

ABCs of symbiosis

Rohan Pawar
NMD Interactive IV
Fall 2019

Concept

The Ask

Create an ABC book that illustrates a concept through a traditional print media as well as an interactive digital product.

Our Solution

A set of ABC cards organized in a matching game that illustrates symbiotic relationships, with one animal per letter and an accompanying tablet app to reinforce the lesson.

How to play:

1. One card is given to each student. Each card represents one animal in a symbiotic relationship, with an illustration and copy.
2. Students look to their classmates to find the pair for their animal. They compare informational clues, color palettes, and a symbol.
3. To learn more, students can view answer keys and explore supplementary lessons (through kid-friendly interactive vignettes) on the tablet app.

Considerations

A matching card game **encourages kids to interact** with one another, while creating a foundation that can introduce the topic.

The tablet app is intended to improve the experience of the game, but **isn't required** to be able to play.

We wanted to have enough **simple rules** that teachers could use the cards without much planning, but **enough flexibility** that they could incorporate the game into their own syllabus.

Research & Insights

Our team is interviewed a handful of 4th grade teachers to learn about teaching strategies and pitfalls.

We asked questions like:

“What do kids struggle with when learning a new topic?”

“What do you avoid when teaching a new topic?”

“Where do the games or digital products you use go well/miss the mark?”

“What do you do to keep kids interested when they start getting bored?”

+ more

We've learned quite a lot:

"Kids tend to struggle with vocabulary when learning something new."

"Simple rules are better. Complicated rules distract from the learning."

"This age group is extremely comfortable with digital products"

"4th graders are much more engaged if they feel like the topic is important."

“4th graders are much more engaged if they feel like the topic is important.”

In order to make the students feel more connected and engaged to the topic at hand, we included **messaging** in our copy that emphasized the impact of symbiotic relationships, and we included **discussion topic cards** that teachers can use to spark discussion.

Visual Direction



Illustration Styleboard

Inspired by the illustrations of **Ben Javens**, **Janette Bornmarker**, **Emmanuel Colombo** and **Shaw Nielsen**.

Stylistic Elements

Painterly texture
Graphic forms
Bright color
Blocks of color
Stylized rendering

Mood

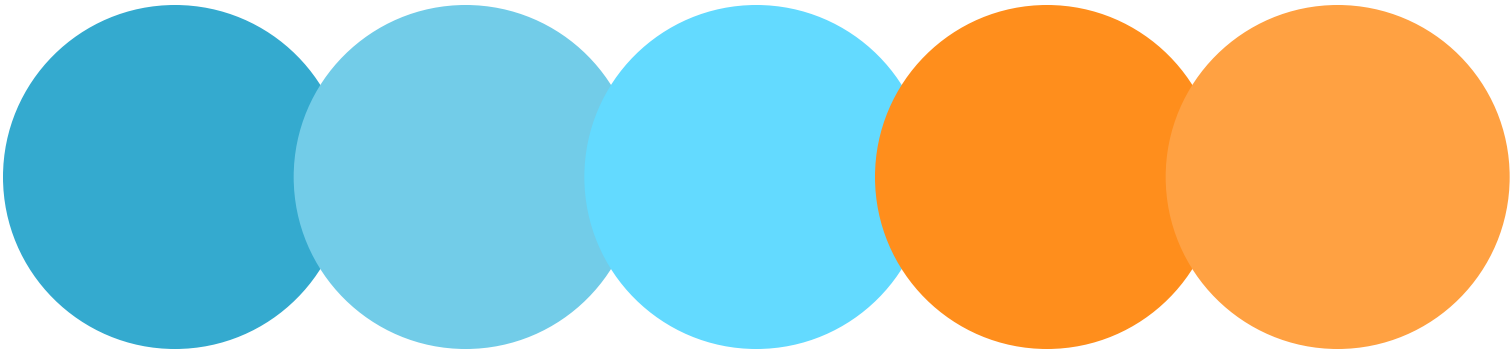
Goofy
Expressive
Fun
Crisp/clear
Childlike

