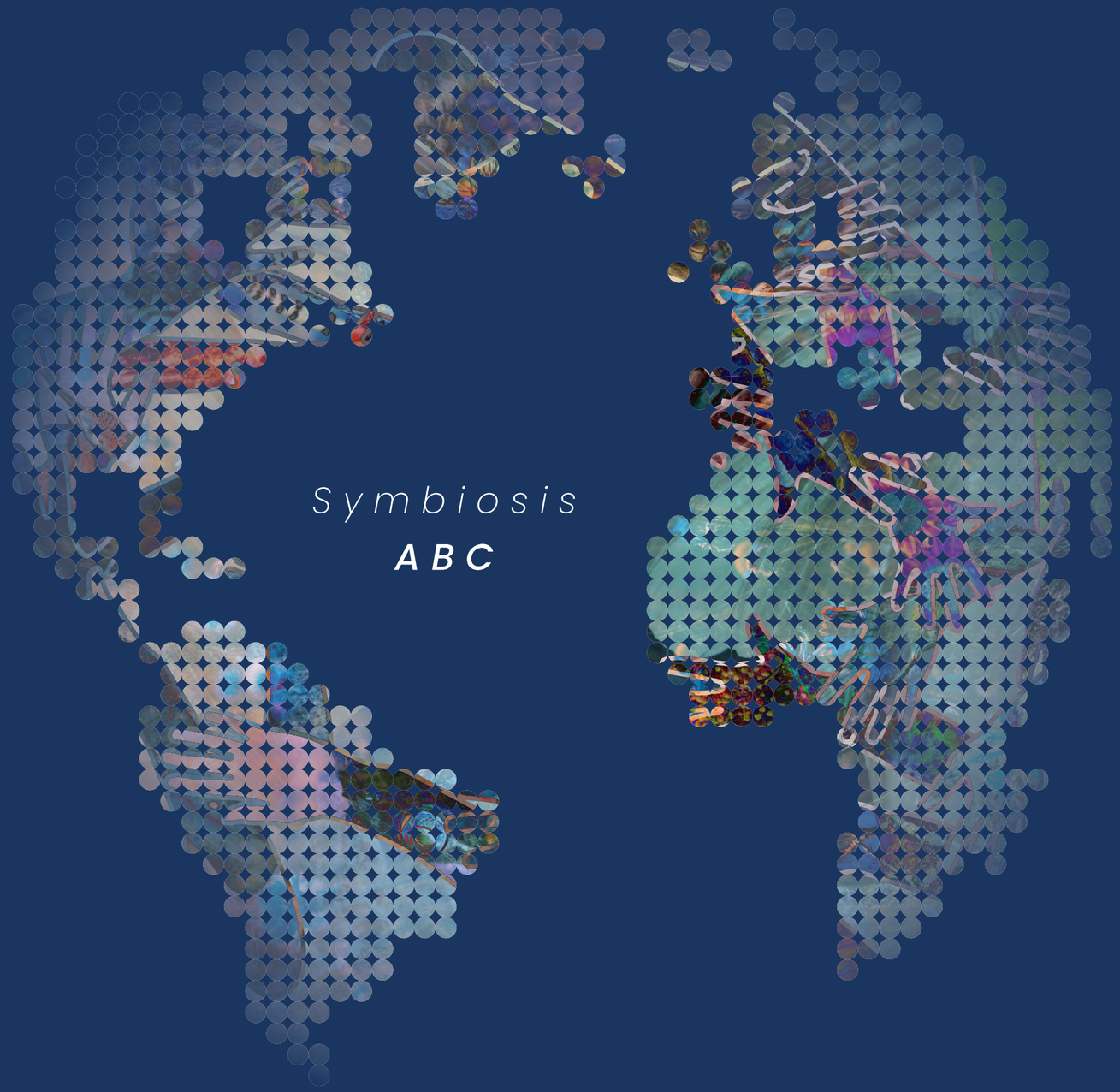


Elena Berg

Team Planet People

Group Project

Create a deck of cards based on the ABC's that utilizes print, screen interactions, and AR.

Everyone gets three letters to design.

Elena Berg

Team Planet People

Ideation

What is our core concept?

We all came up with as many ideas as we could, and narrowed it down to...

Mutualistic Symbiotic Relationships

a close and long-term biological interaction between two different biological organisms that benefits both of them

Reasoning

With mutualistic relationships being in the biological field, it coinsides with the curriculum being taught in late elementary school. This provides a use case for these cards that serves a purpose apart from just being cards based on the ABC's. These cards will be able to help teachers teach ecosystems and the interactions with organisms in those systems, while also creating an engaging experience for the kids while they learn.

We concluded that making pairs would be a fun way for teachers to make up games that included finding the match of each organism. This could be done in the form of Go Fish, passing out the cards and having the kids find their pairs, or any other interaction the teacher may come up with.

In addition, the pairs would provide examples of organisms in the wild helping each other out, despite their differences, which would be a good way to teach children to work together.

Research

Because of the scientific nature of this topic, we did weeks of research to find pairs of organisms that fit within the ABC's.

These are the letter pairs along with their references.

