The Team

🌱 Jordan B.   🌱 Cade C.   🌱 Riya V.   🌱 Nadia W.

Problem Domain: Environment & Digital Democracy

Increase environmental action and awareness.

Our initial needfinding indicated that though people like the idea of doing environmental good, many barriers prevent tangible engagement. Mostly, the issue is convenience or preference. For convenience, people mainly take action when it is easy, or readily integrated into their schedule. For preferences, people opt for personal or financial gain over environmental contribution, or fixate on some participation avenues while neglecting others. We further explored the role of **convenience** and **preferences** in influencing environmental action, as well as what can be a potential **motivator**.

Initial POV

1. **We met** Tejal, an overscheduled, media-driven high schooler. **We were amazed to realize that** she enjoys doing good for the world, but only when it's convenient and/or trendy or fun. **It would be game-changing to** couple environmentally positive actions with increased social capital (coolness), fun and ease, and a shared social experience.

"My teacher made a game where he would give us 100% on our exams for the semester if we caught him saying starfish, since it's SEA STAR, not starfish. It stuck with me, and now I'll correct people if they say starfish."

We met **Anasuzy**, a 19-year-old college student from San Jose, at Verve Coffee. **Insight: Her relationships with others inspire interest and action, particularly a willingness to share information.** A positive relationship with her high school teacher helped push her to be even more interested in environmental science and issues. She fondly remembered a game he played to teach the students a science fact (sea stars are not star"fish" because they are invertebrates) and likes to share that with others. She also said she admires her friend running for San Jose City Council for mainly environmental reasons, and shares his campaign posts on social media. Additionally, through the story of a dog sitting on a nail, whining but not moving, she said people like to complain but won't usually take action if the pain is not severe enough.

We met **Dian**, a Genentech developer in her early 40s from China who now lives in San Francisco, at Verve Coffee. **Insight: Convenience and relevance guide her choices, and she thinks design changes can solve issues without requiring significant changes in effort.** For news, she mainly follows headlines and topics relevant to her interests. She believes that a solution to helping the environment is for things like products to be redesigned in order for sustainability to be more easily and automatically integrated into people's lives, ex. instead of plastic cups, paper or compostable plastic cups are available.

We met **Vincent**, a 47-year-old Genentech researcher from France who now lives in San Francisco, at Verve Coffee. **Insight: Policies force actors into action, and more pressure should be focused on government and industries to change than on individuals. Also, it is too much work for people to think about all the ways they should contribute environmentally.** He believes government and industries impact the environment at least four times more than individuals do, and that regulating all three groups with policies ensures the highest likelihood for change to actually happen. It is too overwhelming for regular people to constantly factor environmental-consciousness into their daily lives.

Top-left quadrant

- Carpools usually happens when going to event or convenient
- From France
- Moved to Montreal at 20; lived for 15 years
- Have lived in Bay for 8 years
- Grew up in China until finished masters
- Has lived in Florida, St. Louis, and Seattle
- Has lived in Redwood City for 6 years
- NPR credible b/c more like interview than emotional debate
- Gravitated to NPR because similar to news in France
- Somewhat interested in environment
- Most interested in foreign relations
- Learns about economics b/c impacts job
- Lot of people lack knowledge (Ex. Chinese farmers
- Technology should play role in change
- Keeps up with China because used to live there

Top-right quadrant

- All news sources have some bias
- Less emotion = less bias
- French news is better at neutrality than U.S. news
- Environment isn't what he tends to look at when looking at news
- Cares about things she relates to/impact her
- Doesn't feel need to inconvenience self to carpool
- Composting, anti-littering, etc. isn't enough
- Sustainability doesn't play role in what chooses for groceries
- Doesn't care much about environment besides when presented with it
- Only notices news that is eye-grabbing (Ex. Trump)
- Bus is not worth any benefits when car cuts commute so much

Bottom-left quadrant

- Work for pharmaceutical company (originally biotech co.)
- Met at social event related to work
- Drives own car 95% of time
- Doesn't buy processed/sugary food because of taste
- Drives self to work most of the time
- Research role
- Development role
- Follows French and U.S. politics (U.S. moreso now)
- Listens to NPR in morning
- Doesn't pay much attention to politics
- Kite surfs -- goes late in work day if weather good
- Avoids plastic bags when possible
- Looks at big headlines
- Has tried Scoop driving app
- Listens to sports + entertainment
- Sometimes carpools with colleague