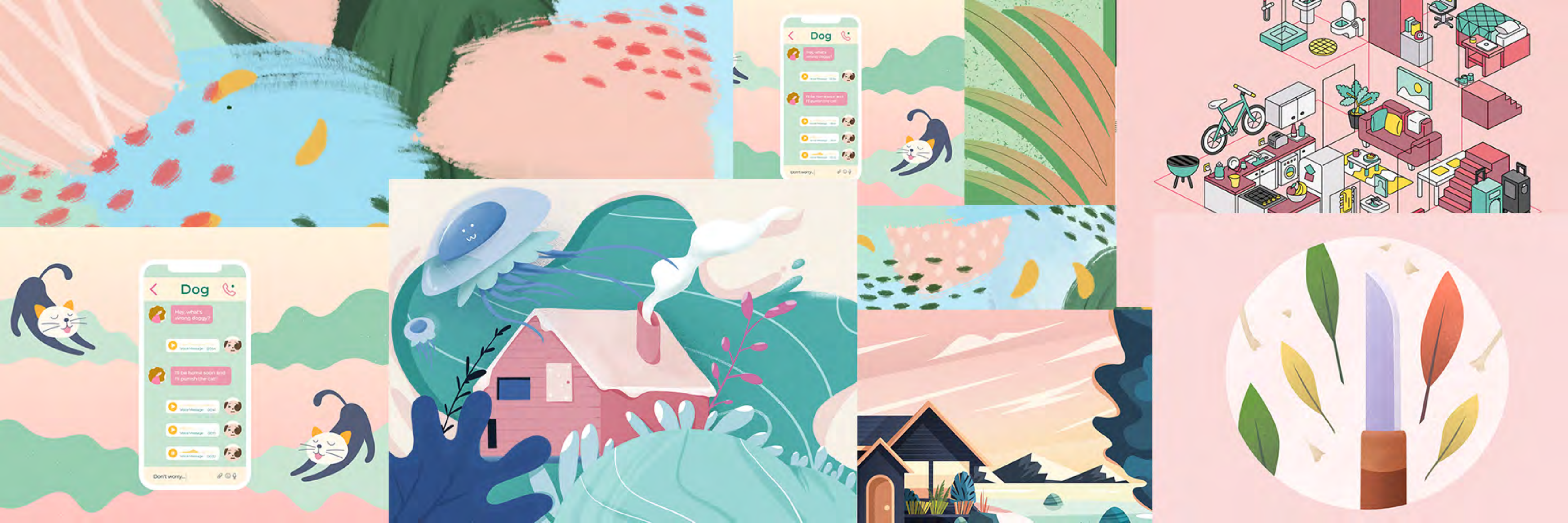


Moodboard 02

C (for Carrier Crabs)
paired with Urchins

color palette

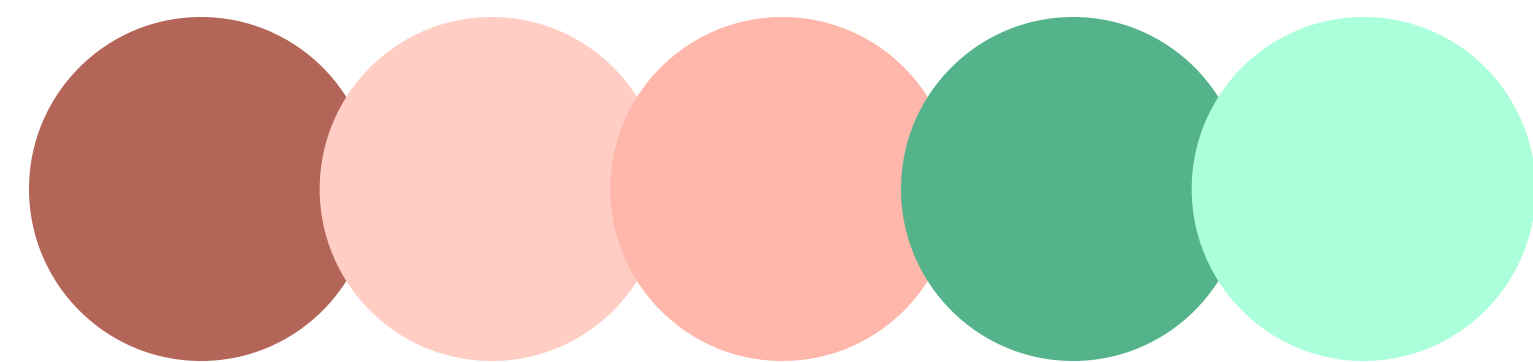




Moodboard 01

B (for Bacteria)
paired with Humans

color palette