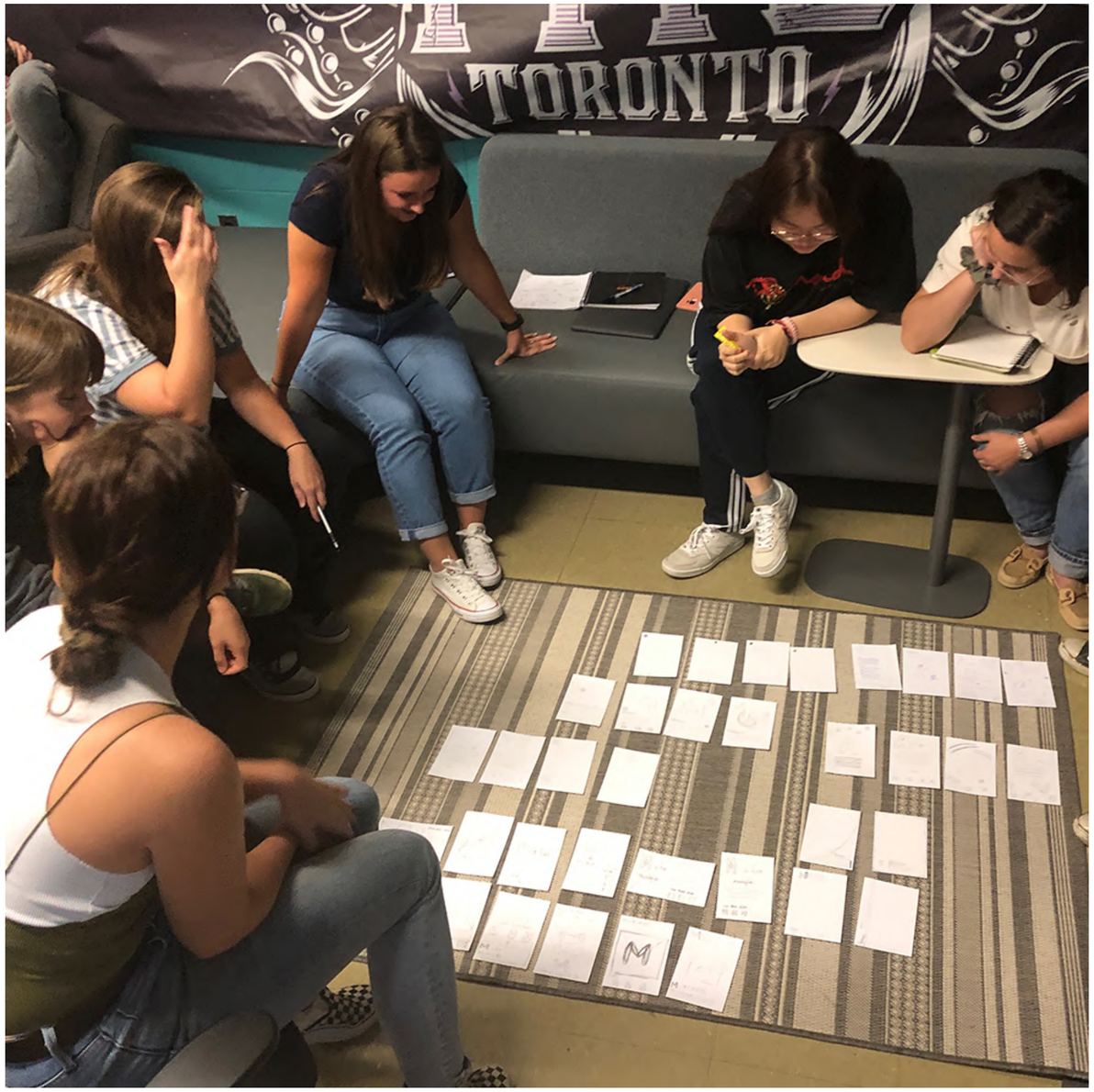
A > K	American Beaver https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5181919.pdf
B > H	Bacteria (helps digest food in humans)
C > U	Carrier Crabs (carries the urchins)
D > L	Deciduous Hardwood Trees (provide food and shelter to Lemurs)
E > N	Emu (emu digestion of nitre bush seeds are almost the only thing that get them ready for digestion)(even mammals digesting it don't work) https://en.wikipedia.org/wiki/Nitraria_billardierei https://www.jstor.org/stable/2258615?seq=5#metadata_info_tab_contents
F > W	Fig (houses the wasps eggs)
G > M	Giant tarantulas http://www.isopoda.net/contents/the-odd-couple-spider-frog-mutualism-in-the-amazon-rainforest/
H > B	Humans (provide housing and food for bacteria)
I > S	Imperial Shrimp (w/ sea cucumber)
J > Z	Jellyfish http://thescyphozoan.ucmerced.edu/Biol/Ecol/Symbioses/Mutualism.html
K > A	Kingfisher
L > D	Lemur (Eats fruit from large trees and poops 'em to spread saplings)
M > G	Microhylid (Tiny frog) http://www.isopoda.net/contents/the-odd-couple-spider-frog-mutualism-in-the-amazon-rainforest/

N > E	Nitre Bush (food source for emus) https://en.wikipedia.org/wiki/Nitraria_billardierei
O > R	Oxpecker (pecks bugs off of Rhino)
P > X	Perrennials (the only reason is pollination) https://www.almanac.com/content/plants-attract-hummingbirds
Q > V	Quoll (catches prey, leftover carcass is food for the vulture. Easily susceptible to diseases). https://academic.oup.com/bioscience/article/64/5/394/2754213
R > O	Rhino (feeds Oxpecker birds)
S > I	Sea Cucumber (w/ Imperial Shrimp)
T > Y	Tegeticula yuccasella a.k.a. Yucca moth (adult moths pollinate the Yucca plant).
U > C	Urchin (provides protection to Carrier Crabs)
V > Q	Vulture (eats leftover carcasses with diseases that may harm the Quoll, keeps Quoll from dying). https://academic.oup.com/bioscience/article/64/5/394/2754213
W > F	Wasp (once the larvae are adults, they'll fertilize the fig).
X > P	Xantus's Hummingbird https://www.activewild.com/xantuss-hummingbird/
Y > T	Yucca plant (houses and feeds moth larvae)
Z >J	Zooxanthellae (gives pigmentation and feeds off waste) https://en.wikipedia.org/wiki/Zooxanthellae

