Concept Presentation

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contents

18 months left to save the planet from irreversible damage[5]

2016 was the warmest year on record[5]

The concentration of CO^2 in our atmosphere is the highest it has been in 3 million years.[4]

Global sea level rose about 8 inches in the last century[3]

The planet is dying.

Sustainability → Carbon Footprints

research topic

Carbon Footprints

Specifically reducing them
through food consumption

→ average of 8.1 metric tons of
CO^2 each year[2]

research topic

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Specifically reducing them through food consumption

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reduce

how users minimize the amount of takeaway they get to reduce emissions

reuse

how users reuse food consumption products to reduce emissions

recycle

how users view and partake in recycling to reduce emissions

preliminary research

according to our preliminary research

problem area

reduce

users were found to be resistant to changes in their diet, favoring taste and convenience over sustainability.

no motivation to make changes.

reuse

users were often forgetful and didn't possess strong incentive to carry around reusable items.

changes were inconvenient to make.

recycle

users had a strong desire to create positive environmental changes within their lifestyles.

users were open to more opportunities.

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problem scenario

So WHY Recycling?

- there was a strong opportunity for a solution
- *users needed small changes to make large differences*
- already aware of the issue, welcome to it

“In the world that we live in, if you don't recycle, what are you doing with your life?”

-- Direct quote from interviewee, research assignment 1

technology

“ user is content with the app however is *frustrated* with disappointing interactions when service doesn't provide efficient ways to redeem money

often times it's like it's like a hassle to even open like social media apps. So if it's like a recycling app...you're kind of in a rush to chuck it away. So like it would be a bit, a *bit of a hassle to use*

I have like *no motivation to use it* - what will the app give me? I get more satisfaction chucking a can in a recycling bin. I don't get satisfaction from opening an app

they were largely a HASSLE *and* RARELY SATISFYING

It's *too...inaccessible usually*. Like pulling out your phone, checking it...you might as well just dump it. Saves time.

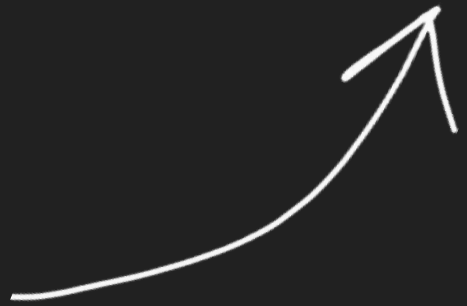
user is extremely *disappointed...feels it was a waste of time* and complains that features did not work as advertised ”

Design Criteria

1. Solution must address the problem directly and aim to solve it either *during or immediately* after the process
2. Design must also encourage users to make changes to their lifestyle through positive reinforcement[1]
3. Process must simple, accessible, and convenient (no apps)
4. Design must be seamless and unobtrusive to the user
5. Solution sustains positive recycling habits post-interaction

methods - ideation

Ideation time! How did we come up with possible solutions?



https://www.pinclipart.com/maxpin/iRmhJTo/

We began by looking at existing successful designs for inspiration and began to adjust them to cater towards sustainability.

problem area

digital tree

A tree that adds a new leaf (with time & item) every time a product is properly recycled.

smart trolley

A shopping trolley with a smart screen to help users buy eco-friendly items.

interactive walkway

An interactive tunnel that illustrates the harmful journey of non-recycled products.

After creating these ideas we iterated upon each of them.


bodystorming

- Vending machines should accept all recyclable materials
- Users get money by recycling items
- Add to a community digital tree
- Each leaf is customizable
- Tree is animated to make process exciting

- Due to users being in to much of a rush we decided to add floor based interaction to the tunnel
- Floor interaction would be in limited places to still allow for comfortable foot traffic flow
- QR codes are placed to allow for further education and reading

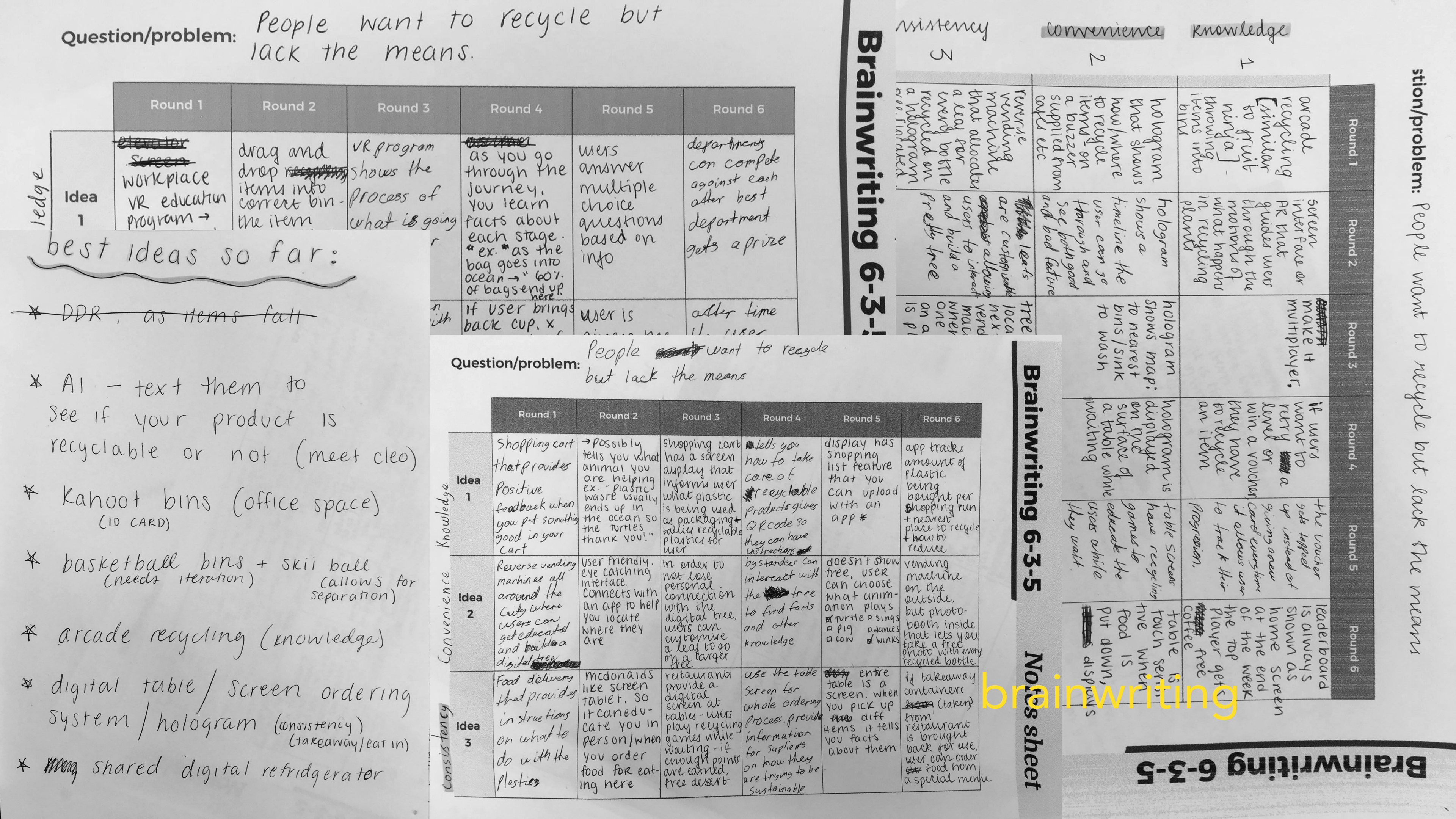
- Moved from on the checkouts to the trolley
- Screen displays the impact the items the users place in the trolley
- Would have a visible attraction in the feedback loop and would provide intrinsic motivation to pick better items