Bottom-right quadrant

- Enjoys learning about physics, math, biology
- NPR has good diversity of topics + reporting quality
- Recycling + composting very advanced in U.S.
- 80% of environmental fault is at industry level
- Government should force people to be environmentally friendly if want change
- Sad when read about shark with stomach full of plastic
- FRUSTRATED that not enough attention being paid to damage on industry level
- Offended when saw guy throw candy wrapper on ground
- Difficult to keep track of all the things one needs to do
- Loves pets (cat + dog)
- Bus takes too long

We met **Daniel**, an 18-year-old college student from Wisconsin, at Tresidder. **Insight: Exposure, knowledge, and relationships play pivotal roles in developing his interests. Otherwise, his actions are primarily motivated by convenience.** Because he did not have much exposure to environmental issues growing up, they are something he is not very knowledgeable about or interested in. He does not know exactly what the consequences of environmental damage, like climate change, are. On the flipside, he cares about social justice issues because he has seen and can see how they directly impact people like his peers. He gets his news either from school, friends, or the Chrome app.

1. **We met** Will, a 30-year-old designer who stays informed on environmental issues. **We were amazed to realize that** his lack of ability to vote or participate directly in government makes him feel like he cannot do anything to take action; however, he ignores many other ways he could get involved. **It would be game-changing to** help him overcome his paralysis in mindset over what actions he can take or feel are worthwhile taking.

2. **We met** Vincent, a 47-year-old researcher for biotech/pharmaceutical company Genentech who says it can be overwhelming for people to think about all the ways they can act eco-conscious daily. **We were amazed to realize that** he believes most pressure should be on the government and industries that cause 80% of environmental problems, rather than on individuals who are responsible for 20%, and using laws, policies, and practices is the best way to spur all three actors to action. **It would be game-changing to** empower people with the ability to act on their 20% contribution *and* pressure/influence government and industries to take responsibility for their 80% contribution.

3. **We met** Tejal and Daniel, two teenagers who expressed they would not go out of their way to take environmental action if it's inconvenient. **We were amazed to realize** they both recognize the environment as an issue, but aren't knowledgeable enough about the details to feel motivated to take action, unless said actions are easy, already ingrained, "cool," or already being done by friends. **It would be game-changing to** help people learn the real-world impacts of environmental issues in a way they can easily digest and find fascinating, fun, easy, or more pressing to care about.
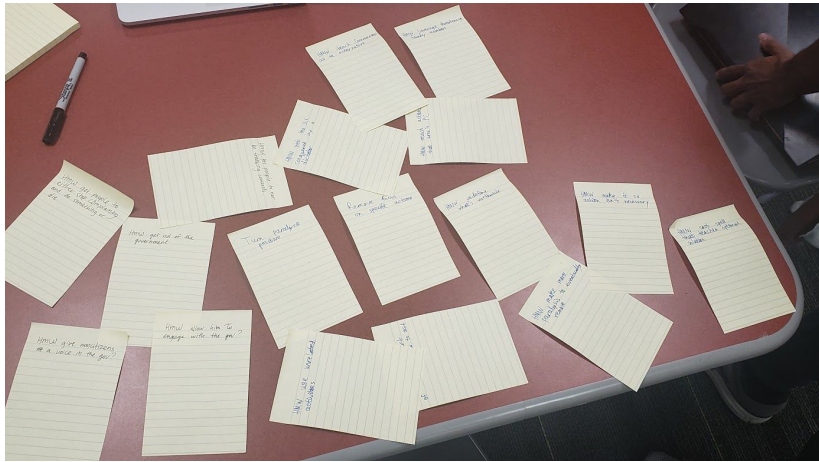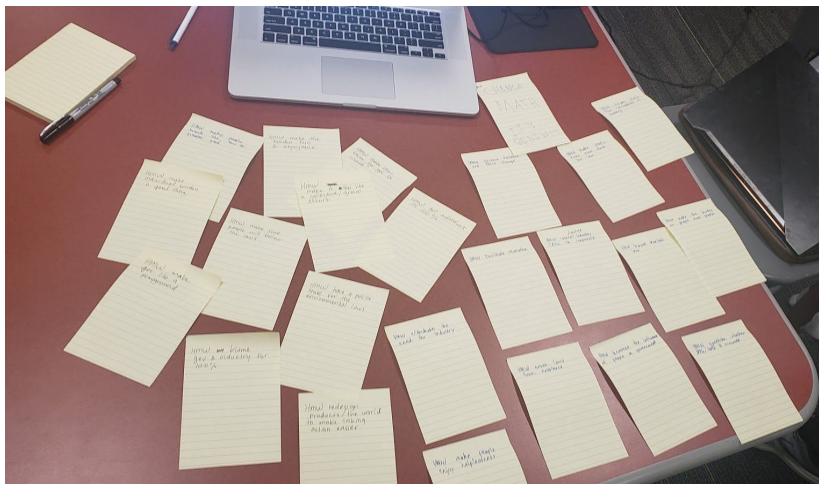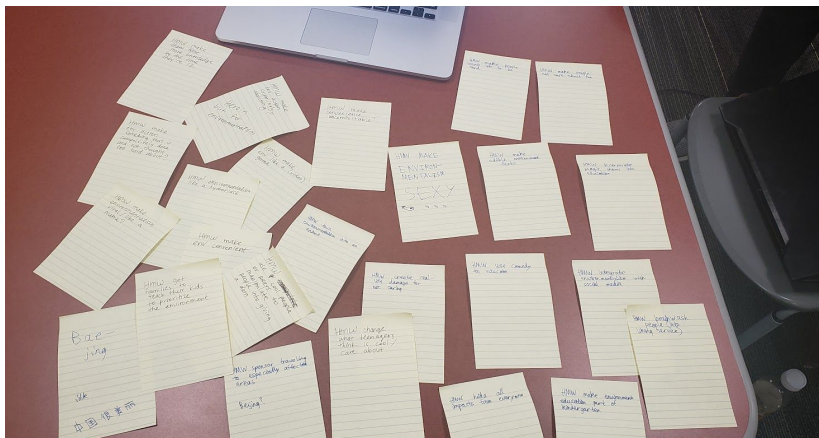
POV #1