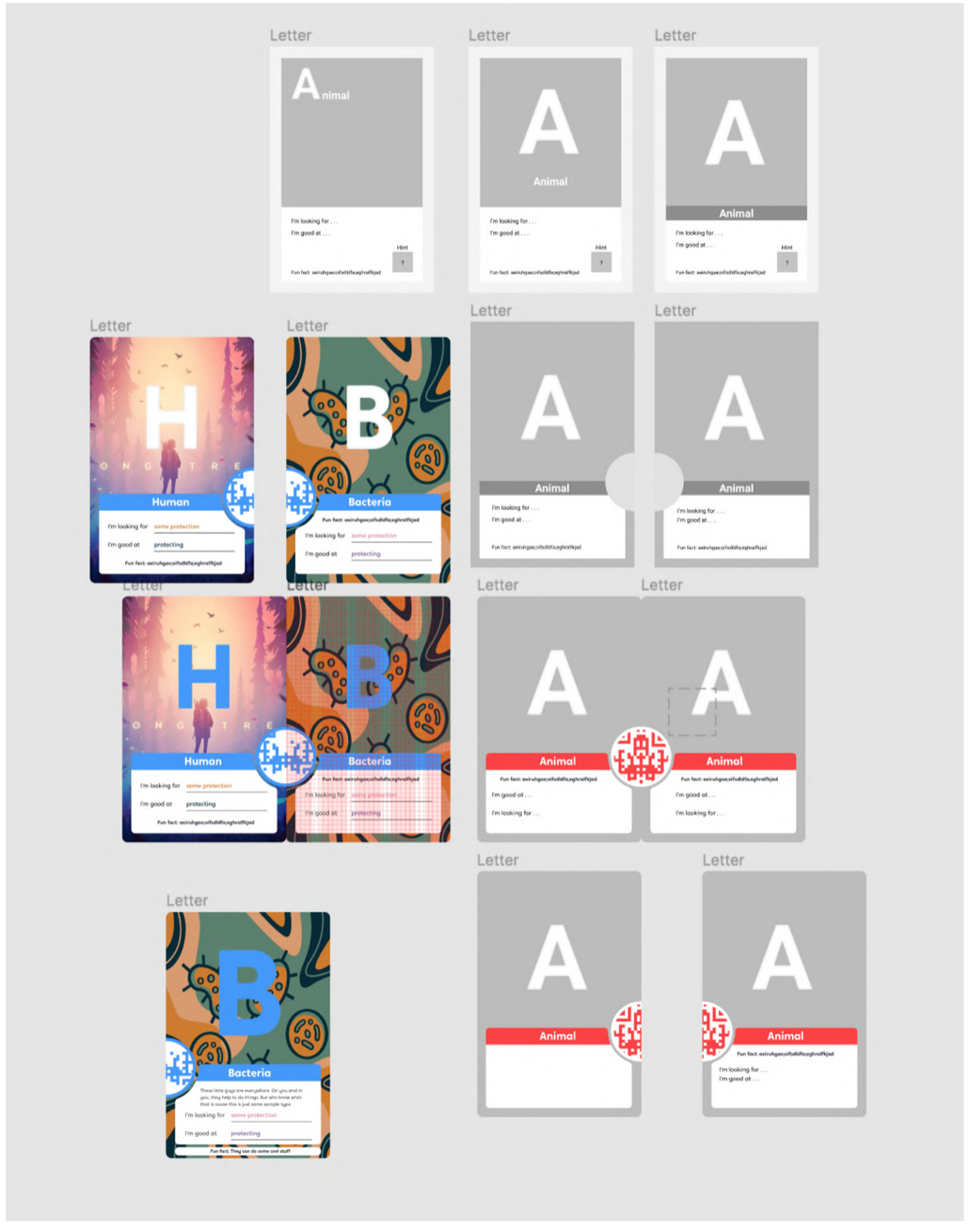
Layout

Because this is a deck of cards, we wanted to keep the layout consistent across all the cards to make them look like they all belong together, despite everyone working on their own letters and employing different styles to create the graphics.

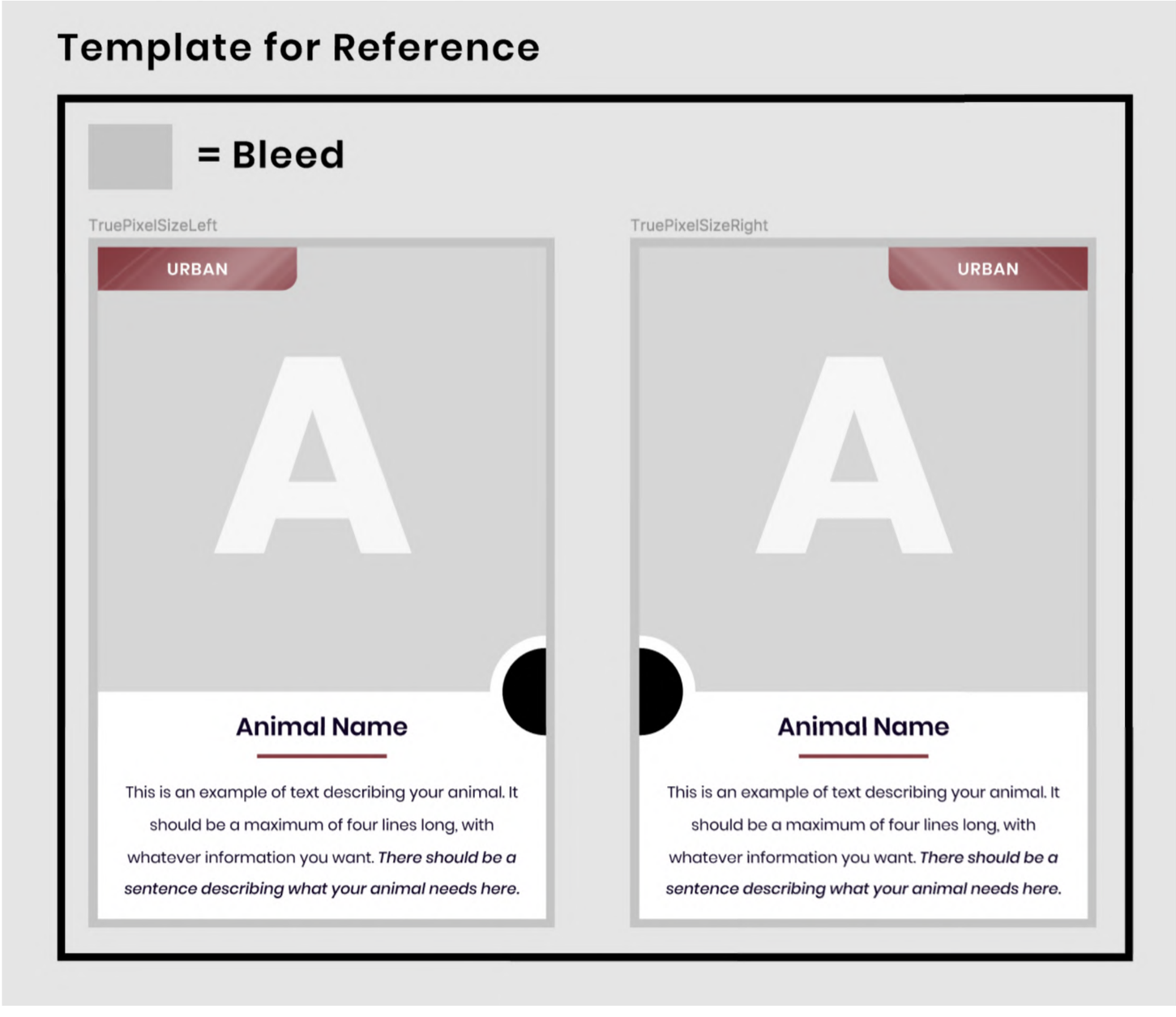
We passed around index cards and had everyone draw out ideas of what the card layouts could look like.