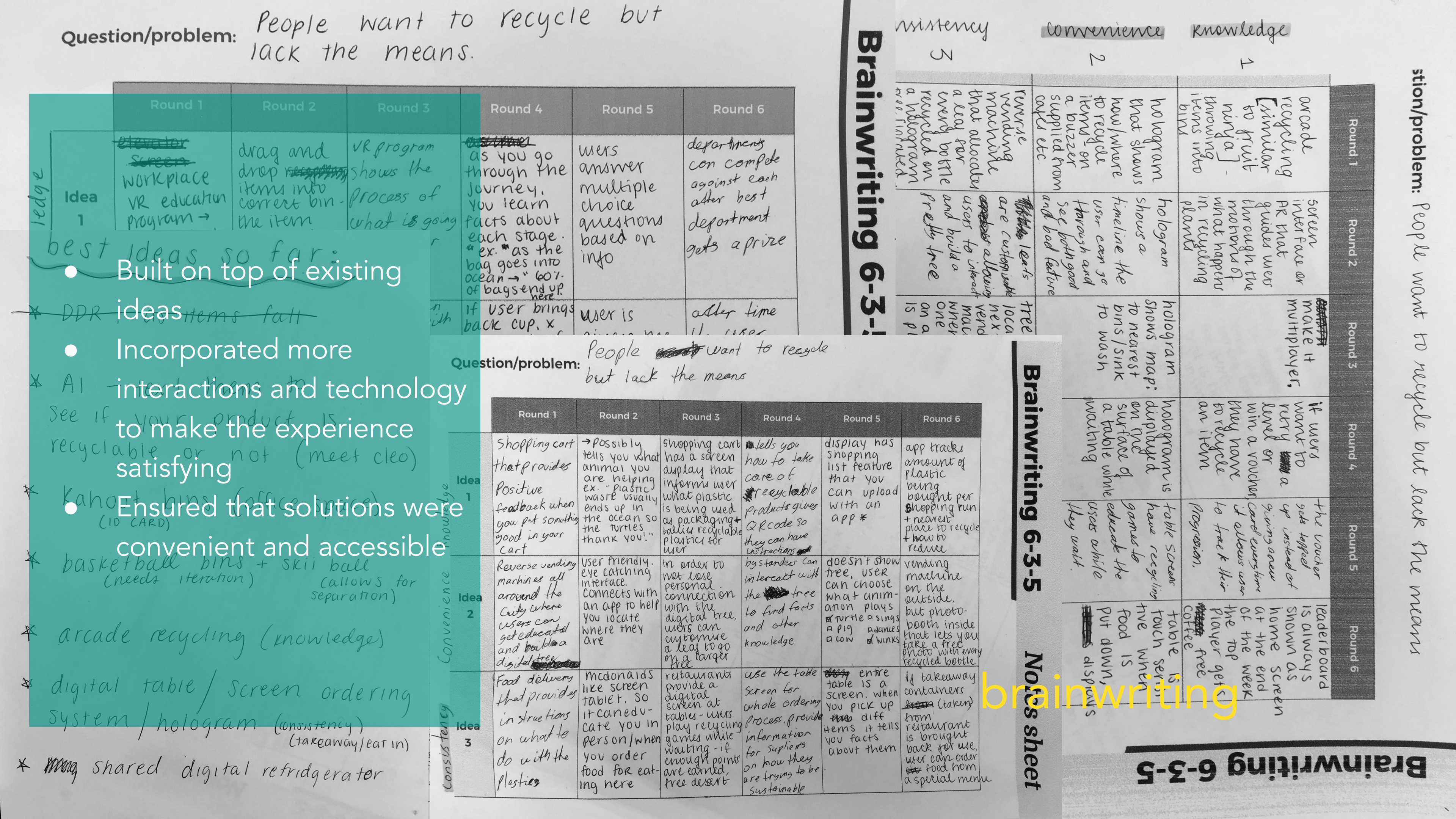
bodystorming

After doing these methods, we received feedback from tutors and peers.
We also compared them to our design criteria.

We were left with three main ideas but *we weren't satisfied with the results.*

We started over...


Question/problem: People want to recycle but lack the means.
Round 1 Round 2 Round 3 Round 4 Round 5 Round 6
Idea 1
workplace VR education program →
drag and drop items into correct bin - the item
VR program shows the process of what is going
as you go through the journey. You learn facts about each stage. "ex." as the bag goes into ocean → "60% of bags end up here"
users answer multiple choice questions based on info
departments can compete against each other best department gets a prize
If user brings back cup, x
user is
after time
Brainwriting 6-3-5
best ideas so far:
* DDR, as items fall
* AI - text them to see if your product is recyclable or not (meet cleo)
* Kahoot bins (office space) (ID CARD)
* basketball bins + skii ball (needs iteration) (allows for separation)
* arcade recycling (knowledge)
* digital table / screen ordering system / hologram (consistency) (takeaway/eat in)
* shared digital refridgerator
Question/problem: People want to recycle but lack the means
Knowledge Idea 1
Shopping cart that provides positive feedback when you put something good in your cart
→ Possibly tells you what animal you are helping ex. "plastic waste usually ends up in the ocean so the turtles thank you!"
shopping cart has a screen display that informs user what plastic is being used as packaging + tallies recyclable plastics for user
tells you how to take care of recyclable products gives QR code so they can have instructions
display has shopping list feature that you can upload with an app
app tracks amount of plastic being bought per shopping run + nearest place to recycle + how to reduce
Convenience Idea 2
Reverse vending machines all around the City where users can get educated and build a digital tree
User friendly, eye catching interface. Connects with an app to help you locate where they are
in order to not lose personal connection with the digital tree, users can customize a leaf to go on a larger tree
bystanders can interact with the tree to find facts and other knowledge
doesn't show tree, user can choose what animation plays
vending machine on the outside, but photo-booth inside that lets you take a free photo with every recycled bottle
Consistency Idea 3
Food delivery that provides instructions on what to do with the plastics
mcdonalds like screen tablet. So it can educate you in person / when you order food for eating here
restaurants provide a digital screen at tables - users play recycling games while waiting - if enough points are earned, free dessert
use the table screen for whole ordering process, provide information for supliers on how they are trying to be sustainable
entire table is a screen. when you pick up diff items it tells you facts about them
if takeaway containers (taken) from restaurant is brought back for use, user can order food from a special menu
Brainwriting 6-3-5 Notes sheet
consistency 3
convenience 2
knowledge 1
Question/problem: People want to recycle but lack the means
Brainwriting 6-3-5
brainwriting



- Built on top of existing ideas
- Incorporated more interactions and technology to make the experience satisfying
- Ensured that solutions were convenient and accessible

brainwriting

forced association

→ augmented reality + learn by being shown:

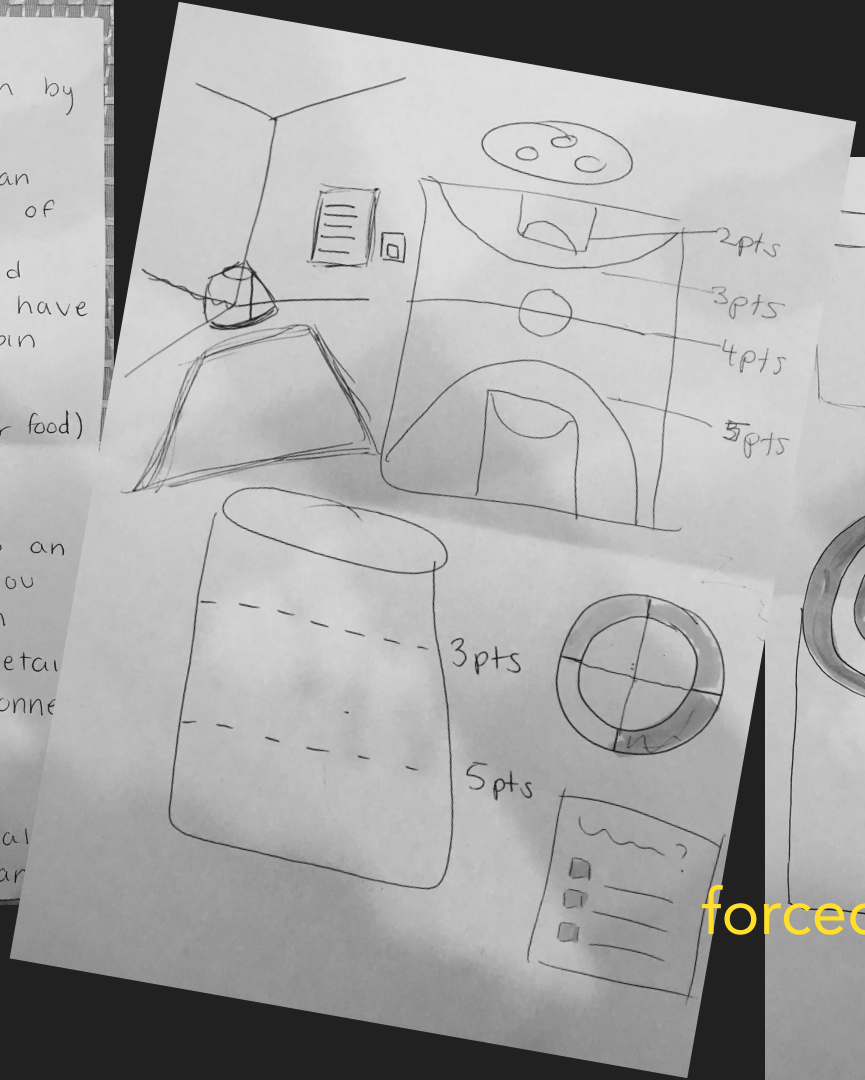
- when you look at the bin, an icon animation ~~gestures~~ loops of all the different types of items that can be recycled
- DDR, as items fall you have to gesture to the correct bin
- person gestures you towards the correct bin (scans your food)