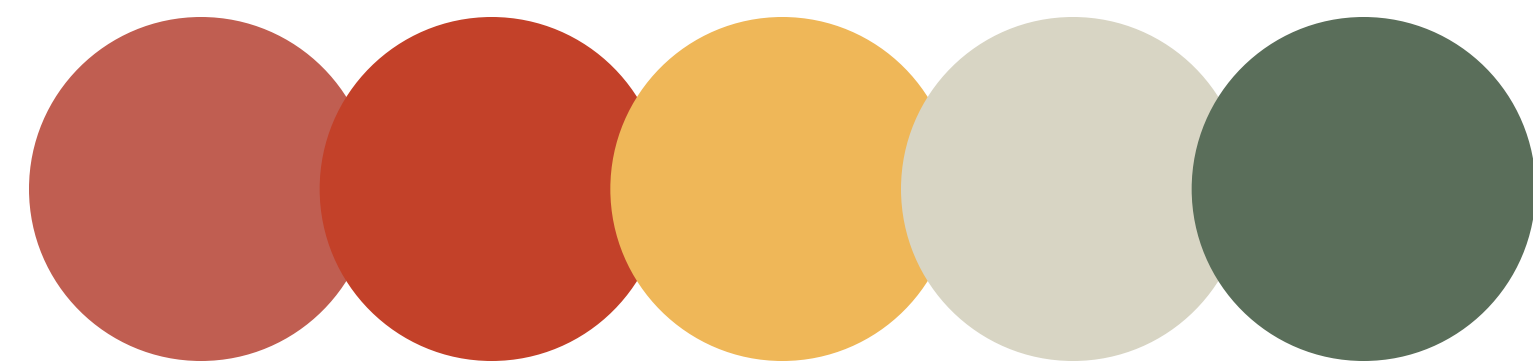


Moodboard 03

L (for Lemurs)

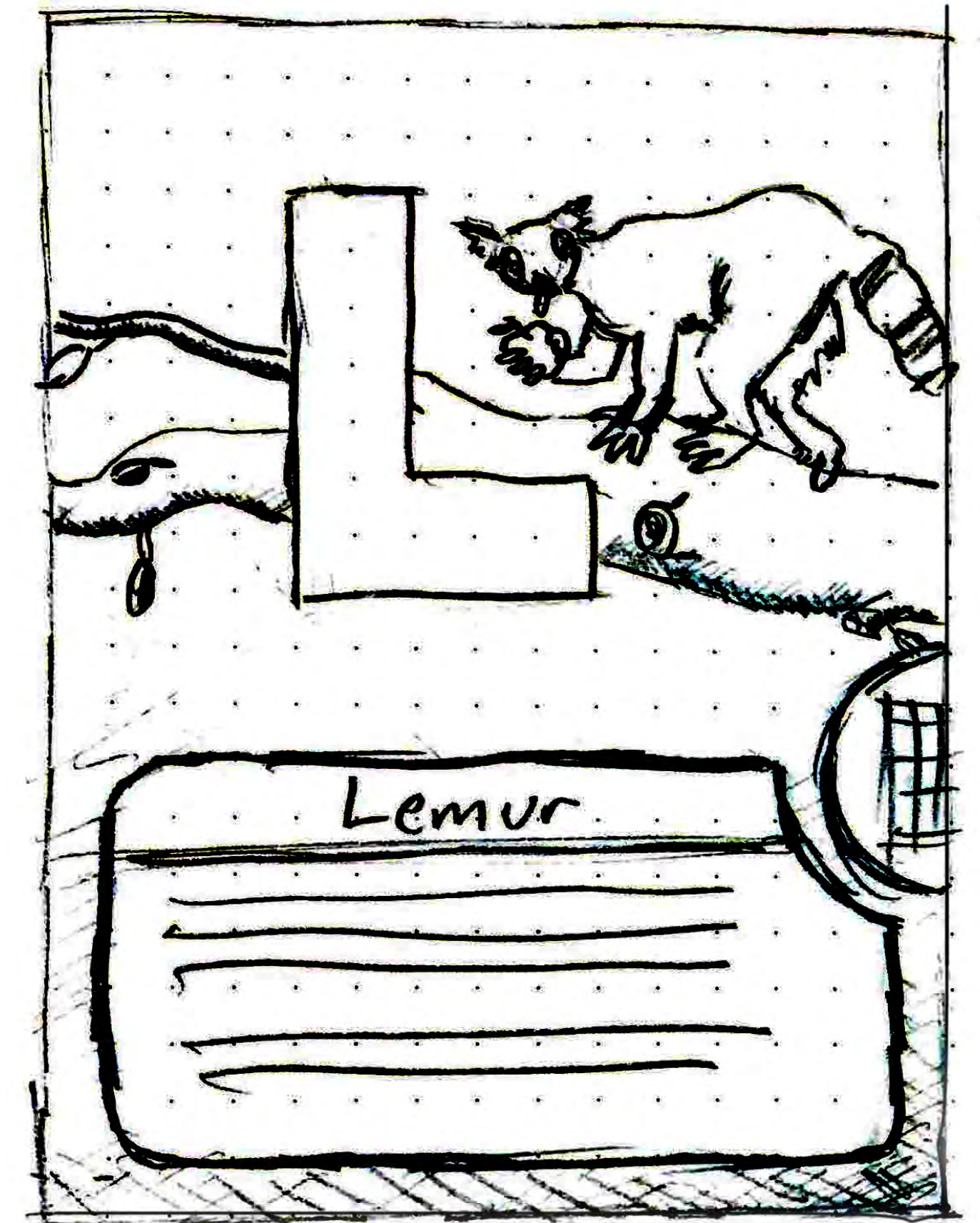
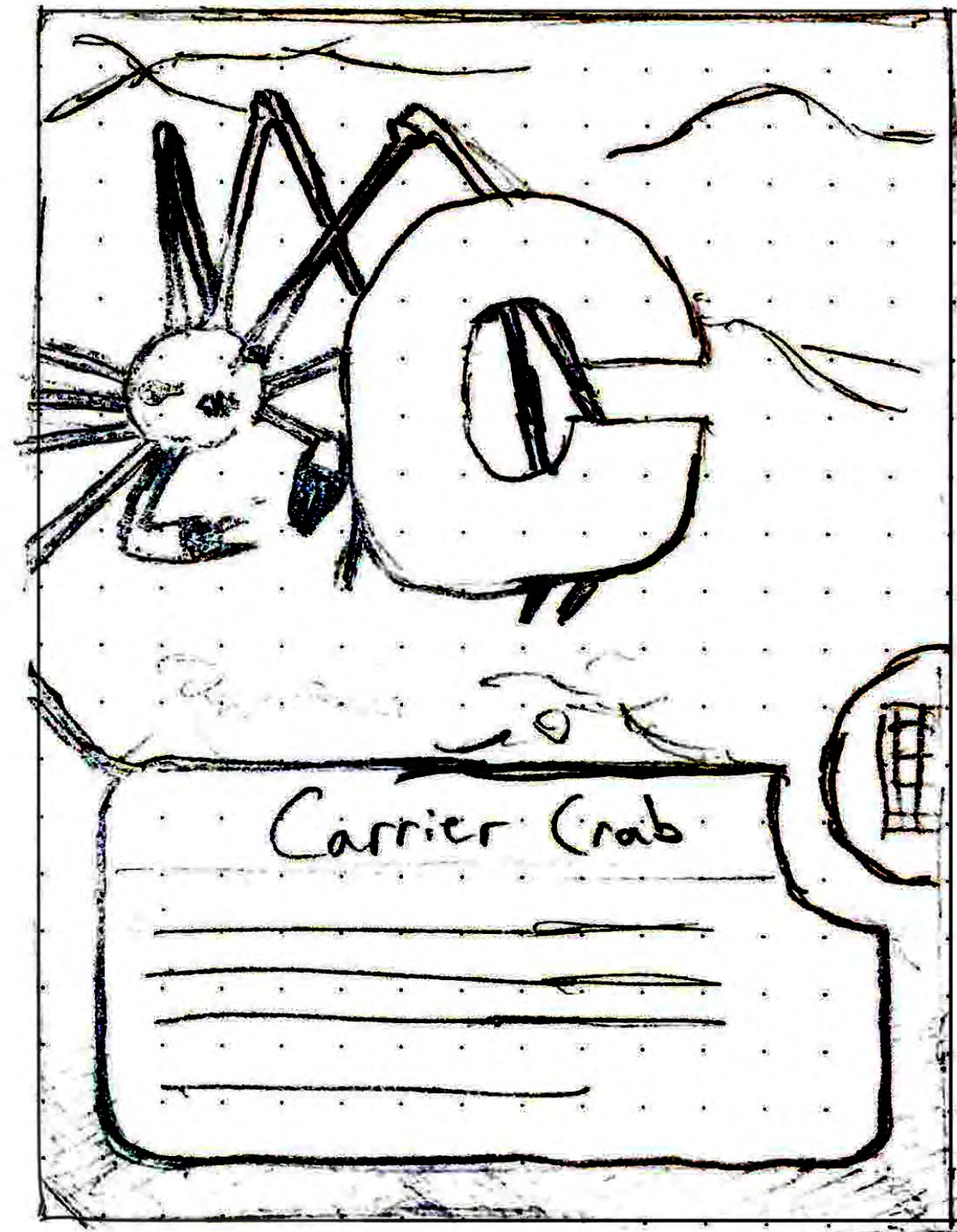
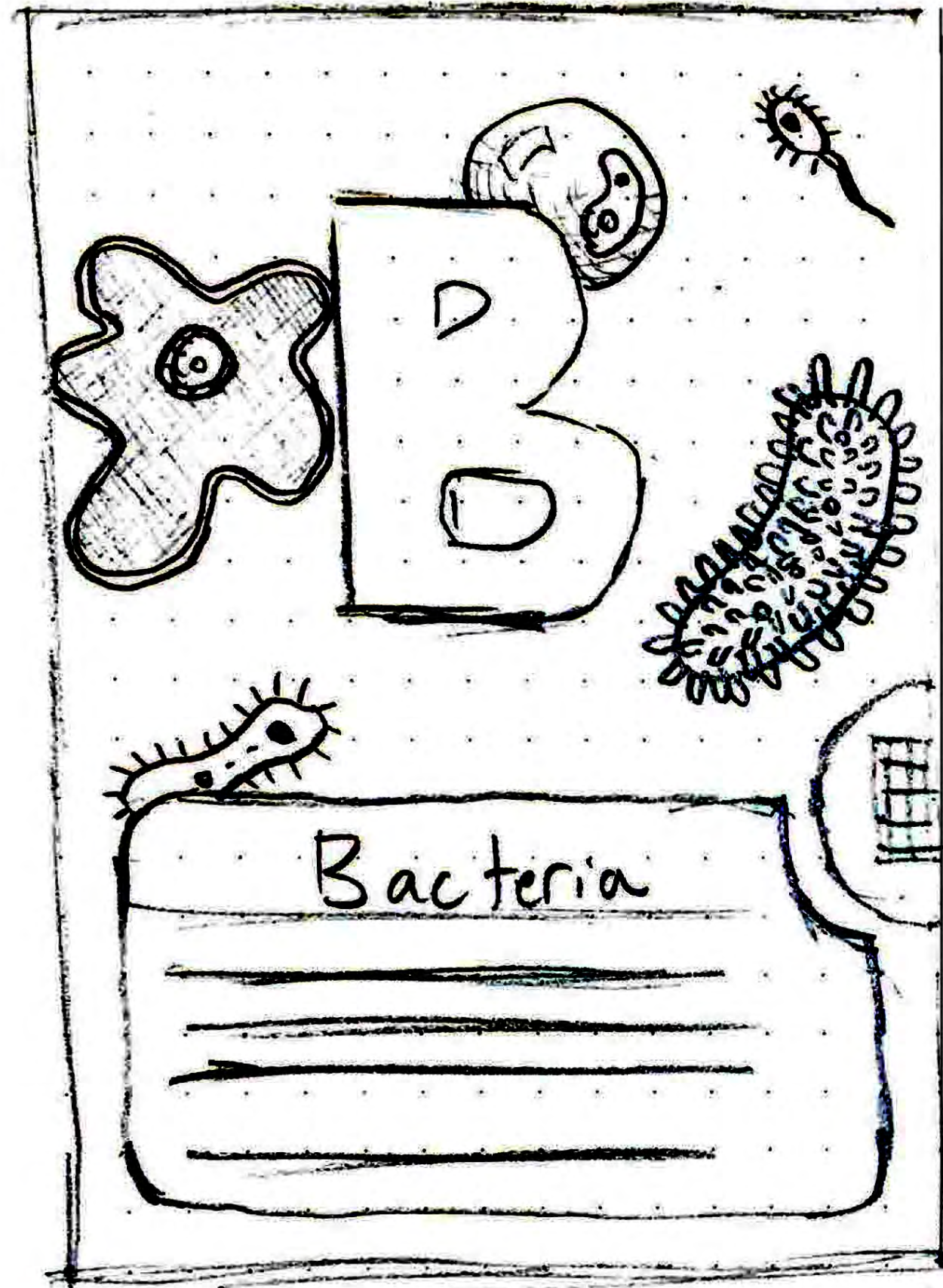
paired with Deciduous Hardwood Trees