POV #2

POV #3

HMW…

POV #1
● Redefine what's worthwhile?
● Remove the focus on specific actions?
● Cast a spell that teaches the optimal solution?
● Increase the pain of paralysis to the point people will want to relieve it?

POV #2
● Make environmentalism feel like a collective/group effort?
● Make people break the law for the greater good?
● Coerce industry CEOs to cooperate?
● Facilitate revolution?

POV #3
● Make environmentalism viral or like a meme?
● Tie environmentalism with things that people already like?
● Brainwash people into liking [environmental] service?
● Destroy the environment?

Chosen HMW Statements

1. How might we make burden and discomfort a good thing or result in something good? (POV #1)

2. How might we make engaging in environmentalism more like a video game? (POV #3)

3. How might we make environmentalism sexy, pleasurable, and/or addicting? (POV #3)

Solution Brainstorming
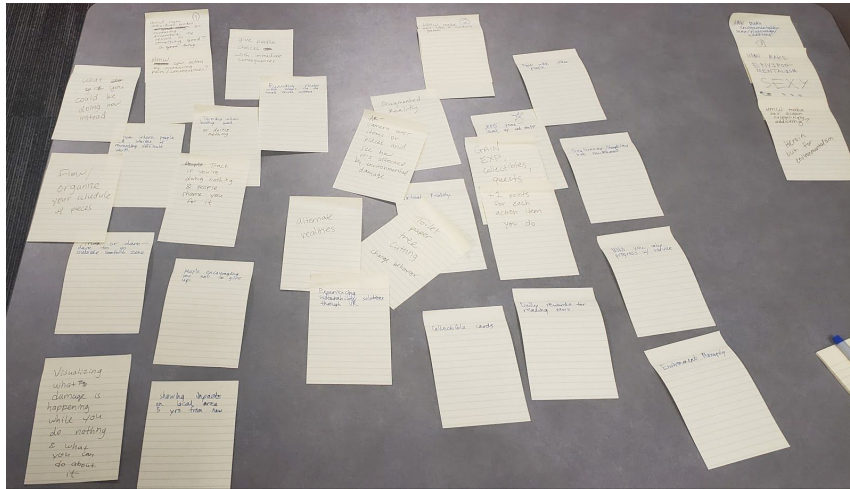
HMW #1 and #2 Solutions
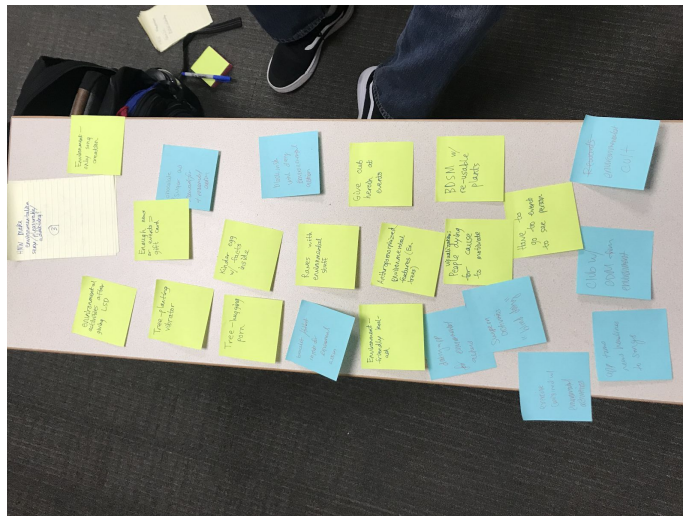
HMW #3 Solutions