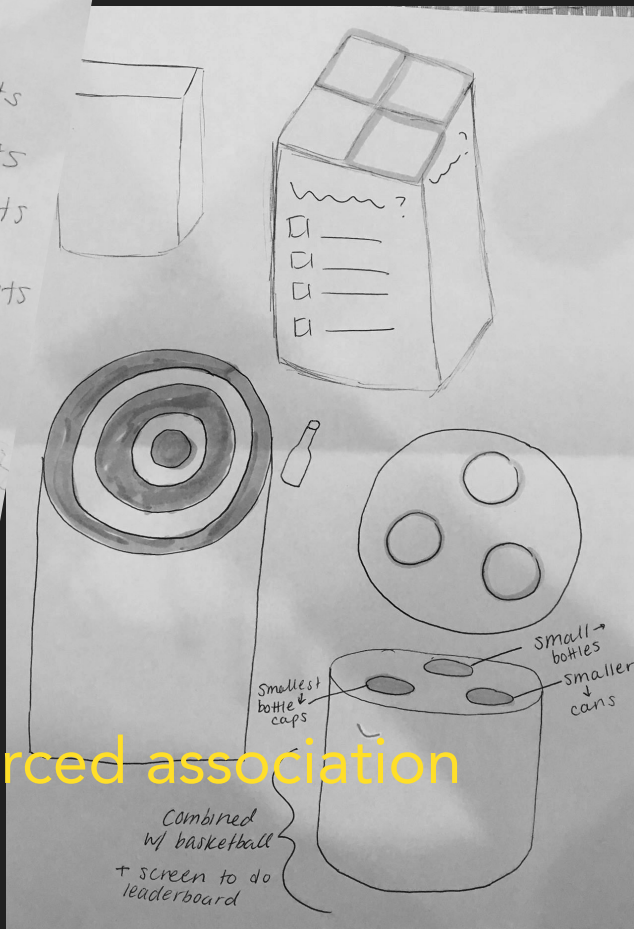
→ native app + have a new experience

- you can text a photo to an AI and they will tell you what goes in what bin

→ Phidgets + discover ~~new~~ detai

- Phidgetsensors in bin conne ed to lights to create:
- Phidget sensors → skii ball
- Phidget sensors → basket-bal
- Phidget sensors → trivia gar

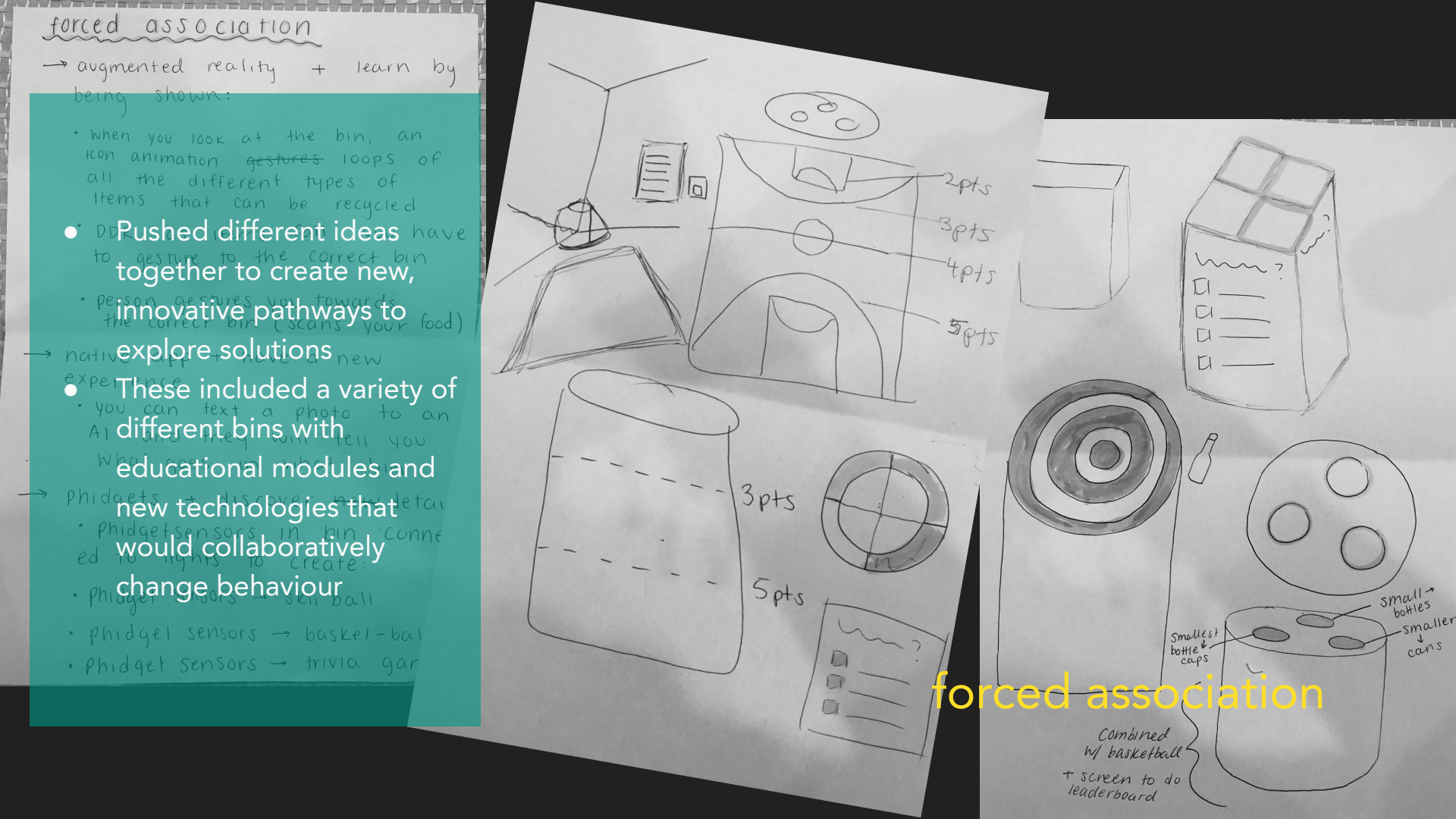




forced association

forced association

- Pushed different ideas together to create new, innovative pathways to explore solutions
- These included a variety of different bins with educational modules and new technologies that would collaboratively change behaviour



all created ideas

Arcade

Arcade style games in food courts where admission is recycling items. User earns points that they can use to buy food.

Trivia Bins

Educational interactive bins where users can test their knowledge with Kahoot - style educational questions. Iteration

Work Bins

Department vs Department to see who can recycle more. Education modules can add to the points.

Digital Tabletops

Interactive tabletops in restaurants and food courts that educate patrons and provides tools to help them.

Workplace VR

VR educational environments to test and educate staff on what they can do to help.

Digital Fridge

A mug library which requires users to pass a quiz to obtain a cup. Users can customise cups and obtain other benefits.

Shopping Cart

A shopping cart that sees what plastics you pick up. Telling you how to take to dispose of the plastics appropriately.

Reverse Bins

User recycle their items which allows them to create a digital tree as a community.

selected ideas

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Arcade style games in food courts where admission is recycling items. User earns points that they can use to buy food.

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User recycle their items which allows them to create a digital tree as a community.