color palette

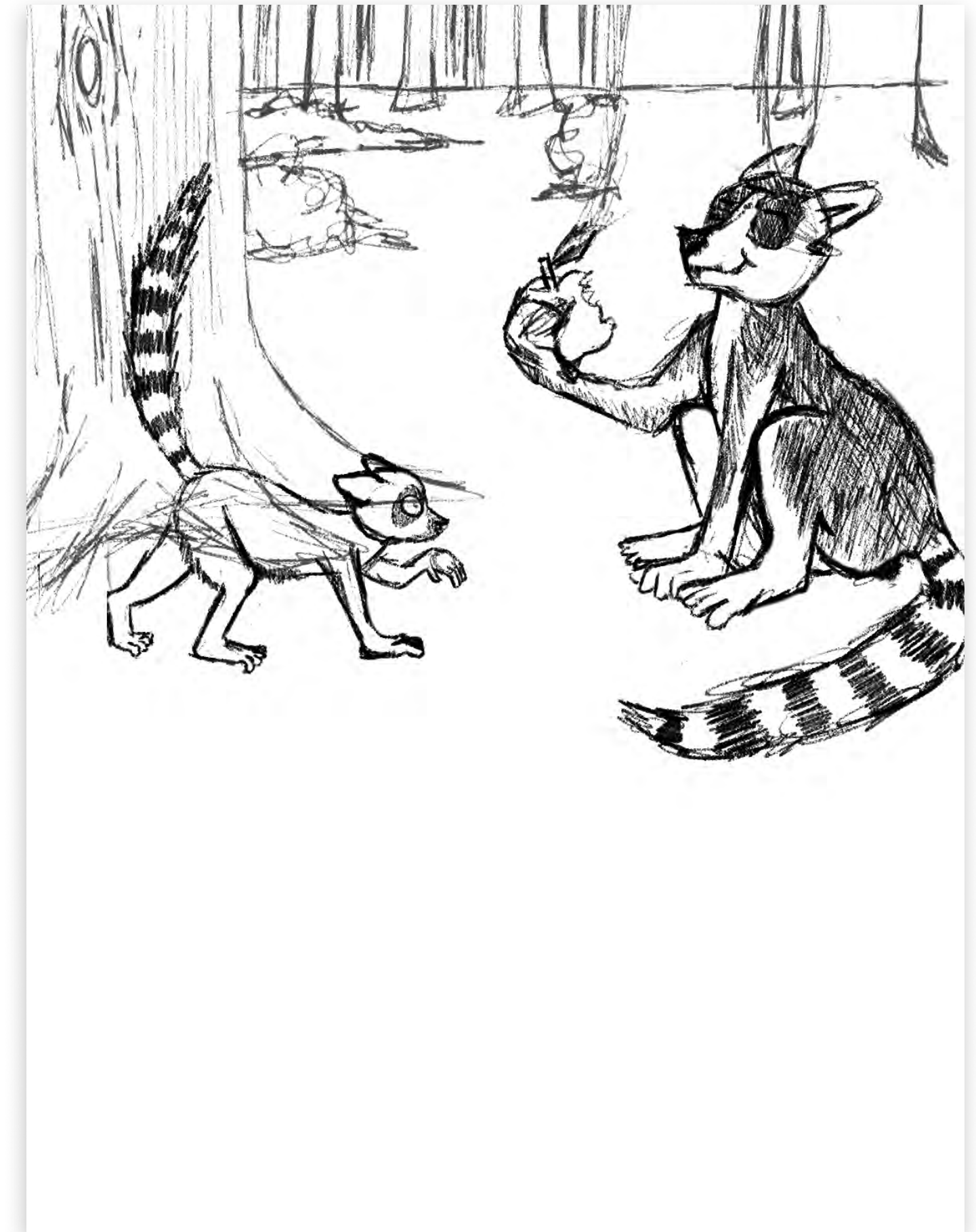
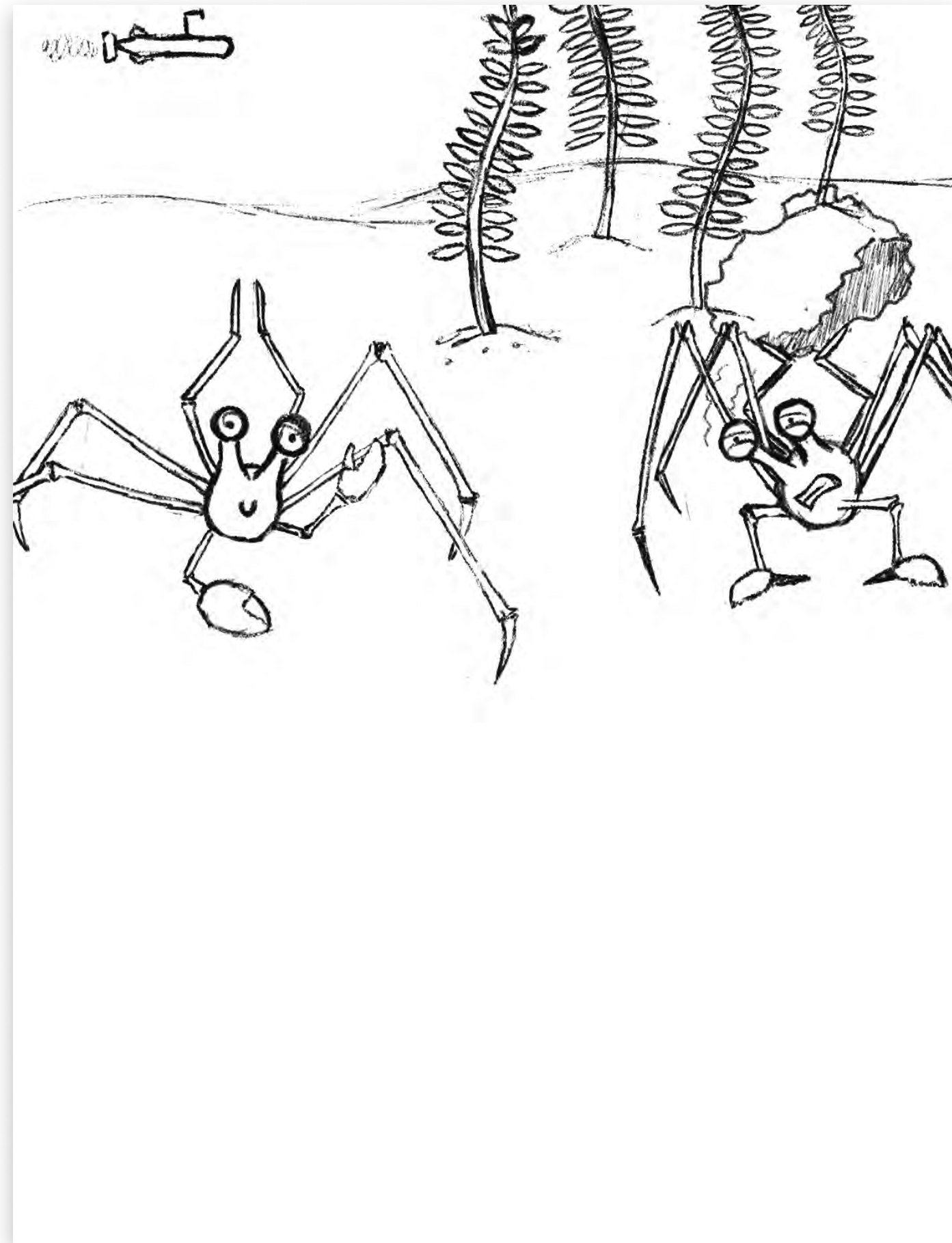
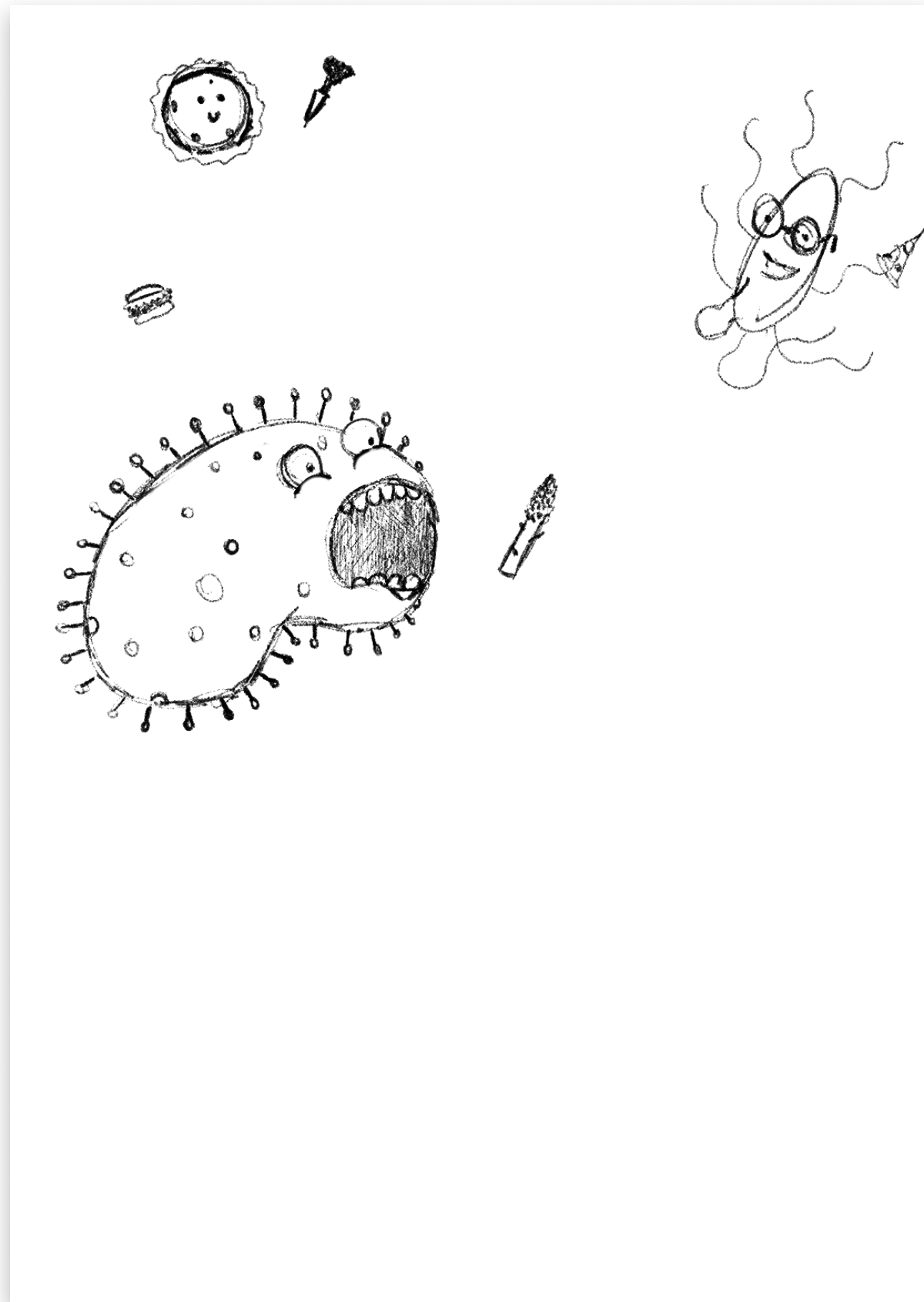


Sketches

Individual Print cards V1.



Individual Print cards V2.



Interactive interaction sketch: Carrier Crab

As the user drags a finger across the screen, a crab carries an urchin across the screen to a reef.

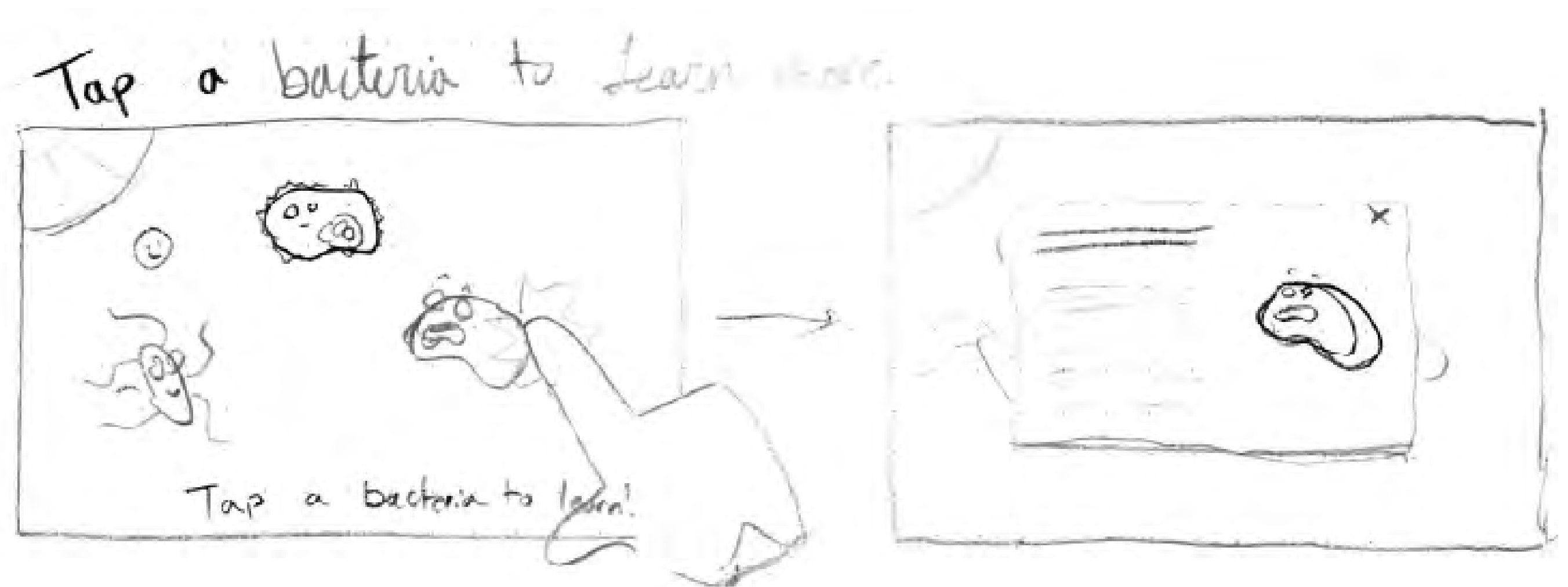
To keep the interaction easy for a younger audience, the gesture is a simple drag.



