAS  
2/14/18

## Construction corner

Welcome, McAddams middle school

Points:

Participants

Current events @ McAddams -

see competitors All competitors or nearby rated ones

McAddams 515 pts

Sam School ...

Julia School ...

Andrew School ...

\* Recycling gives points

\* How to donate?

\* How to recycle?

Home screen

CONSTRUCTION JUNCTION  
COMMUNITY PAGE

[virtual tour](#) [view schools](#) [events](#)

What does virtual tour want to accomplish?  
What if the events don't pertain to my school?  
How do I engage with other schools outside ranking?

# Roadmap Rough Draft