Once 3 ideas were selected it was time for iterations.

bodystorming

- Helped visualise key constraints and barriers in interactions
- Made our ideas more cohesive, user friendly
- E.g: added a new aspect to the arcade recycling
- Made it accessible to individuals who are both actively environmentally conscious and beginners

bodystorming

idea [1]

Arcade Recycling

If there's a barrier in knowledge, there's an opportunity to educate & raise awareness.

Irene Jaymes

Retail Sales Assistant

"I try my best to be environmentally conscious because it hurts me to see our wildlife affected. People need to step up."

About

Age 25

Sharehouse

$ Tree Of Life

Motivations

Irene is majorly motivated by seeing the affect humans are having on wildlife. She is hurt by the pain she sees caused by humans.

Narrative

Irene is a passionate and empathetic young adult. After graduating from University, she lives with a roommate and visits her family on the weekend. She has a puppy, Snow. She loves learning how to make art out of recycled waste.

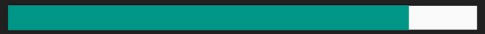
Frustrations

She is frustrated by her inability to incite genuine change within her local communities and government. She participates in many strikes and protests while engaging in social and political discussion, she feels as if her voice isn't heard. She is looking for ways to motivate her friends.

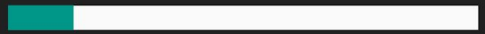
Personality

- Passionate
- Dedicated
- Independent

Knowledge



Carbon Footprint

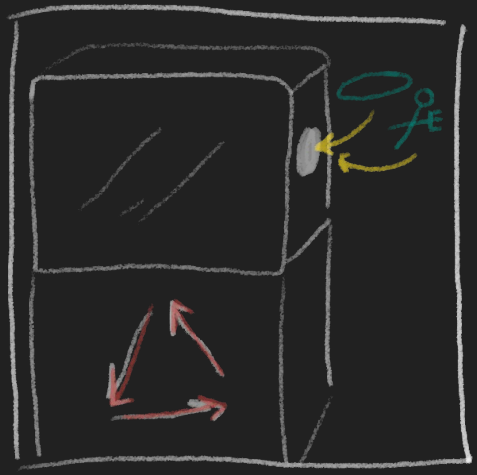


discovery

Irene is eating her environmentally friendly lunch in the food court. She forgot her reusable container at home so she got one today.

Content/bored

She takes her container to the recycle bin, because she is aware of the damaging effects of not recycling.



She throws her plastic recyclable items into the recycle bin.

Accomplished

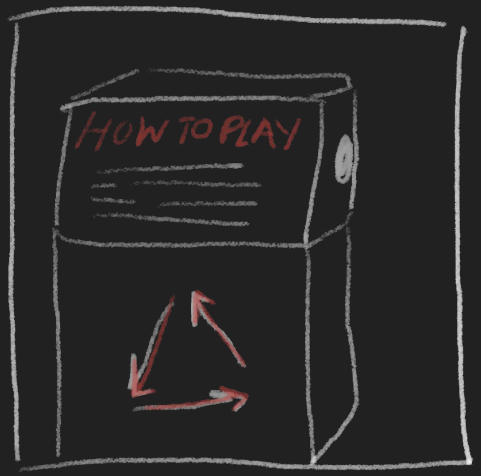
discovery

As soon as she throws something into the bin, the bin entices her to play a game.

Curious

She is immediately intrigued, as she loves helping out the environment.

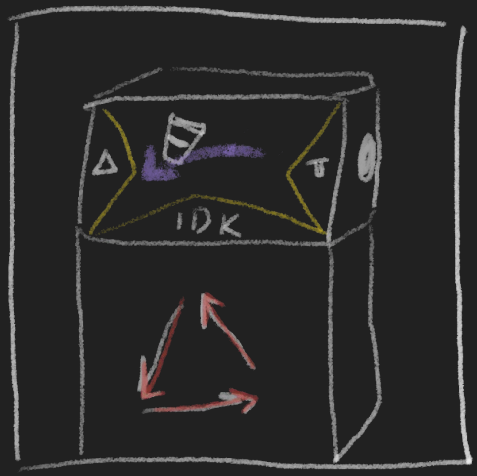
Intrigued



She begins to read the instructions on how to play: an item of waste will appear on the screen, you need to swipe it into the correct area!

Curious

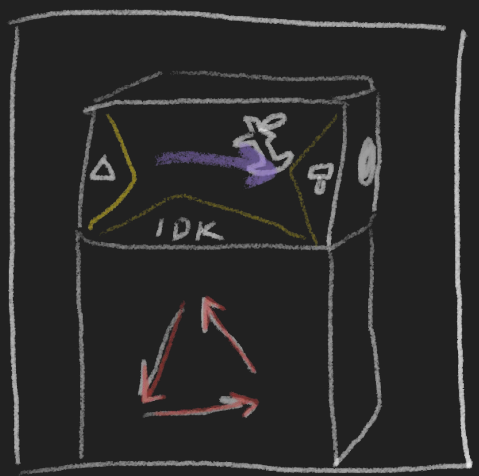
interaction



A paper cup appears on the screen and Irene swipes it towards the left side (the recycling side) for a correct point!

The user must guess (if they do not know) and swipe to the correct bin.

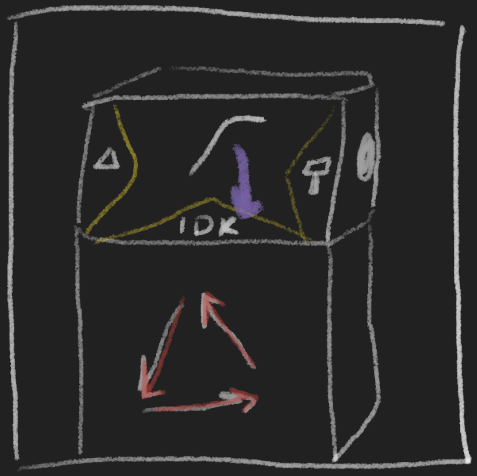
Amused



An apple core appears on the screen and Irene swipes it towards the right side (the landfill side) for a correct point!

The user must guess (if they do not know) and swipe to the correct bin.

Amused

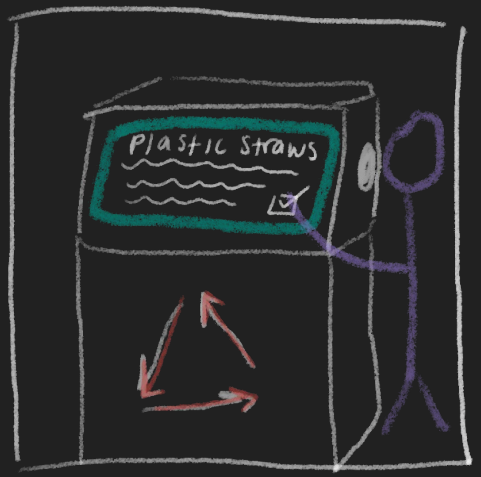


A plastic straw appears and Irene realizes she doesn't know where it goes. Luckily there is a section for unknown and she swipes it into there.

The user must guess (if they do not know) and swipe to the correct bin.

Curious

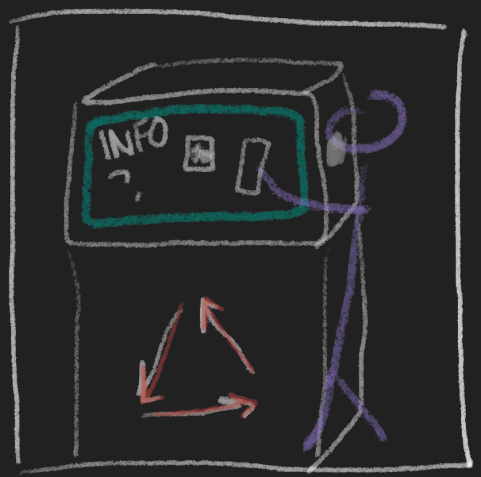
interaction



A window appears with information about plastic straws, telling her about them, their impact, and where they go. She reads through.

The user reads about the item and learns about the aspects of it they don't know.