Chosen Solutions

1. From the HMW #1 brainstorm, we chose: "~~Truth or~~ Dare – dare to go outside comfort zone."

2. From the HMW #2 brainstorm, we chose: "JRPG (Japanese role-playing game) – level up and 'stuff' (gain experience, collectibles, quests, [points] for each action item you do)."

3. From the HMW #3 brainstorm, we chose: "Swipe on activities – blind dating."
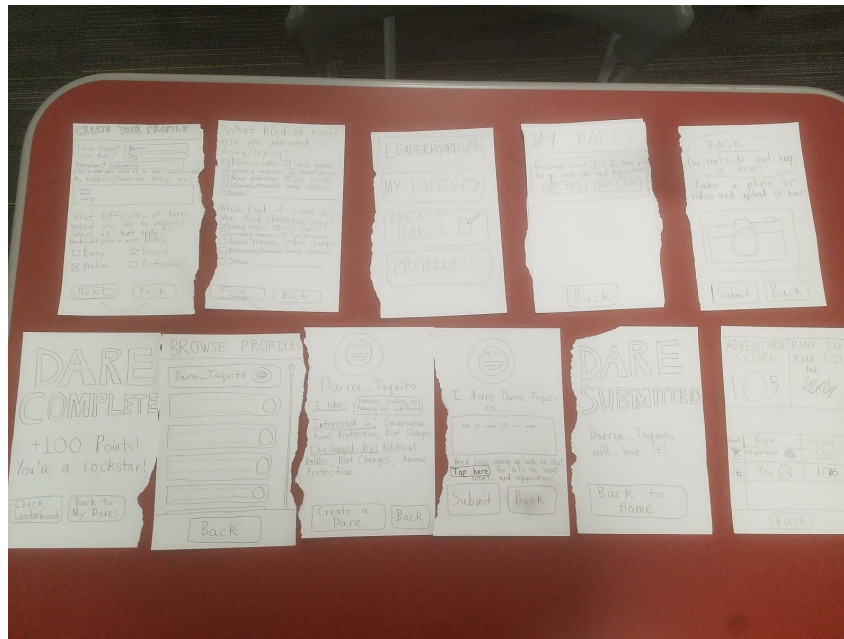
     Earth or Dare allows users to exercise green actions to feel validated by, engage, and compete with a like-minded community. This app lets users create dares for others, based on that user's likes, what environment-related activities they find interesting, and which activities they find challenging. Users earn points by both completing dares they are given (harders dares earn more points) and by receiving "likes" on dares that they create for other users. Users can compare their total score with other users on a Leaderboard. **We assume the lure of generating social capital would motivate people into taking action.** This is based on our finding that social forces and relationships greatly influence people's actions and interests.