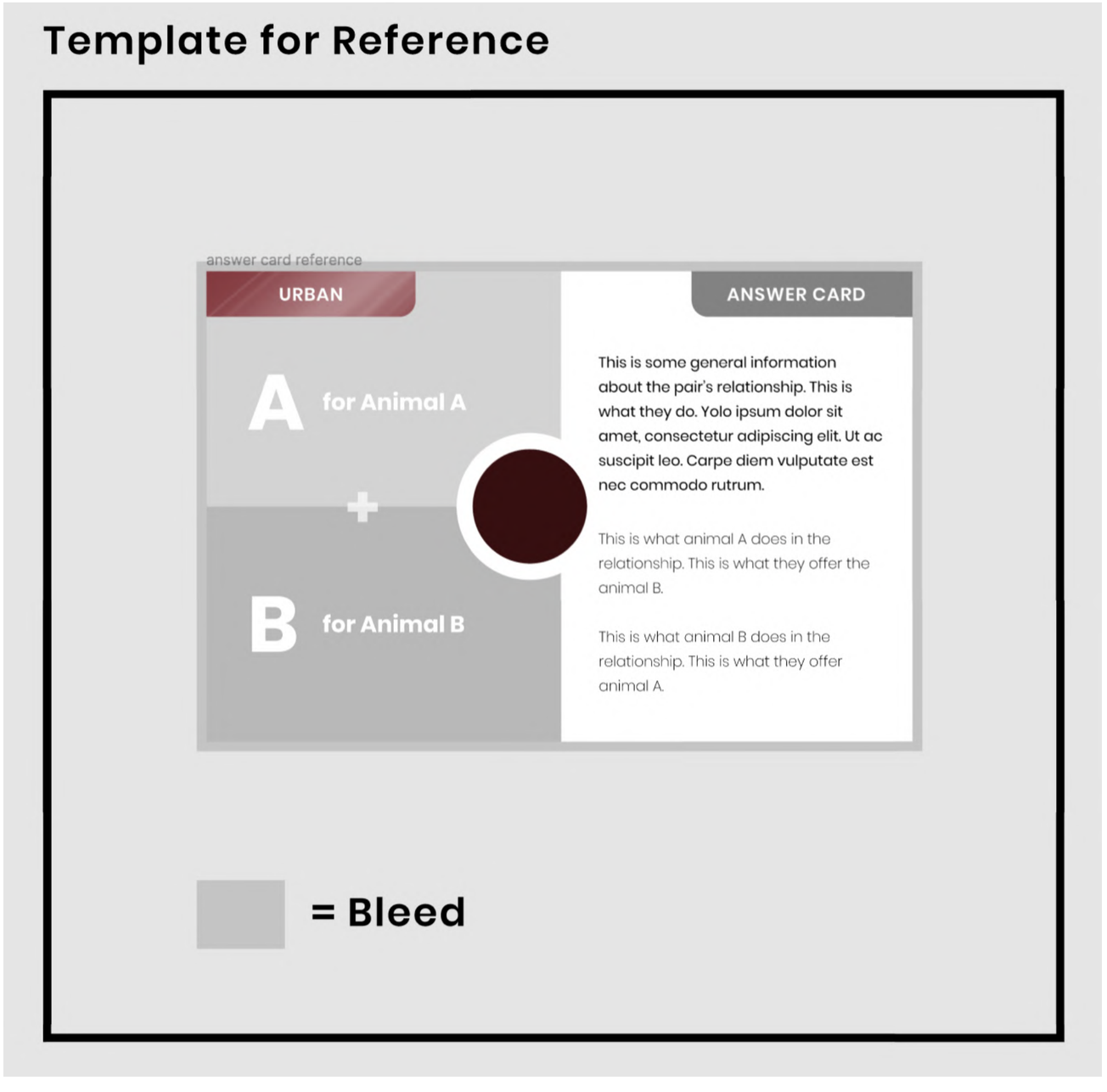
We then started bringing our ideas together into figma, along with some inspirations to draw from.



Eventually, we came up with these templates for everyone to follow. We decided to include a QR code into our design so that we could have a clear area to use for the AR aspect of the project.



We also came up with cards that reveal the pairs and give more information about the pair. These are useful for the teachers as some of the organisms aren't as widely known and would need further information for most people to match the pairs.



My Letters

A, P, Card Backs

Elena Berg

Team Planet People

Letter A

American Beaver

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Mood/Style/Inspiration Board