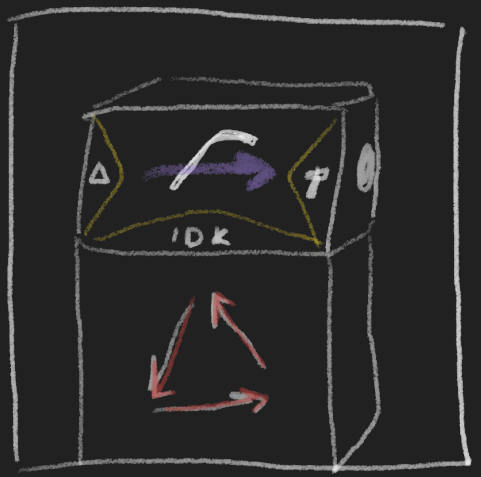
Interested



Before moving on, she reads she can download an infographic about the recyclability of common products via QR code. She downloads it, hoping she can send it to her friends later.

The user scans a QR code on the screen to download a infographic about the recyclability of products.

Happy



The game resumes, showing her the plastic straw once again. This time she swipes the straw to the correct side, as she has just learned.

The user swipes towards the correct area on the screen with new found knowledge.

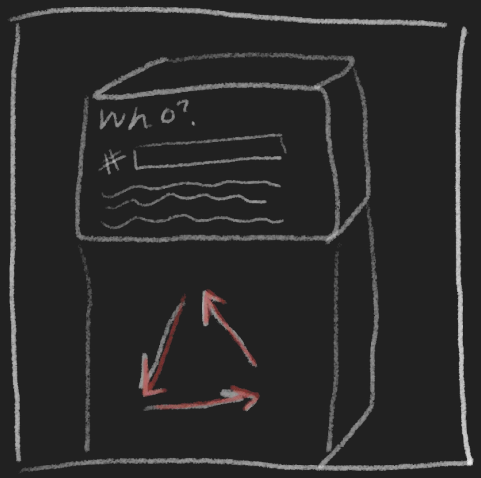
Accomplished

results

Once she finishes the short game, she is congratulated and presented with a score. The game encourages her to challenge her friends.

The user shares the game and challenges their friends with the help of the bin.

Accomplished



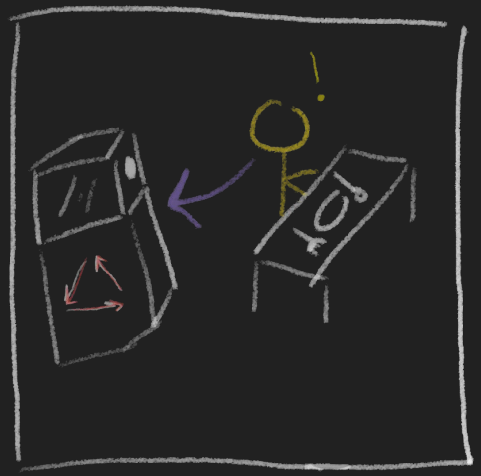
Irene decides to challenge her friend Lily, as she works nearby and eats her lunch in the food court as well. She puts in her number and crafts a short message for her.

The bin conducts and sends a message (crafted through the screen) to a phone number of their choice.

Motivated

results

Lily gets a ping on her phone, letting her know she has been challenged to play, by whom, and where the closest bin is located.



Lily notices the recycle bin sitting in the corner and remembers she was challenged by her friend Irene. She too approaches and plays the game to learn more.

Design Criteria

1. Solution must address the problem directly and aim to solve it either *during or immediately* after the process
2. Design must also encourage users to make changes to their lifestyle through positive reinforcement[1]
3. Process must simple, accessible, and convenient (no apps)
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bodystorming

idea [2]

Reversible Recycling

If there's a barrier in convenience, there's an opportunity to provide better access.

Rick Jaemes

Engineer

"There is no Planet B, know that. But how can i make a positive impact there aren't enough opportunities to do so?"

About

Age 34

Studio apartment

$ Bentley Engineering

Motivations

Rick is understands that there is no planet B. This is his motivating factor to start to make changes. He is still looking for the tools and knowledge that will allow him to make a larger impact.

Personality

- Analytical
- Work-Driven
- Independent

Narrative

Rick has been working for five years. He is goal-driven and has little time to spare on personal relationships. He only has one close circle of friends and enjoys spending late nights with them in bars or at house parties

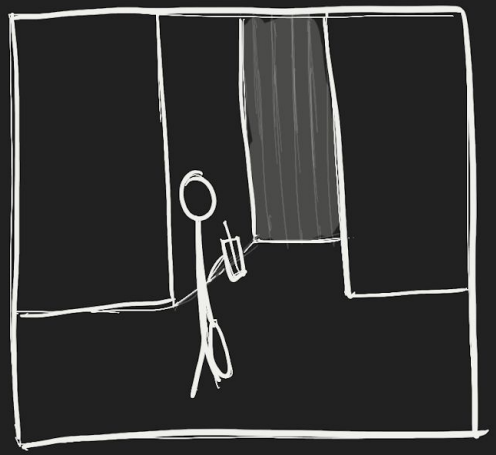
Frustrations

Rick isn't passionate about the environment. He understands his actions have consequences and he tries to recycle as much as possible, but recycling plastics isn't clear to him. He isn't proud of it but he oftens get takeaway as it is most convenient.He gets frustrated as he has to throw it out in general waste due to lack of recycling bins around.

Knowledge

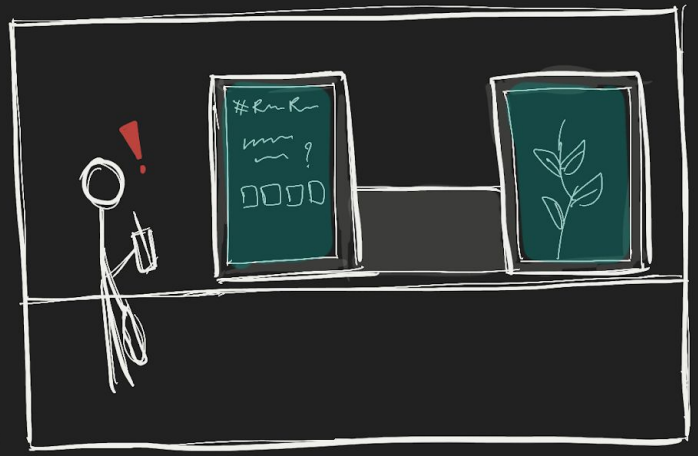
Carbon Footprint

discovery



Rick is walking back to the office from his lunch break. He bought takeaway food from a store nearby as it is most convenient for him.

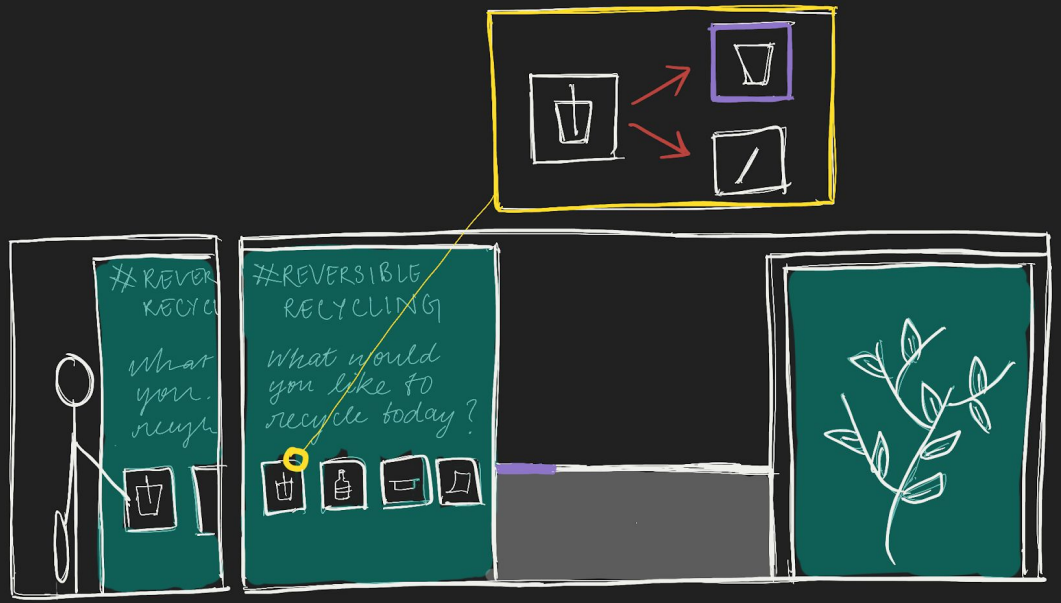
Content



While walking back to work, he discovers a “machine”. His interest is piqued, so he moves closer to examine it.