     On a piece of paper, we had Rachel check off with pencil some of her sustainable- or environmental-related dares she might be interested in, what kinds of events she finds intimidating, and what level of difficulty dares she wanted to receive before starting. She was informed that she started with zero points, and that receiving a "like" on a dare she creates gives her five points, while doing a dare gives her one hundred. We first had her decide between checking the Leaderboard, creating a dare, or checking if she received any dares. She chose to check if she had received any dares first. When simulating checking her inbox, she saw a notification that someone sent her a dare. To simulate the experience in a more tangible way, upon clicking the notification in her paper inbox, we sent her a text over Messenger with a dare appropriate to the preferences she checked off. We dared her to go outside, take a photo of herself hugging a tree, and upload it by replying with the photo. However, she did not actually perform the action and chose instead to proceed by just pretending she did. Her reason is because it is just a simulation, so she did not feel like actually doing it, but claimed she might if it were

real. We awarded her 100 points anyway. She then created a dare in the app by writing it in the section on our paper, then typing and sending it on Messenger. Her dare was, "Eat no meat for one week." She did not notice that there was a suggestion to check for local events. She got a notification that someone liked her dare and was awarded five points, updating her score to 105 points.

> earth_nut_17 has liked your dare! +5 points!

She then checked the Leaderboard and was happy to see she now ranked first place, beating a user who only had 100 points.

This experience prototype only partially validated our assumption. While Rachel enjoyed seeing her profile gain points and move up in ranks relative to others, it is ambiguous whether or not the system would have really incentivized her to take action. She said she would have taken the photo with the tree, but she did not in our simulation. Also, she did not notice the suggestion for local events, which was meant to be a learning opportunity for her to discover what environmental-related events are in the area and how else she might be able to take action.

Prototype 2: GRPG
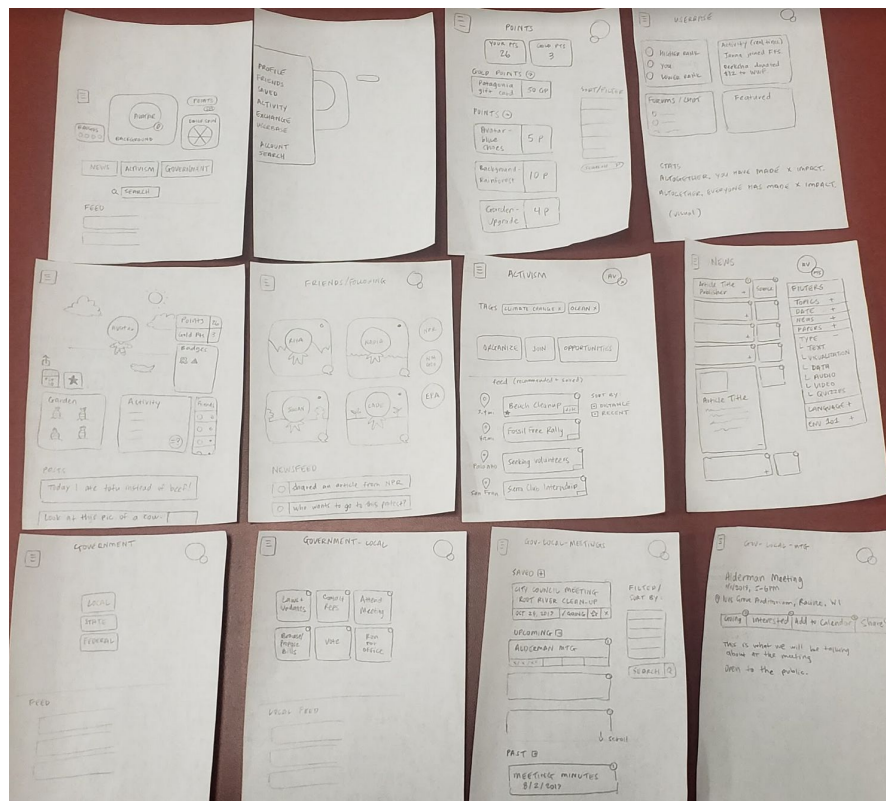
In this idea, the user operates within game mechanics to simulate a kind of role-playing game. At its current stage, *GRPG* is more like an information hub where you can only exchange points for either customization options or real prizes. We were inspired by Tejal's interest in customizing her HydroFlask with stickers and Daniel's interest in video games to combine environmentalism with something fun. We were also inspired by how some interviewees mentioned financial incentives might motivate them to act more sustainably, hence the inclusion of real prizes (which could only be earned through more challenging tasks). **We are testing the assumption that in a game setting, people would have fun and be incentivized to check out more things in order to earn more points and be able to exchange them for rewards, either cosmetic or real.**

being able to earn and exchange points for rewards incentivizes users to check out more things.