American Beaver

Keywords

Vector w/ texture

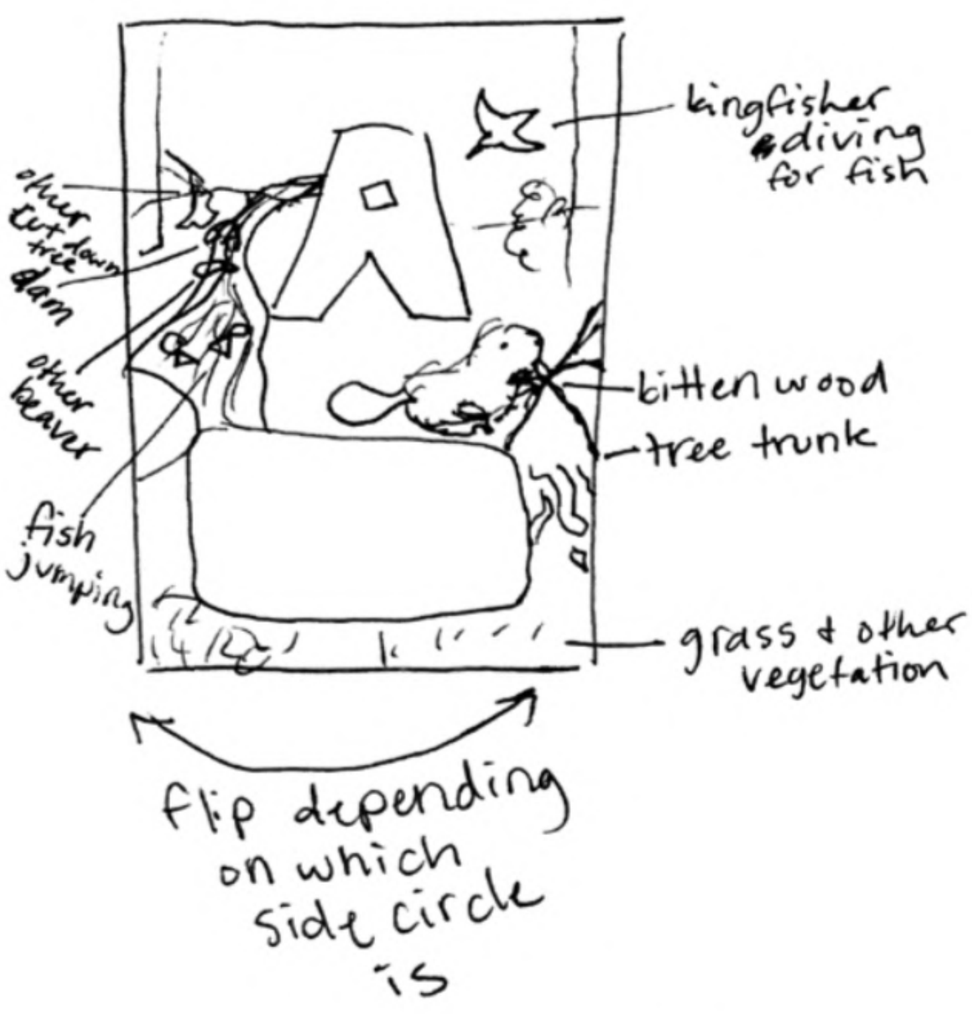
Woods

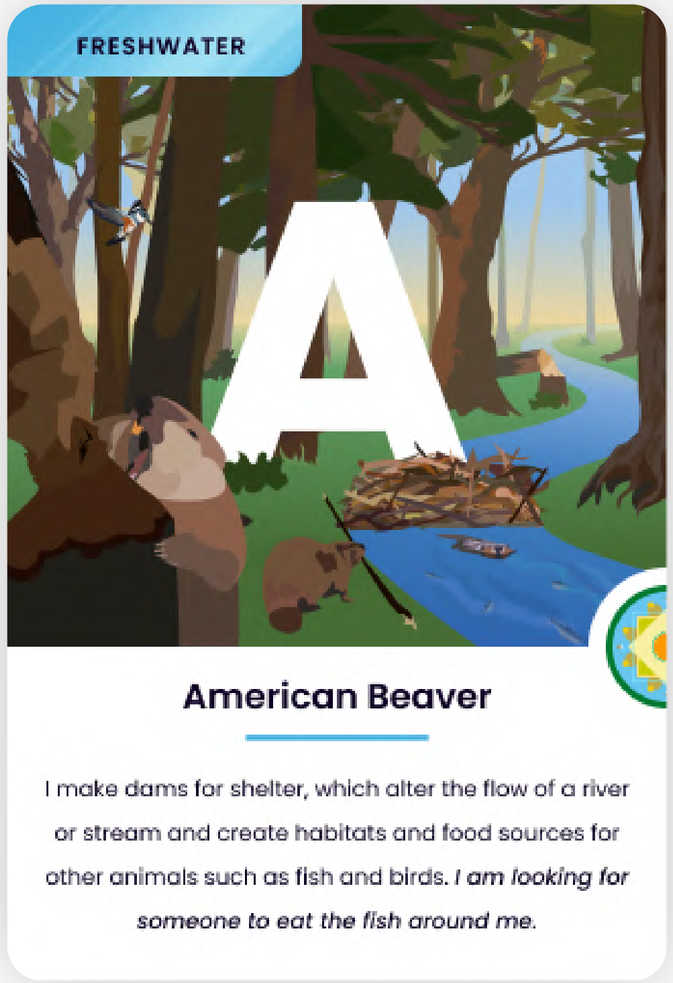
Beaver dam mound

Natural colors

Environment

My first sketch actually is a pretty good representation of what my end product turned out to be. I did add more beavers to add more emphasis to the beavers, but I also wanted to put emphasis on the environment that the beaver lives in and creates because it is such an important part of its symbiotic relationship.





I then also followed through with my interaction ideas shown in my sketch using Principle. I used exclamation points to create affordance on the clickable areas where the animations play and an animation take place.