Intrigue

interaction



He approaches the machine and interacts with it.

The button splits into two panels, indicating that Rick has to recycle these items separately. Rick has just finished his drink and decides to test it out.

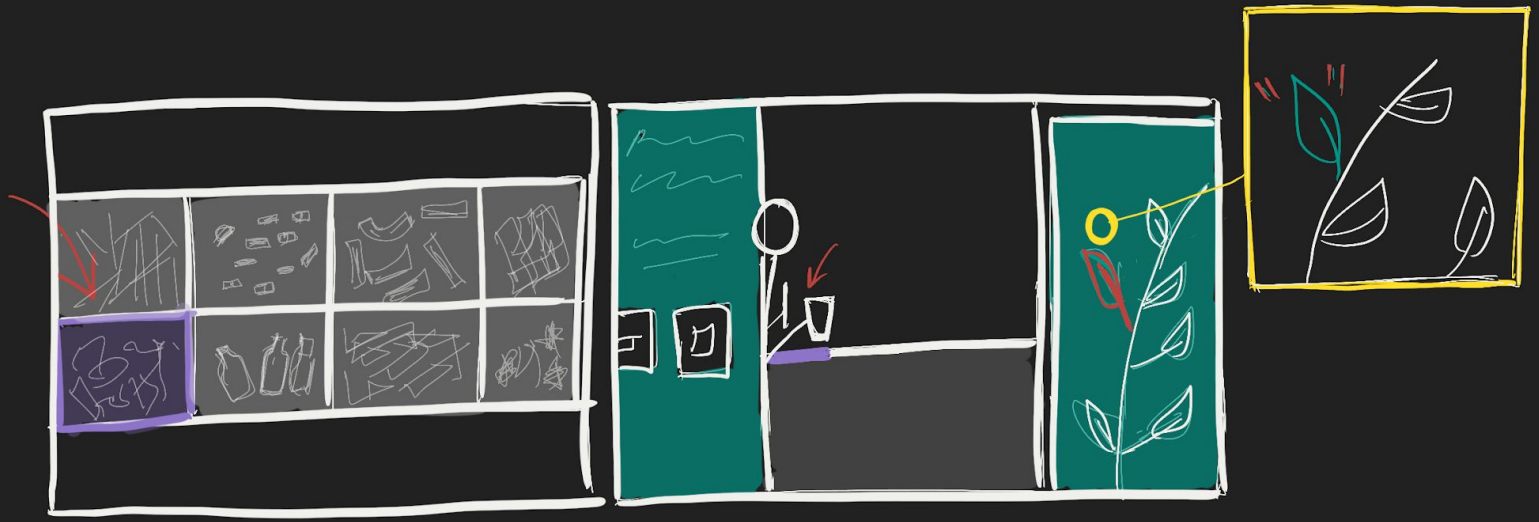
User taps the button for disposable cups.

When tapped, the button separates the items. When these individual icons are then tapped, a space in the bin lights up - respective to the colour on the screen - to indicate where the item should be deposited.

Intrigue

Desire to learn more

interaction



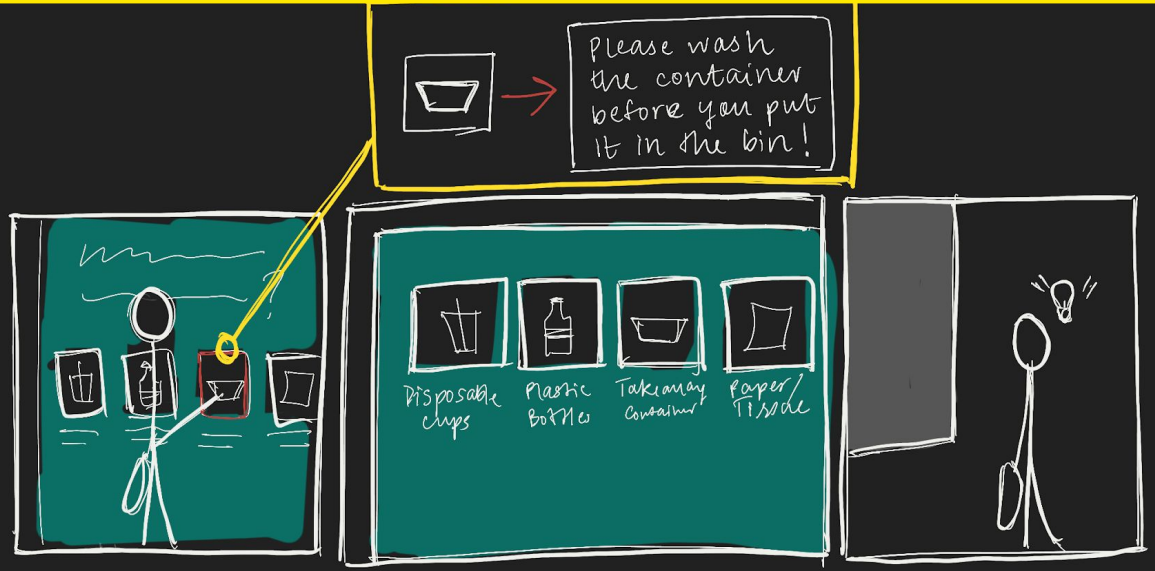
When Rick taps on the cup icon, he observes that one section of the bin has lit up to the colour on the icon.

He walks over to the section and deposits the cup in the slot. He then does the same for the straw. Rick notices that a new leaf has been added to the strange moving tree on the right, responding to the act of him recycling.

Each icon directs the user to a particular slot for item to be deposited. This removes the aspect of confusion and interactively guides users to recycle items properly.

Satisfaction

interaction



Satisfied that he was able to recycle his empty cup without confusion, he goes back to find out about the recyclability of takeaway containers.

User taps on other icons to reveal how they are recycled.

Encouraged

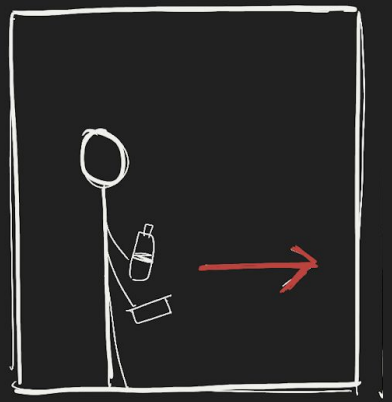
He learns that takeaway containers have to be rinsed before they can be recycled.

User gains the ability to conveniently learn information and apply it to create positive recycling change within daily life.

Pleased

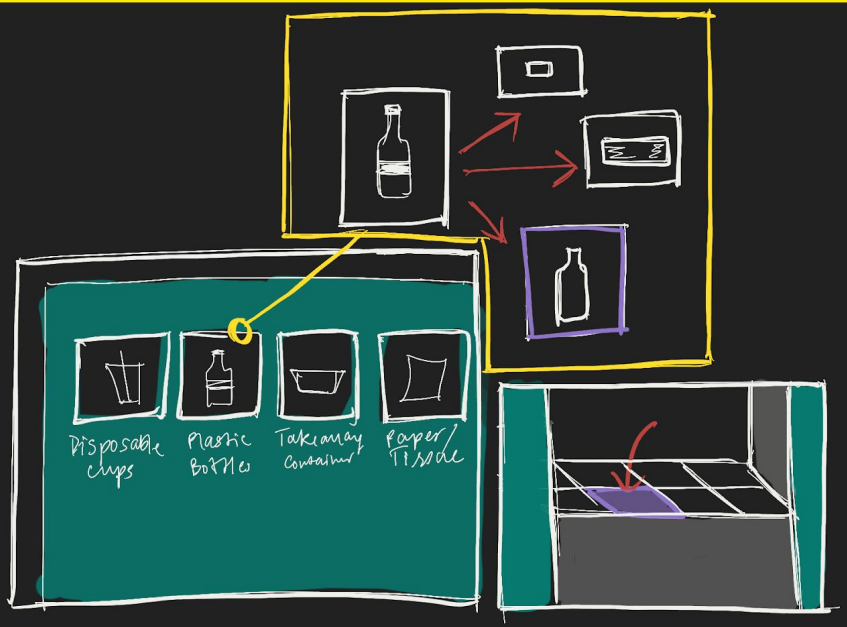
Finding this information useful for his daily life, he then scans the rest of the options and decides to come back after work.

interaction



A couple hours later, Rick comes back after work to recycle his takeaway container and plastic water bottle from lunch.