To simulate the prototype, we showed Deeksha the drawing of the home screen of the demo and choose what to interact with. We never prompted her with what to select. She first chose the Daily Spin and was awarded two points, a random number. To simulate receiving points, we gave her pennies to represent an animation simulating her receiving points that got added to her total. However, to stay true to an app-like experience, she was not able to keep the pennies, so we would give her the appropriate number of pennies, then just update her score on a phone counter and take them back. The next thing she did was "click" her Avatar, pulling up her profile. She then checked her points, which led to a store where she could exchange her points for items. She only had two points so was unable to buy anything. She also asked about the difference between points and Gold Points (GP); GP are able to be exchanged for real prizes, the example being a Patagonia gift card. However, this demo didn't allow an opportunity to earn GP. She then checked her Friends and wanted to see how many points they had. None of these actions earned her points so she was just looking while we noted what piqued her interest. She then clicked Activism from the home screen. She got a point for clicking on the Beach Cleanup. She then went to News. She got two points for clicking on the source for an article. These categories (Activism and News) were dead ends for the purpose of this prototype, so she went to Government and chose Local. She then chose Attend Meeting and received a point. She then chose Alderman Meeting and received a point. She then chose to add the event to her calendar (so we had her actually add it to her phone calendar) and mark that she was "Interested" and received three points total. She then went back to the store and bought the shoes for 5 points, then equipped her Avatar with them. She never went to the Userbase (community) page because she did not realize it was an option, though nothing on there would have earned her points in this iteration, so it does not matter to our assumption.

Deeksha enjoyed the game and ability to customize, as well as being able to see what her friends were up to. She liked earning points and the reinforcement of the "penny animation" with every addition and was especially enticed by the Daily Spin. She expressed doubt over who would be interested enough in environmentalism itself but thinks the game and social aspects were fun and motivating. She did not care about the financial incentive (gift card) in this demo

and more so wanted to customize her character, but that could be because earning GP wasn't an option. The goal of this solution is to expose users to new information, which is broken into chunks with the ability to earn points for every "next step taken." The assumption was partially validated because Deeksha did click items to try to earn points, exposing her to more information, but because it was a test-run that she felt obligated to finish, we don't know how effective it is in having her actually take action.

Prototype 3: Greendr

Greendr is a dating prototype that displays nearby events, allowing users to swipe right (Yes) if they want to attend and get matched with others who also swiped on that event. Hopefully users can discover environmental events and the promise of meeting people would encourage them to be more environmentally involved. **The assumption is that users would enjoy the swiping mechanic for events, compounded with the thrill of getting matched with like-minded strangers.** Users would not be able to see photos of their matches until they are within a close enough distance at the event, to build good anticipation/suspense and encourage them to actually attend the event in order to uncover the appearance of their matches.

Hannah didn't like having to sign in with Facebook. She then set her preferences, wanting to look for friends but not dates, and swiped right (Yes) on the movie screening. She matched with Janna, which made her happy, but did not message her and chose to instead keep swiping. She did not attempt to inspect the profile. She kept swiping left (No) until she swiped Yes on the beach cleanup. She had set her age preferences lower, so she would have matched with James based on similar interest but didn't because he is too old. That ended the demo, with Hannah neglecting to ever message Janna.

Hannah was not interested in environmentalism itself but liked the (familiar!) concept and mechanic for meeting new people if it were a topic that interested her. She did not want to use it for dating however. It did validate our assumption that Hannah enjoyed getting matches, but it never led to her taking any further action so maybe the assumption was incomplete. She was also turned off by the dating aspect and didn't like being unable to see what they looked like.

Conclusion

We decided on moving forward with *GRPG* because it most closely succeeded with our assumption (having fun, enjoying the game and social mechanics) while also aligning with our main goal in getting people more exposure and access to information and pushing them to incrementally get more involved or knowledge on how they could get more involved. Even without the user necessarily taking action, they are forced to encounter new information every time they turn on the prototype, especially if they want to gain points.

Greendr was a strong contender in usability, but the user did not follow through with actually linking with their match and was more interested in swiping and collecting matches, making us question if they would even attend the events. Though one could say it validated our assumption, the goal is to get users to be more environmentally engaged through real-life events, which had inconclusive results. It also limits our ability to provide information, restricting learning to events only.

Earth or Dare was a strong contender in creativity but whether or not it validated the assumption was ambiguous based on the prototype results. We cannot be sure if social capital is enough of a motivator for participation.