Interactive interaction sketch: Bacteria

A few bacteria are shown floating inside an intestine. To learn more, a user opens a modal by tapping on a bacteria.

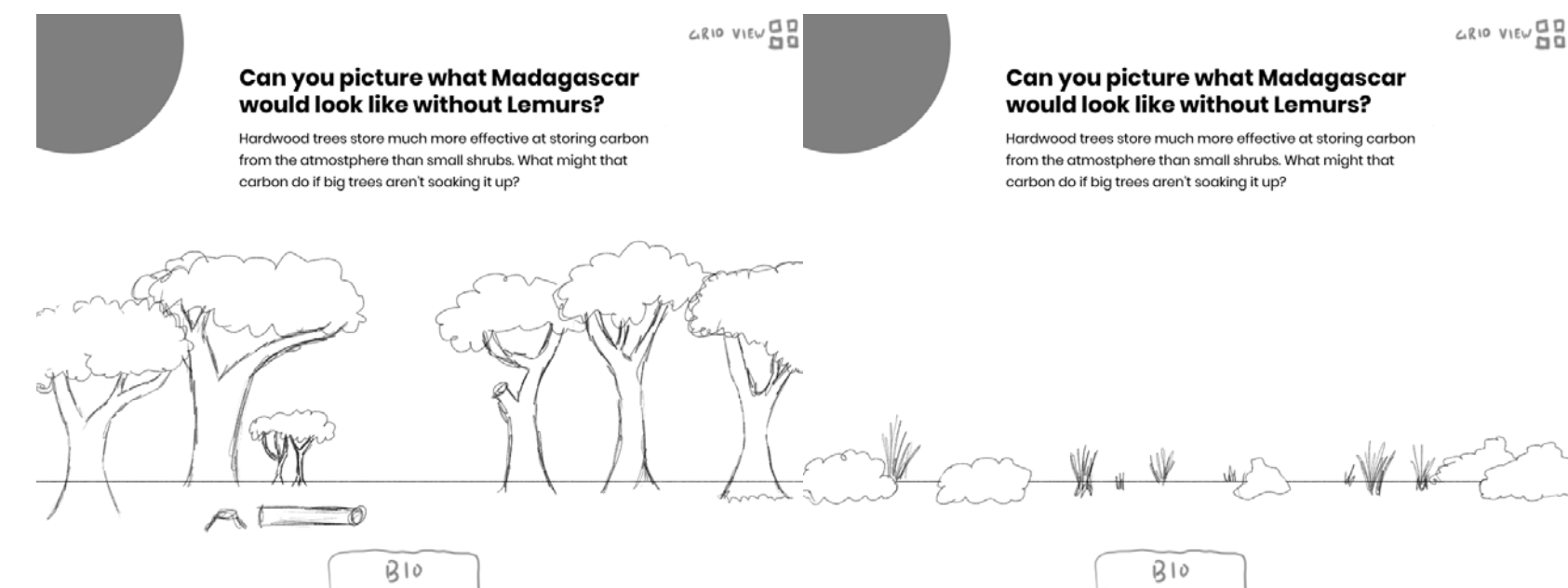
Each character illustration represents a common gut bacteria. As a hidden interaction, tapping on the bacteria in the modal triggers a goofy animation.



Interactive interaction sketch: Bacteria

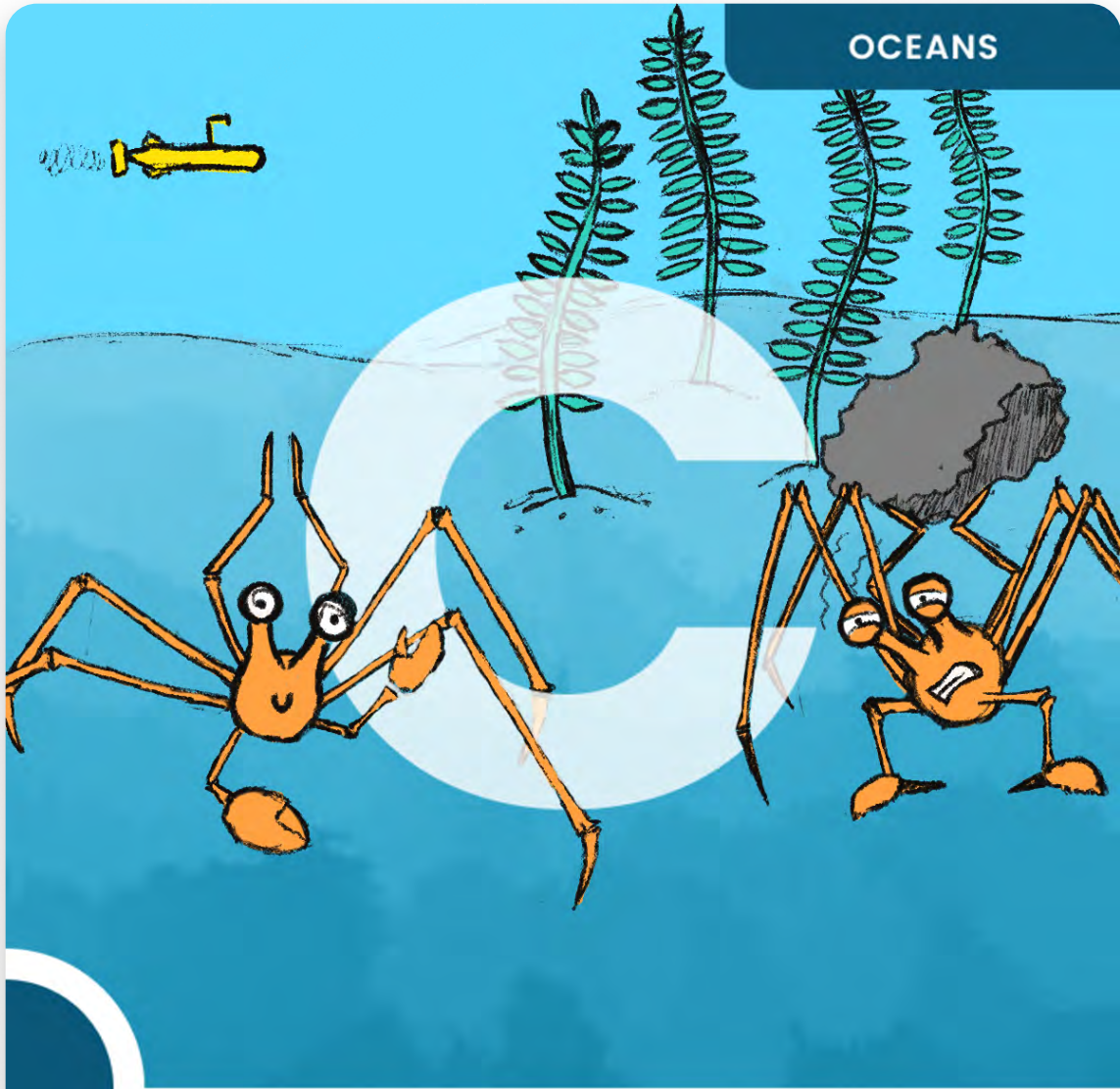
Lemurs and Madagascar's trees have a deeply intertwined relationship. To show the story their pairing, the story is shown in a slideshow format.

The last slide uses a slider to reveal what the landscape would look like without the lemur-tree relationship.