Desire to learn more



Confused on how to recycle the bottle, Rick taps on the icon for guidance.

Different items have different recyclability rules, thus user can always check the guides to ensure that they are recycling correctly.

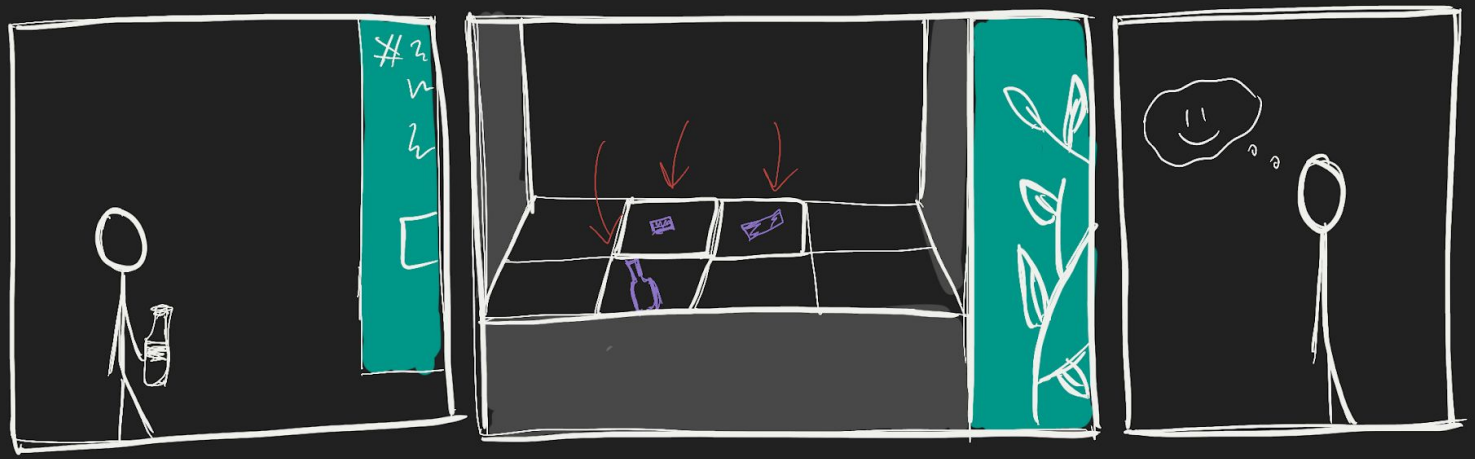
Encouraged

After tapping on each icon individually, Rick is directed to throw the items in the respective slots.

This interaction encourages users to become familiar with how to recycle in convenient ways.

Confident

results



A couple weeks later, Rick is stil using the bins, however he doesn't need the screen guides anymore.

Confident

Rick has become accustomed to the recyclability of different products and has managed to incorporated this practice into his daily life, carrying this knowledge on to his home life.

Rick confidently recycles his products everyday and is highly pleased about his positive environmental contributions.

Pleased

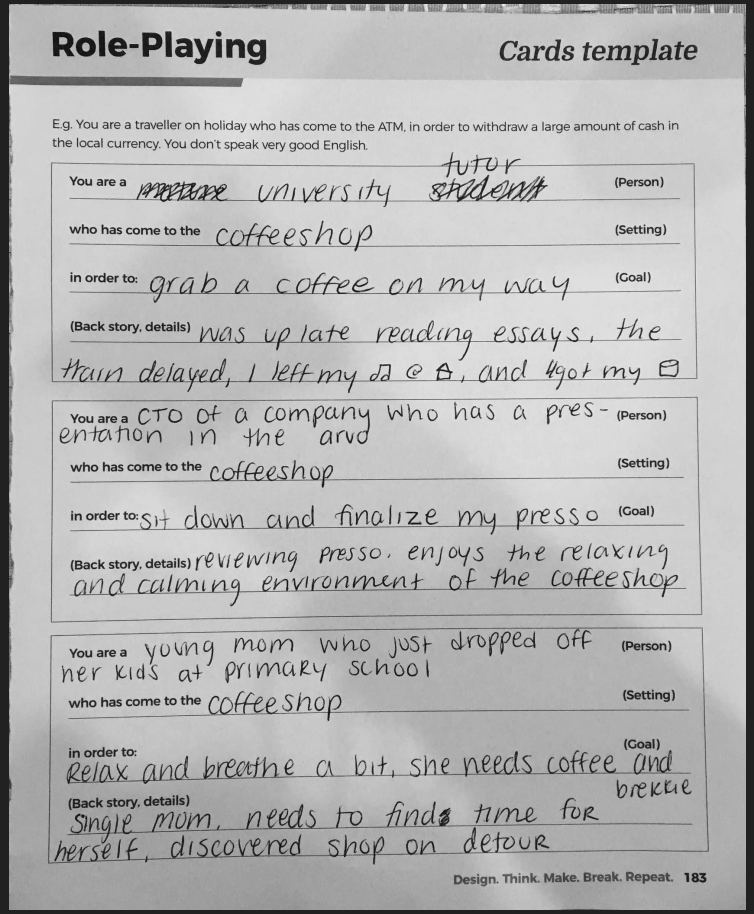
Design Criteria

1. Solution must address the problem directly and aim to solve it either *during or immediately* after the process
2. Design must also encourage users to make changes to their lifestyle through positive reinforcement[1]
3. Process must simple, accessible, and convenient (no apps)
4. Design must be seamless and unobtrusive to the user
5. Solution sustains positive recycling habits post-interaction

idea [3]

Shared Refrigerator

If there's a barrier in consistency, there's an opportunity to motivate frequency.



Role-Playing

Cards template

E.g. You are a traveller on holiday who has come to the ATM, in order to withdraw a large amount of cash in the local currency. You don't speak very good English.

You are a ~~mature~~ university futur ~~student~~ (Person)

who has come to the coffeeshop (Setting)

in order to: grab a coffee on my way (Goal)

(Back story, details) was up late reading essays, the train delayed, I left my ♫ @ ⌂, and ~~4~~got my ⊟

You are a CTO of a company who has a pres- (Person)
entation in the arvo

who has come to the coffeeshop (Setting)

in order to: sit down and finalize my presso (Goal)

(Back story, details) reviewing presso, enjoys the relaxing and calming environment of the coffeeshop

You are a young mom who just dropped off (Person)
her kids at primary school

who has come to the coffeeshop (Setting)

in order to: (Goal)
Relax and breathe a bit, she needs coffee and brekkie

(Back story, details)
Single mom, needs to find time for herself, discovered shop on detour

Role Playing

Role Playing

- Imagined a variety of situations with different characters that aimed to develop empathy
- Investigated how emotions and past experiences impact a user's daily habits and attitudes with eco-friendly behaviours
- Wanted to visualise how different people would be open to our ideas

Role Playing

Kyla Jaimes

Music Teacher

"If I tried, I think I could do more for the environment."

About

Age 27

Condo

Cherrybrook Technology High School

Motivations

Kyla acknowledges the negative impact she makes on the environment. She is looking for ways to remedy this issue by putting consistent effort into creating small positive changes within her daily lifestyle.

Personality

- Outgoing
- Creative
- Ambitious

Narrative

Kyla actively spends time with her friends and peers. As an ambitious pianist, she frequently eats out, or she uses Uber Eats for quick food deliveries when she needs to prepare for concerts or lessons. She visits the same cafes for coffee every morning.

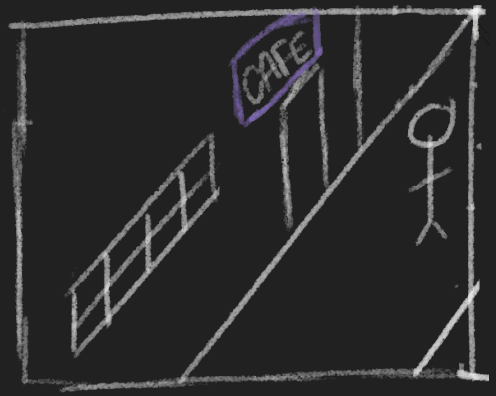
Frustrations

Because Kyla orders in so frequently, she tries to wash her takeaway containers to recycle or use them for later, but she often forgets. Feeling guilty the amount of plastic she buys every week, she bought a keepcup to be more environmentally conscious, but she often forgets to wash it and is inconsistent with its use.