Letter P

Perennials

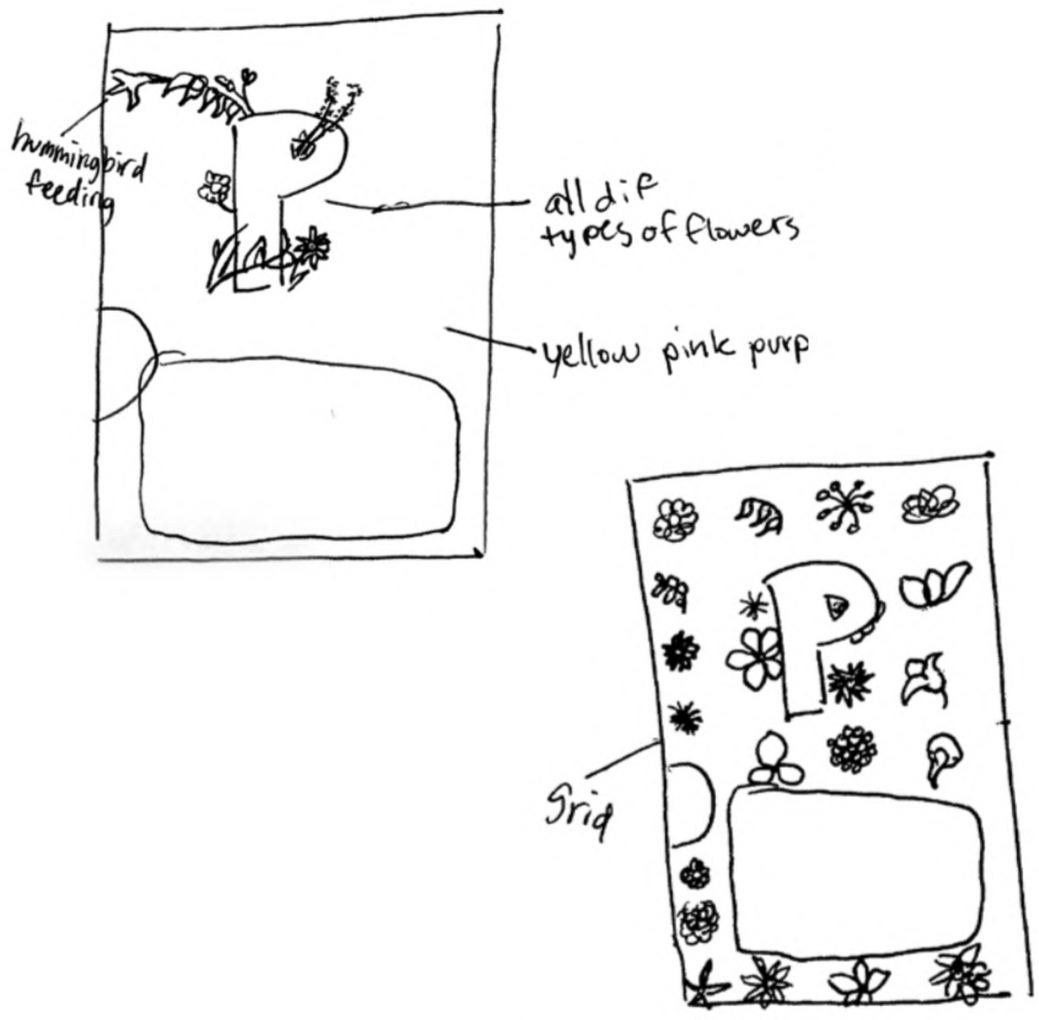
Mood/Style/Inspiration Board

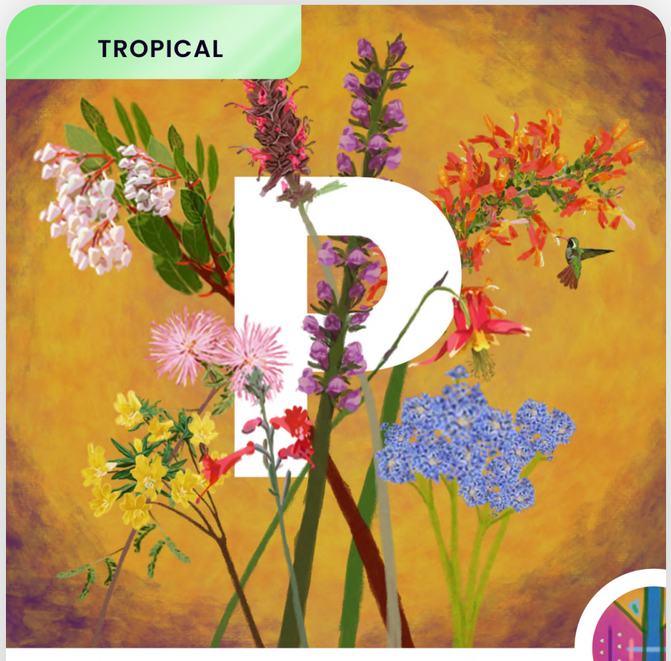
Perennials

Keywords

Painted
Bright
Clusters
Warm
Abstract Background

For Perennials, I had two ideas, but ended up going with the idea of having various flowers classified as perennials entertwining around the letter “P.” Because of the painted style, this illustration took the longest, and garnered the most compliments from others.





Perennials

We are plants that live more than 2 or 3 years and don’t need to be replanted. We in particular are from Baja California. We *are looking for someone to drink our nectar and pollinate us.*

For the Perennial interactions, I didn't feel the need to add affordance to the flowers because they were so separate from each other already. When clicked, they wiggle and give the common and scientific name of each flower shown.