Card Development

CARRIER CRAB (PAIRED WITH URCHIN)

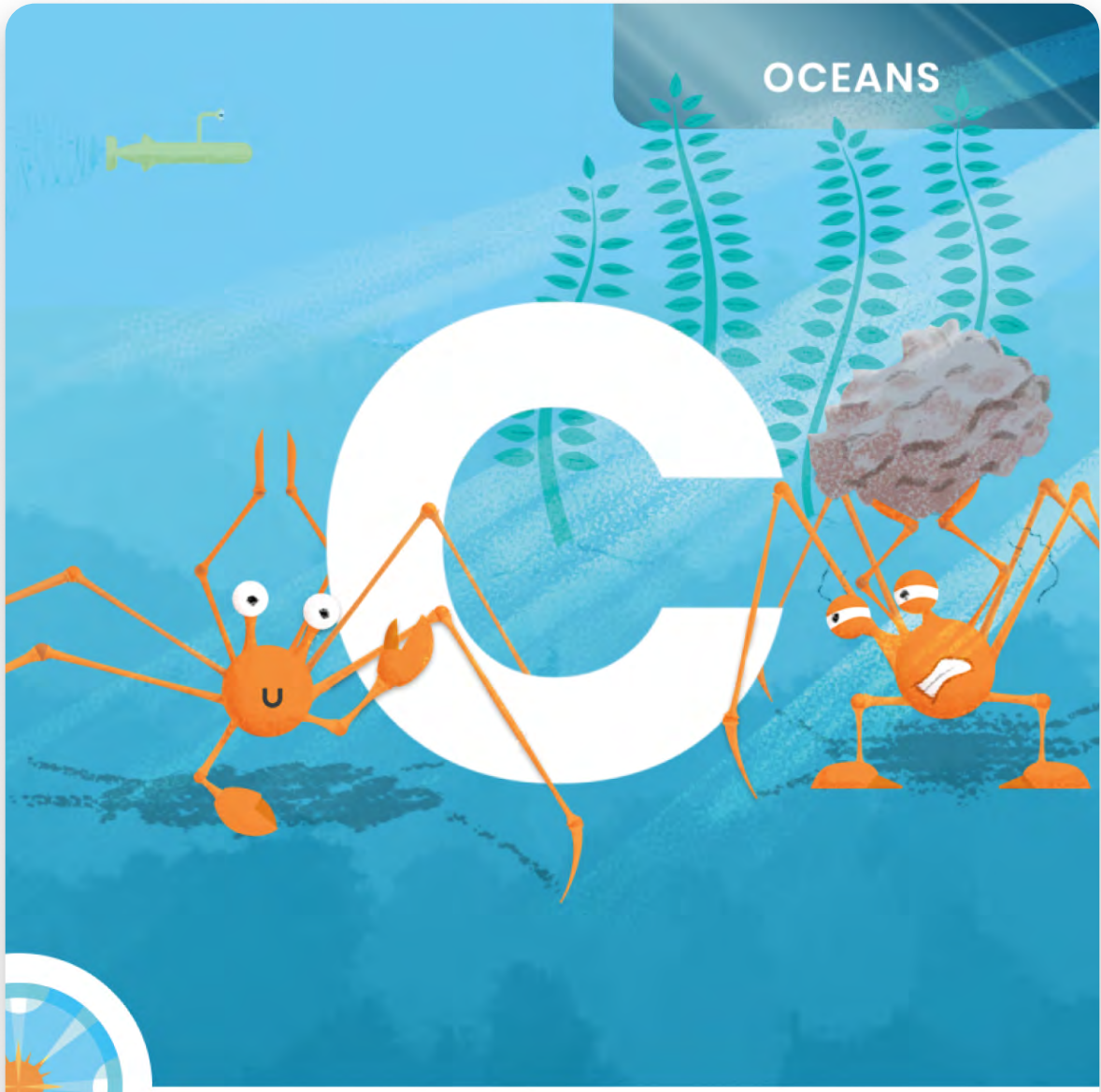


OCEANS

Carrier Crab

This is an example of text describing your animal. It should be a maximum of four lines long, with whatever information you want. *There should be a sentence describing what your animal needs here.*





OCEANS

Carrier Crab

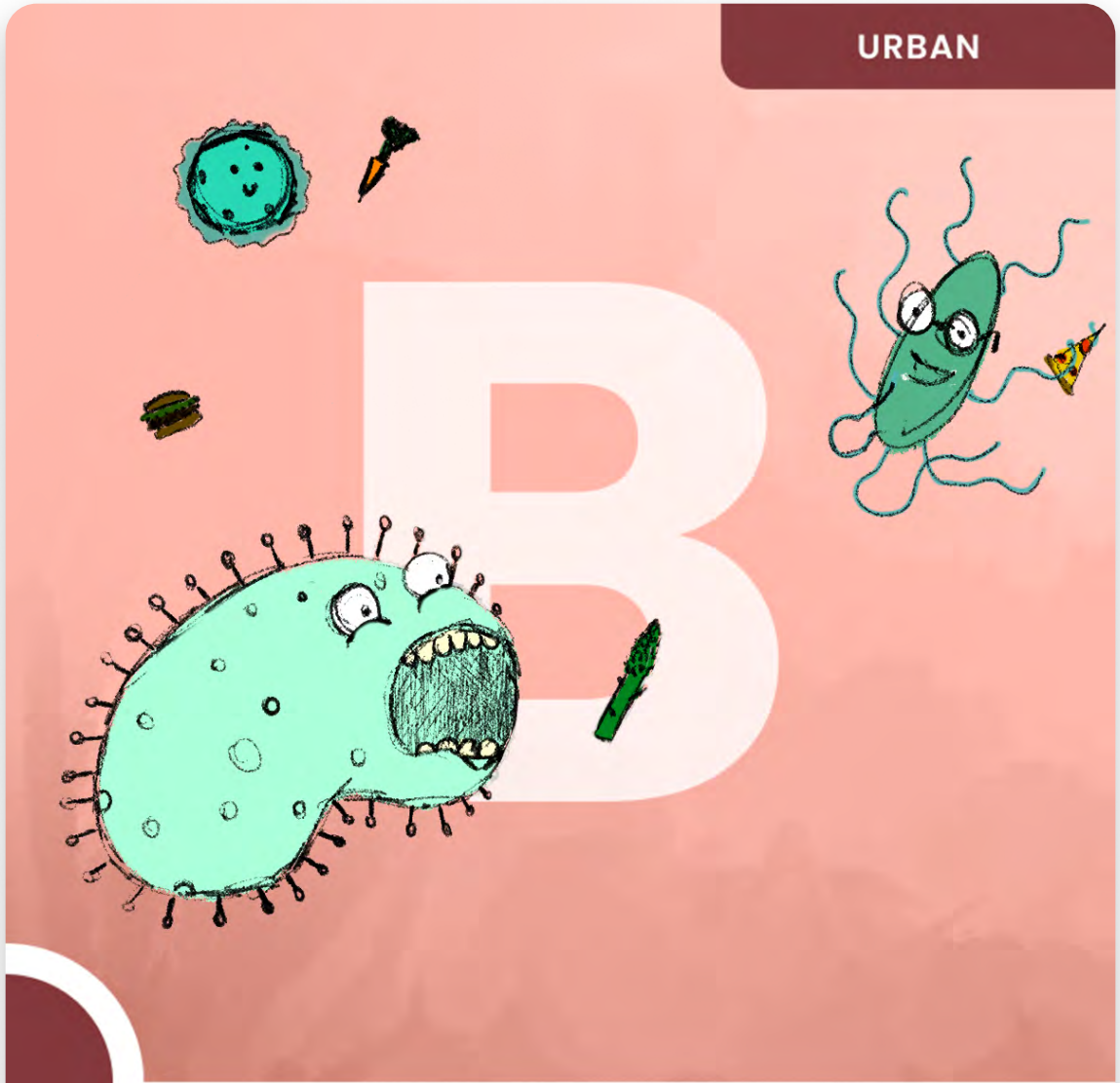
I'm a carrier crab! I'm speedy and good at holding things on my back. I'm not very scary though, and I have trouble scaring predators. *I need help finding someone pointy who I can carry for protection.*

Carrier Crab copy

I'm a carrier crab! I'm speedy and good at holding things on my back. I'm not very scary though, and I have trouble scaring predators. *I need help finding someone pointy who I can carry for protection.*

BACTERIA (PAIRED WITH HUMANS)