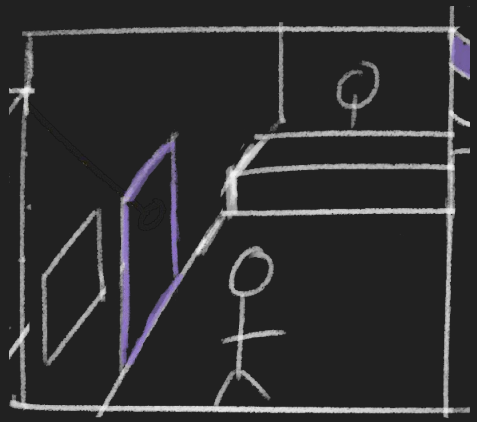
Knowledge

Carbon Footprint

discovery



Kyla is walking down the street to her favorite coffee shop.



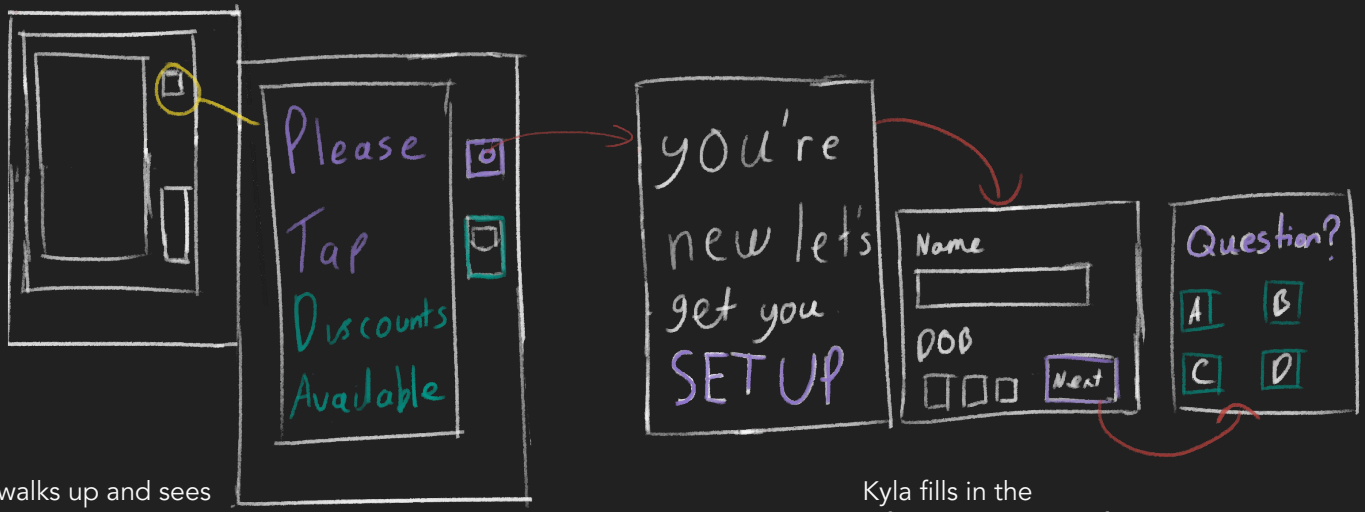
As she walks in and get greeted by the staff there her attention is drawn to this flashy new thing in her coffees shop. She is drawn in by the aesthetics and visual appeal of whatever it is.

Intrigue

She walks over and sees a fridge, dispenser type thing and explores a little due to her being attracted by the big digital screen and digital artwork on the wall.

Excite

interaction



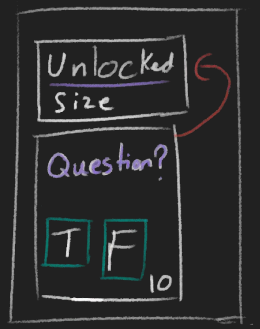
Kyla walks up and sees their is a rewards program and the ability to get a reusable cup so she picks up a card and taps it on the light up spot

Users tap their card.

Kyla fills in the information need. After it takes her through guided walk through explaining what this vending machine is and how to use it.

User is enters details to make the interaction more personal later on. It then take the user through a walk through to get them acquainted with the app

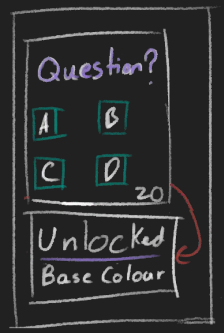
interaction



She passses 10 coffees. So she unlocks a new customisation option.

Users answers a T/F question correctly

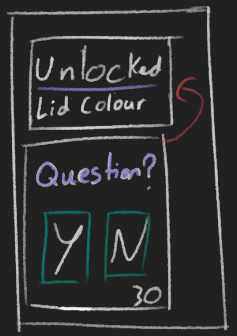
Building excite



She passses 20 coffees. So she unlocks a new customisation option.

Users answers a multi choice question correctly

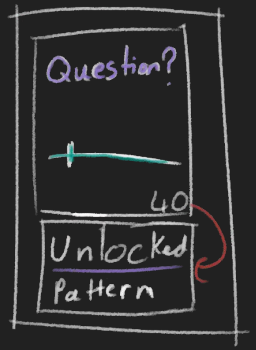
Building excite



She passses 30 coffees. So she unlocks a new customisation option.

Users answers a yes/no question correctly

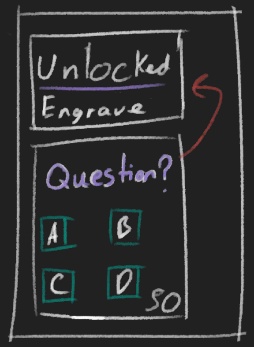
Building excite



She passses 40 coffees. So she unlocks a new customisation option.

Users estimates a response correctly

Building excite



She passses 50 coffees. So she unlocks a new customisation option.

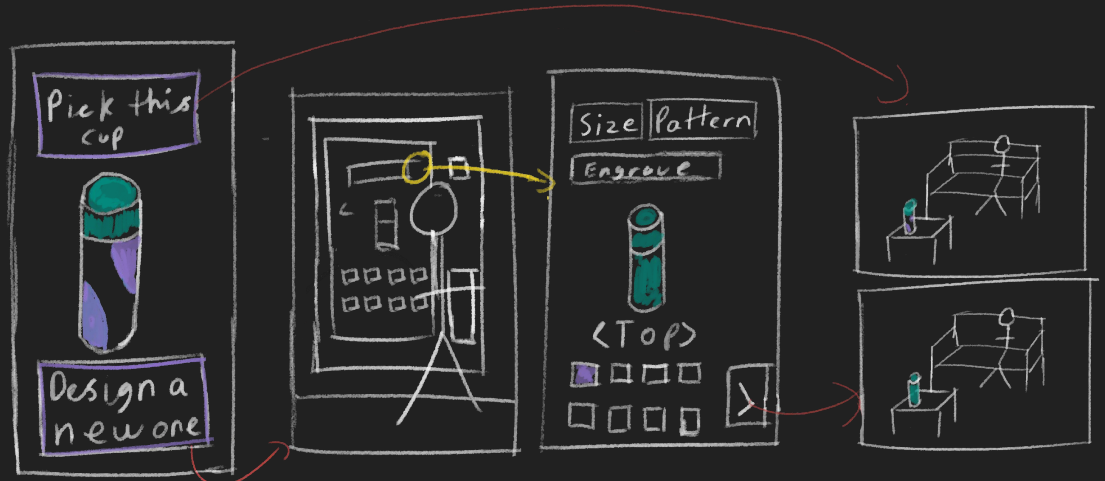
Users answers a multi choice question correctly

Building excite

She has successfully answered 50 questions and can know design and get a personalised cup

Massive excitement and intrinsic satisfaction

results



Kayla reached 50 taps so now she gets a chance to get her keep cup. After all those unlocks she has the ability to design a personalized cup for her

User gets to pick if they want to resign or design a new cup

Intrinsic satisfaction

Kayla picked to design a new cup and play with all the possibilities she has earned for herself

User gets to customise the cup

Delight

Kayla is sitting at home with her brand new personal keep cup.

Delight and satisfaction

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Thank you for your time.

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