Cover

Card Backs

Mood/Style/Inspiration Board

Card Back

Keywords

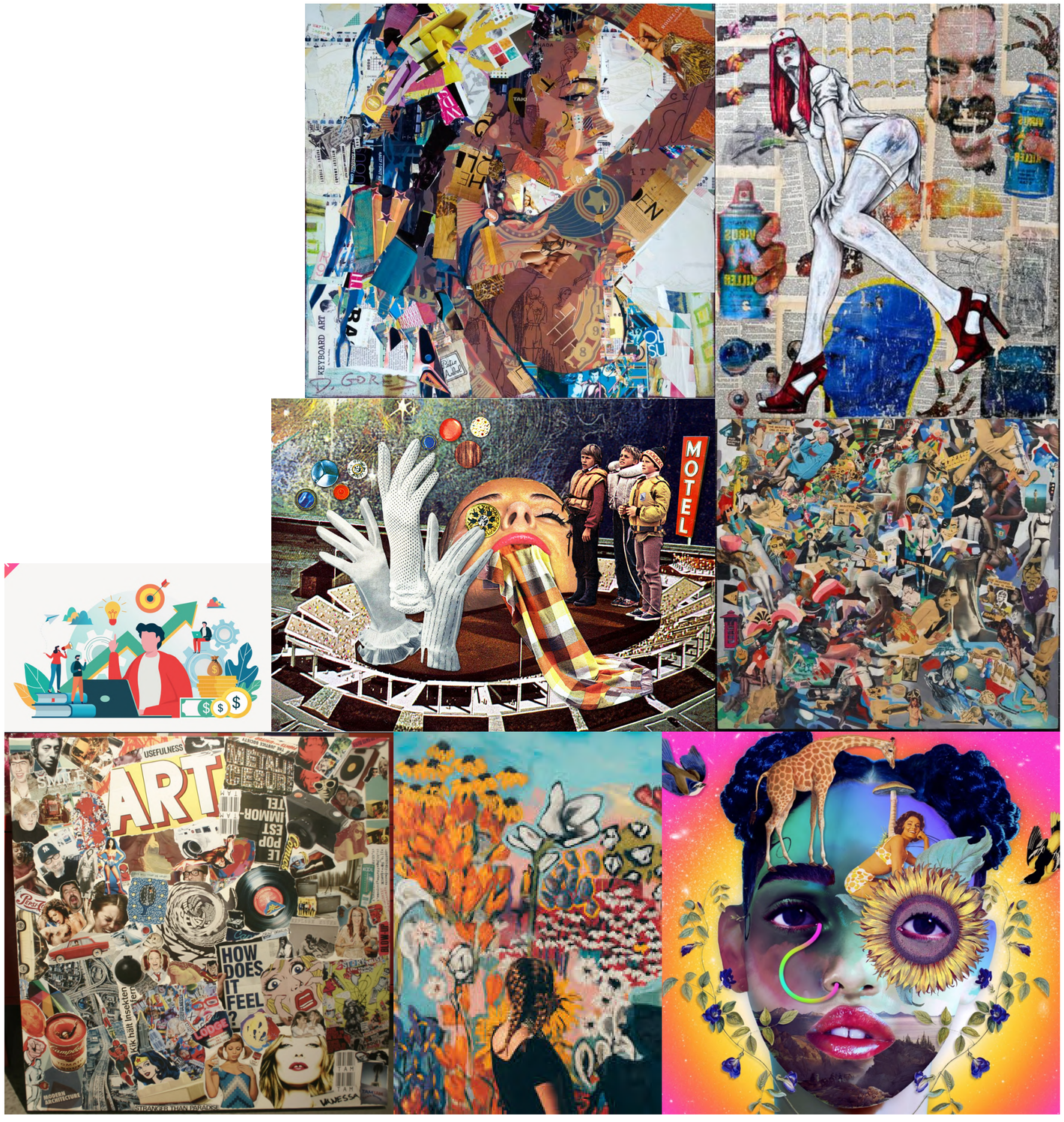
Collage

Mediums

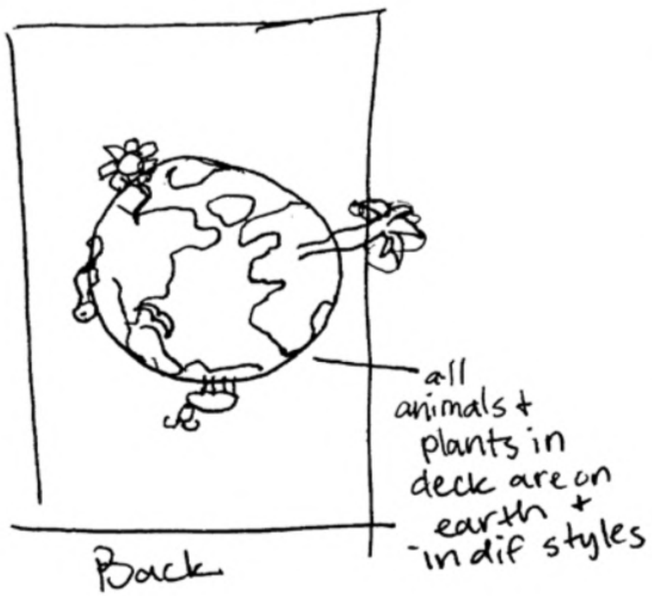
Working together

Photos

Colorful

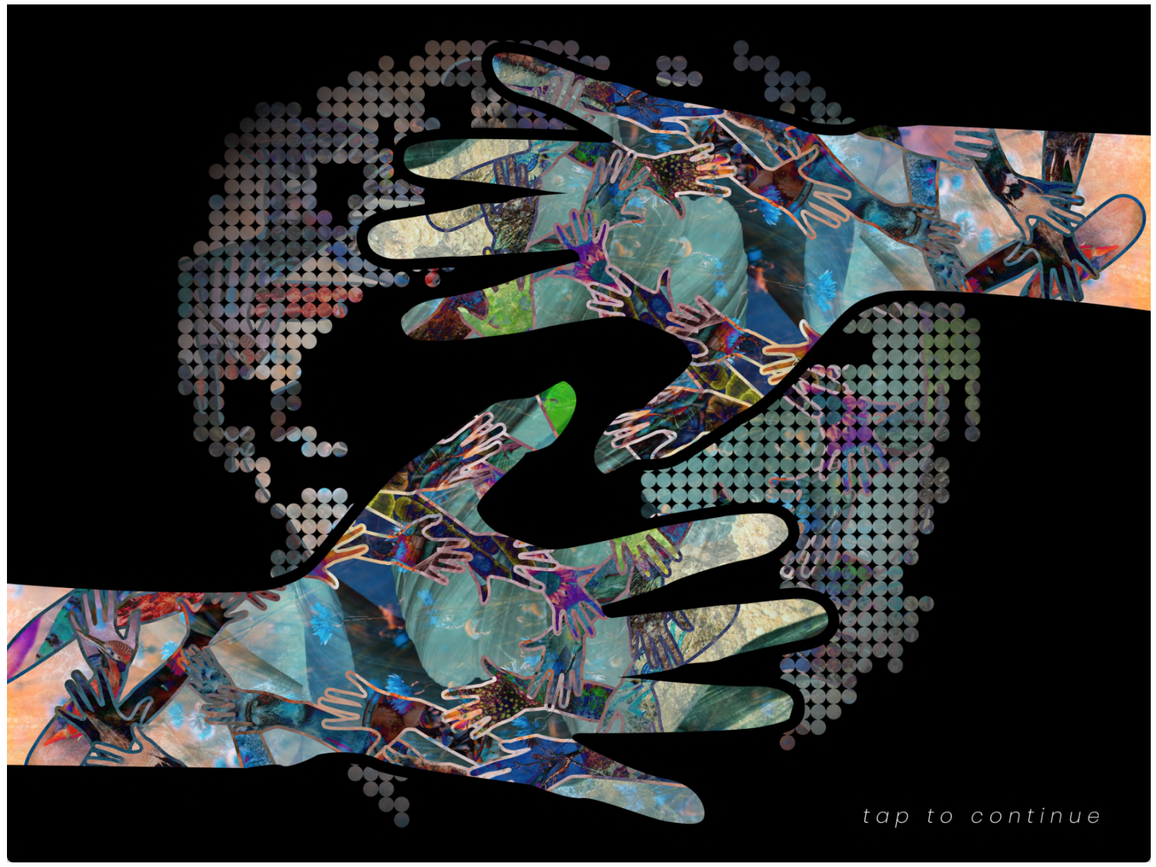


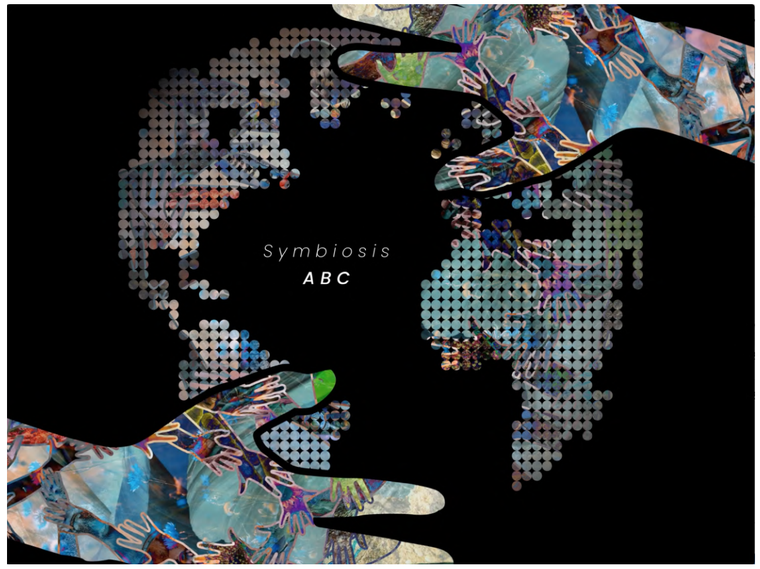
My idea for the cover was to symbolize all of the organisms in the deck. My first ideas felt a little too literal and overdone, but I eventually had some inspiration from the stock image on the right.



I ran with the inspiration here by using images of the organisms in the deck and abstracting them further and further to make a completely new image that felt unified, but also called out each unique being.