URBAN

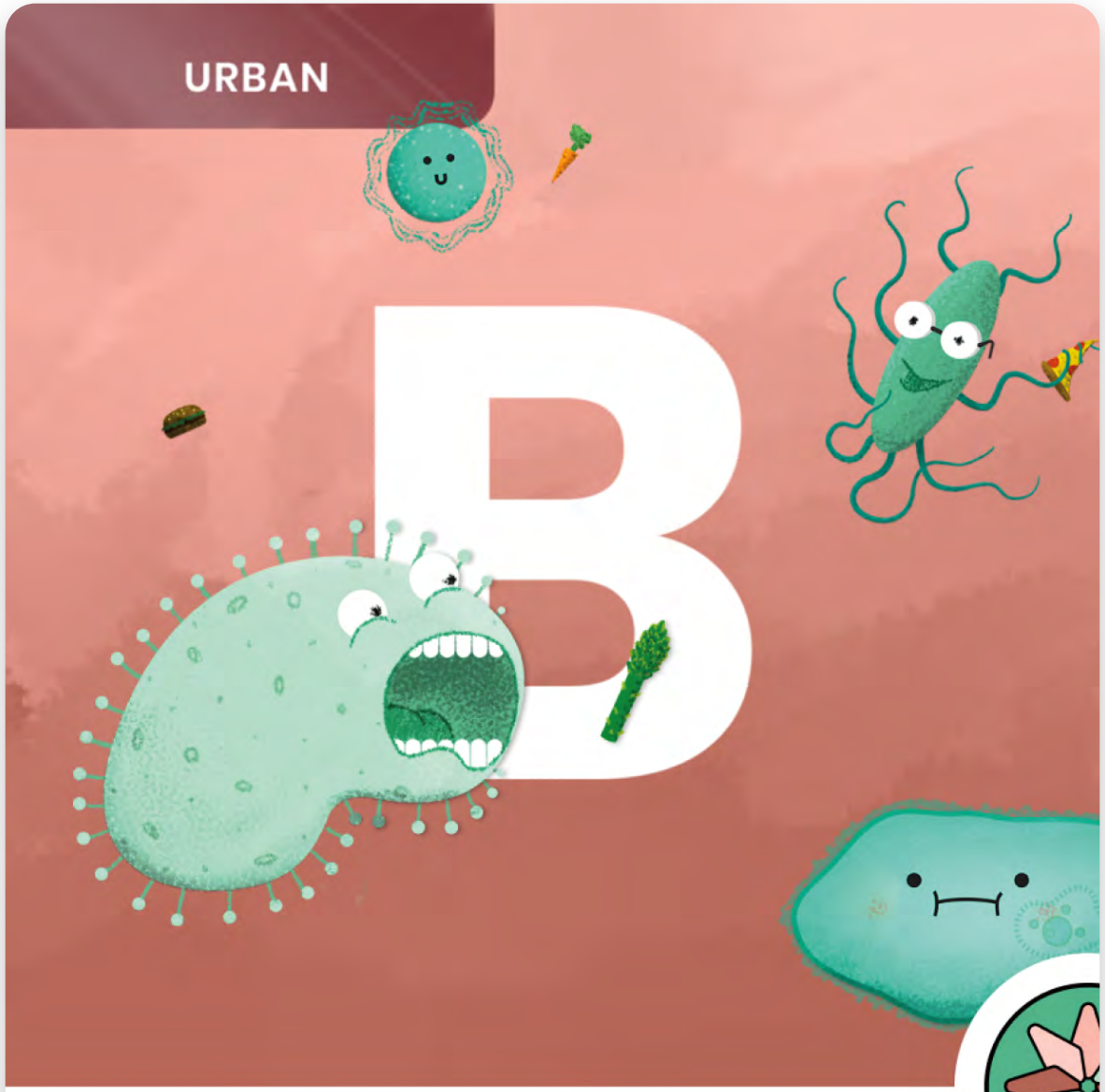


Bacteria

This is an example of text describing your animal. It should be a maximum of four lines long, with whatever information you want. *There should be a sentence describing what your animal needs here.*



URBAN



Bacteria

Hi, I'm bacteria! I'm good at eating tough pieces of food that my pair can't. When I eat, I make vitamins that are helpful for my pair. *I can't survive on my own, I need to find a stomach to be my home!*

Bacteria copy

Hi, I'm bacteria! I'm good at eating tough pieces of food that my pair can't. When I eat, I make vitamins that are helpful for my pair. *I can't survive on my own. I need to find a stomach to be my home!*

LEMUUR (PAIRED WITH DECIDUOUS HARDWOOD TREES)

TROPICAL



Lemur

This is an example of text describing your animal. It should be a maximum of four lines long, with whatever information you want. *There should be a sentence describing what your animal needs here.*



TROPICAL



Lemur

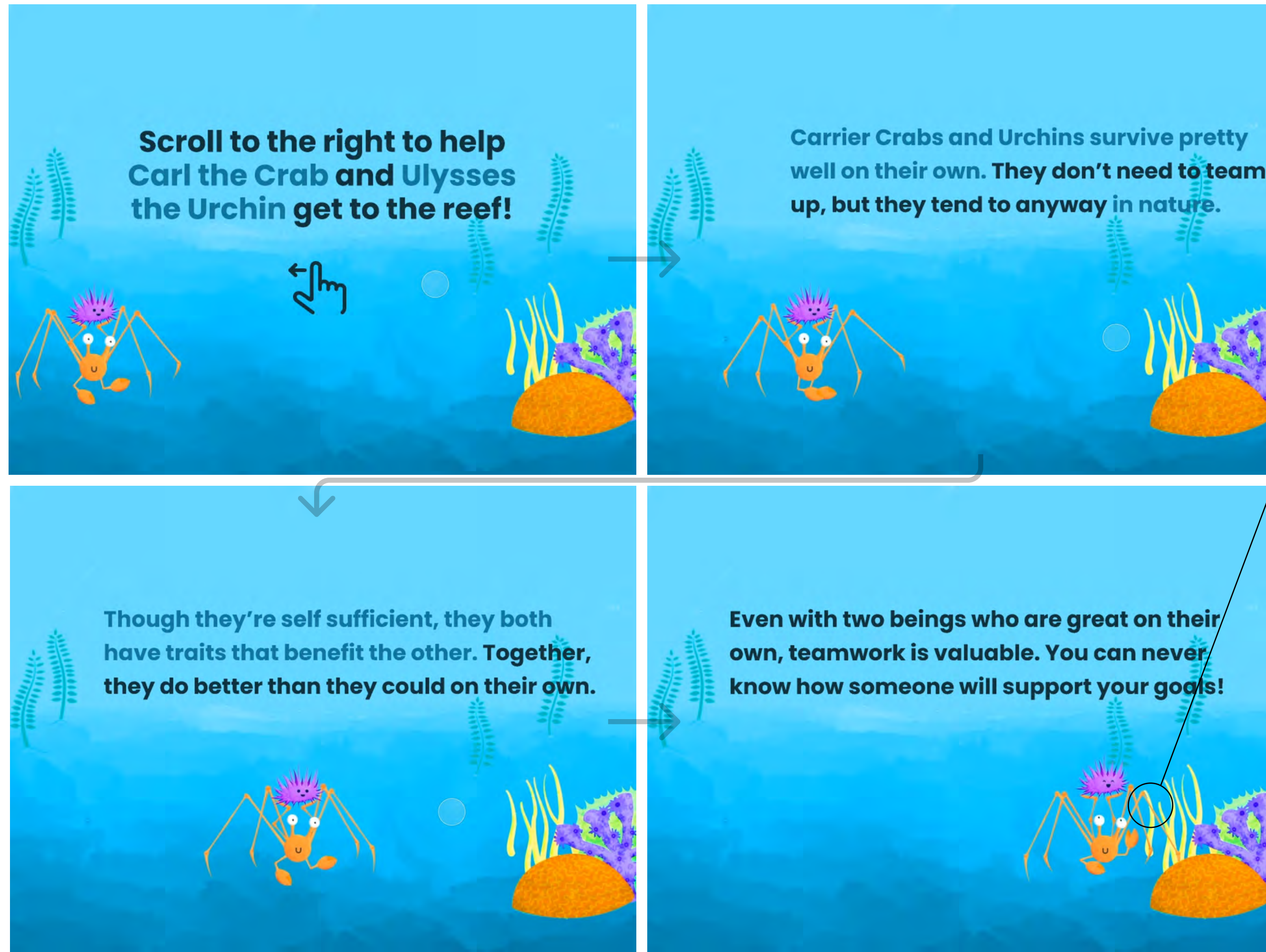
I'm a Lemur! I eat lots of fruit with lots of seeds. I spread those seeds far and wide, helping the rainforest grow and be healthy! *I need to find a pair that has tasty fruit growing from it so I can eat.*

Lemur copy

I'm a Lemur! I eat lots of fruit with lots of seeds. I spread those seeds far and wide, helping the rainforest grow and be healthy! *I can't survive on my own. I need to find a stomach to be my home!*

Digital Interactions

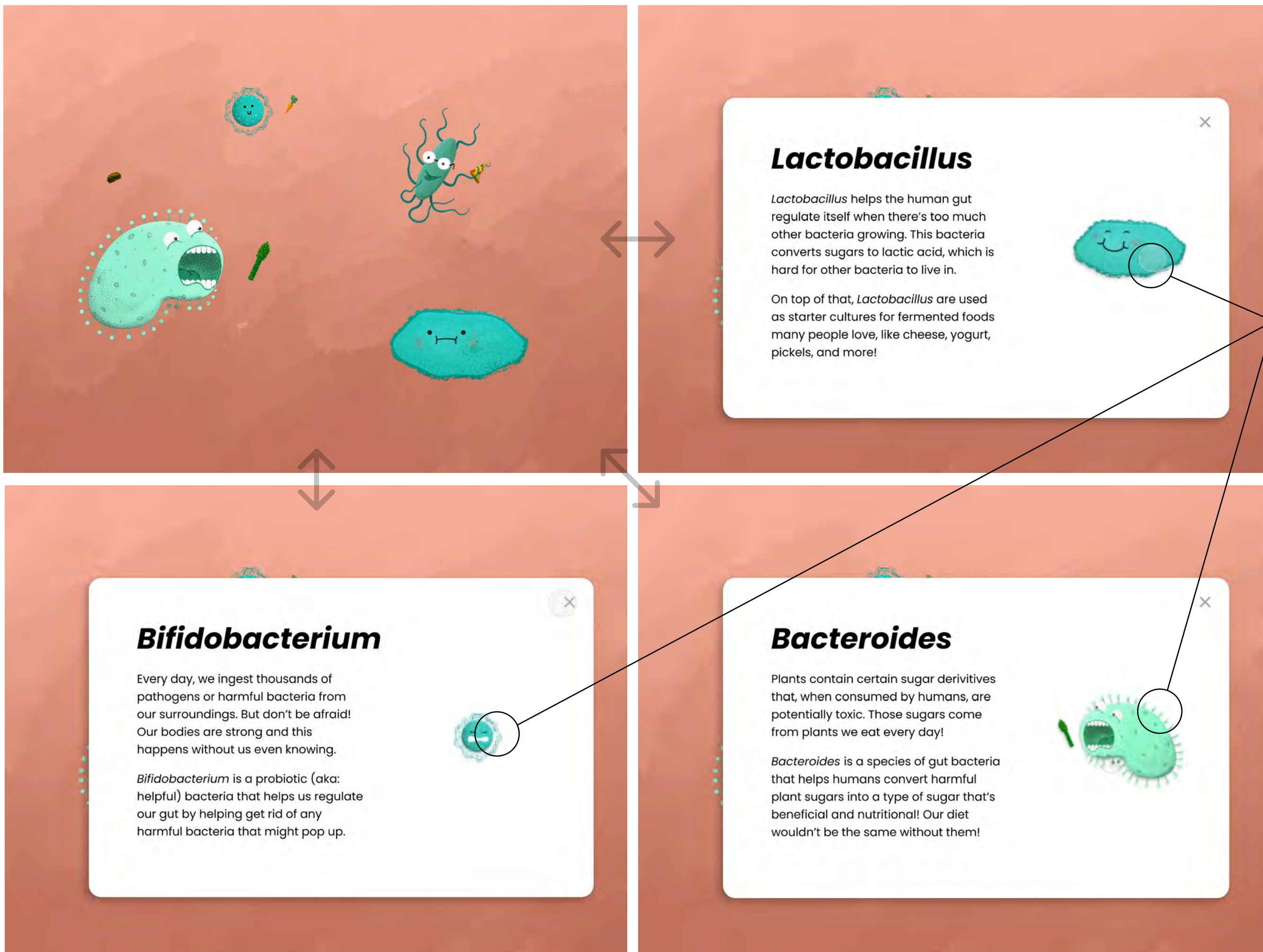
Carrier Crab



As the user drags a finger across the screen, a crab carries an urchin across the screen to a reef.

To add a moment of delight, the crab lifts the urchin and celebrates success

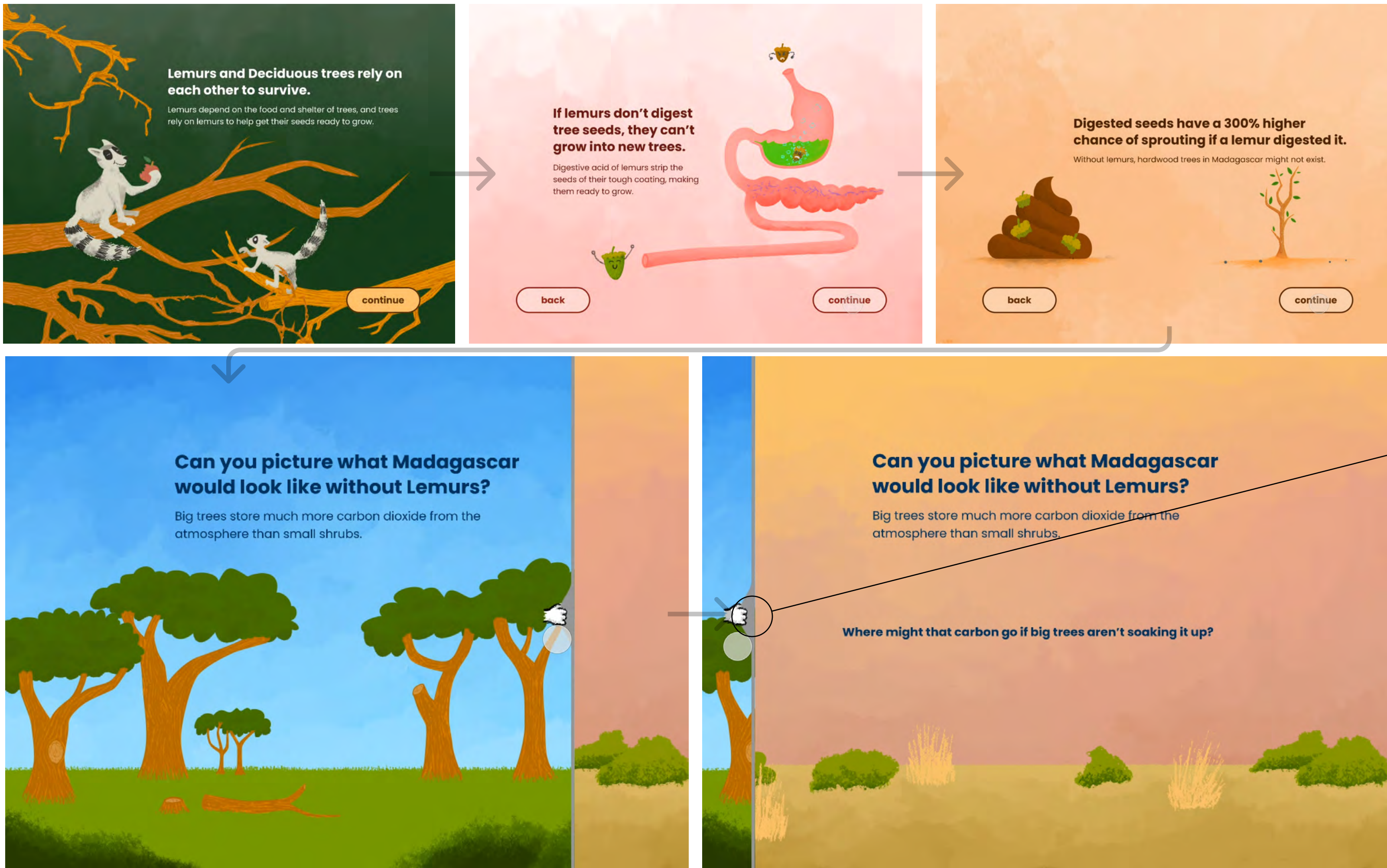
Bacteria



A few bacteria are shown floating inside an intestine. To learn more, a user opens a modal by tapping on a bacteria.

In my research, I found that our demographic of 4th grade students usually explore digital experiences by tapping things. To reward exploration, all bacteria display an animation when tapped.

Lemur



Lemurs and Madagascar's trees have a deeply intertwined relationship. To show the story their pairing, the story is shown in a slideshow format.

The last slide uses a slider to reveal what the landscape would look like without the lemur-tree relationship.

Lessons with Impact

In order to give teachers an opportunity to relate the card content to broader topics with more importance, we included **discussion cards** with related topics.

DISCUSSION TOPIC

Doing Good

Each creature in this game is helpful in someway. Whether it be protection, food, or companionship each job is unique. It is important that we use what we are good at to help others. It can be a skill or something that we have learned.

Discuss what you do, or can do, to help someone. What is something that you can do to make someone elses day brighter?

DISCUSSION TOPIC

Asking For Help

We all need a little help sometimes. Just like these animals, it's okay to need the help of a friend or loved one when you are struggling with something. Don't be afraid to reach out for help, and remember that teamwork is what makes the dream work!

Discuss the importance of asking for help when one needs it, and why it should never be something to be ashamed of.

DISCUSSION TOPIC

Environmental Impact

With all of these pairings, the loss of one of the species would have a negative impact on the other. These species also impact our environment, and the loss of some of these pairings could have a lasting impact on our environment as a whole!

Discuss the importance of respecting the world that we live in, and why we should work to maintain our environment.

DISCUSSION TOPIC

Animal Habitats

Every one of these pairings calls a specific habitat its home, and each habitat has its own special qualities that distinguish it from the others! It is important to recognize the specific traits of the habitat these relationships belong to, and how it helps the pair!

Together with their partner, have each student list out the specific traits of the habitat that their pairing lives in.

DISCUSSION TOPIC

The Importance Of Teamwork

Every relationship in this deck is different, and each animal or species is unique in their own special way. However, there is on thing these relationships all have in common: they use teamwork to accomplish a common goal!

Discuss the importance of teamwork; not only amongst the animals, but amongst one another!

DISCUSSION TOPIC

Accepting Your Uniqueness

Just like these species, we all have special qualities that no one else has. These traits are what make you unique, and should be celebrated. It's okay to feel different from others, but remember that being yourself is the best that you can be!

What types of things make us unique? Discuss the importance of uniqueness, and why it should be celebrated!

“4th graders are much more engaged if they feel like the topic is important.”

With the discussion cards, we can address the goal of making the topic feel important to students. Tying the lessons of symbiotic relationships to issues students can relate to can improve how they understand it's importance.

Thank you!