For the interaction of the card backs, it was quite a challenge to figure out how to incorporate the design into the shell of the interaction. Eventually, I decided to make it as an opening screen when entering the app. The images below show the progression from left to right, top to bottom, of how the animation takes place when the user touches the screen.





Interaction

Display Shell

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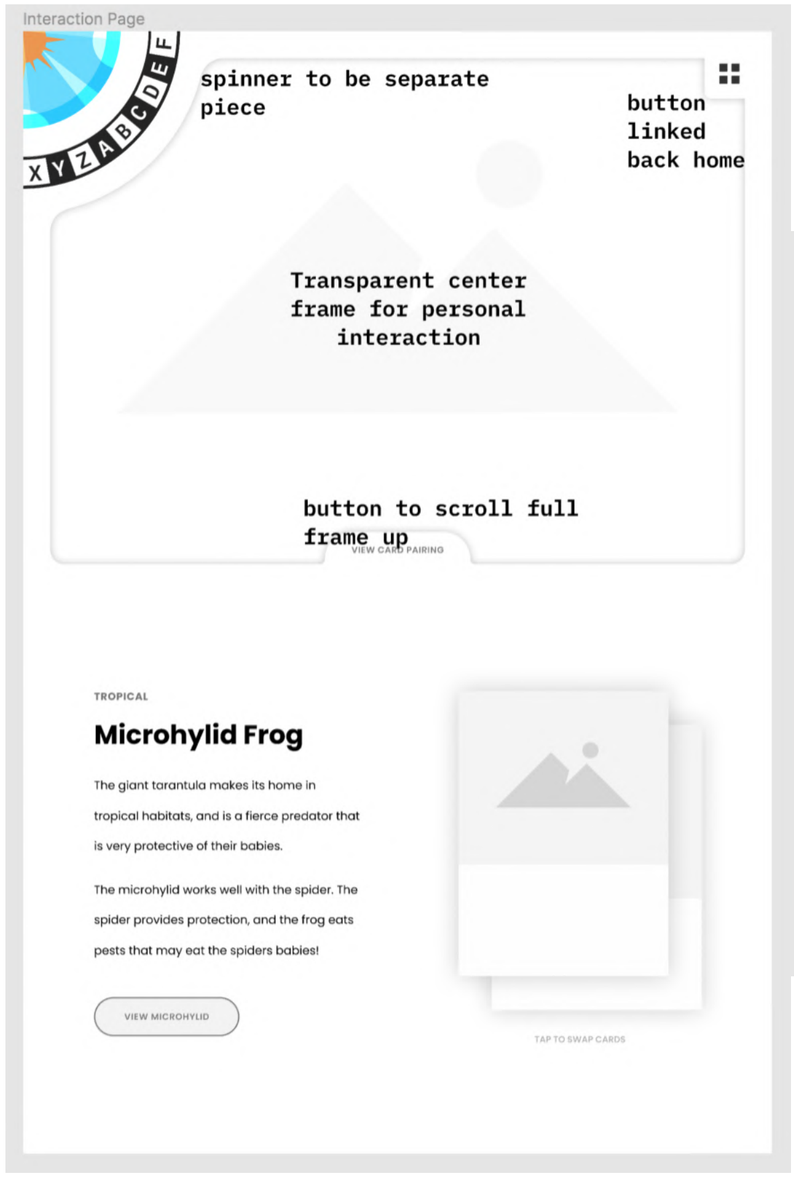
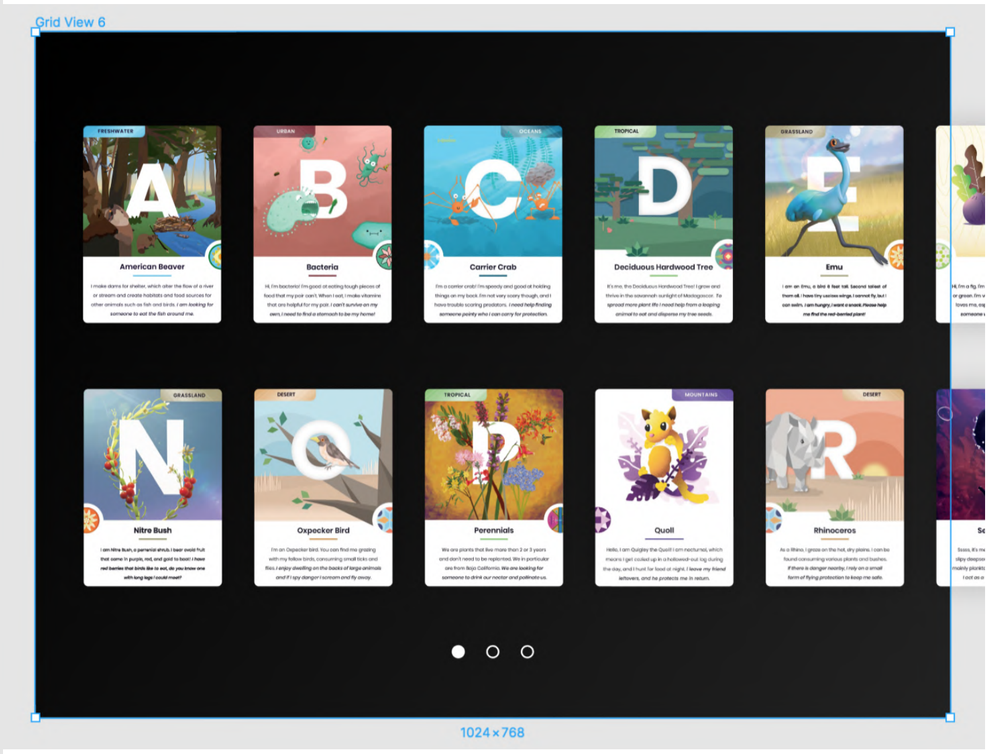
We needed to build a setup that stored the interactions to allow users to access all the cards and interactions in one place. To do this, we brainstormed in class and prototyped out how it would showcase the pairs and allow for navigation throughout the app.

As pictured below, a dial in the top left corner allows users to scroll through the alphabet and click on a letter. There is also a button on the top right that allows a view of all the cards at once. The button at the bottom of the interaction screens brings the user to more information about the pair. Ideally, we would have liked to have a button that brought the user to the pair's interaction, but we were unable to create this due to lack of time.





More Interactions

Augmented Reality

Future?

Due to the complexity of this project, we ran out of time to fully incorporate the AR functionality we had originally planned. In the future, it is a possibility to continue with what we planned. This would add not only to the completion of the project, but also the implementation in the classroom.

THANK YOU

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