

CO- DESIGN

session 2

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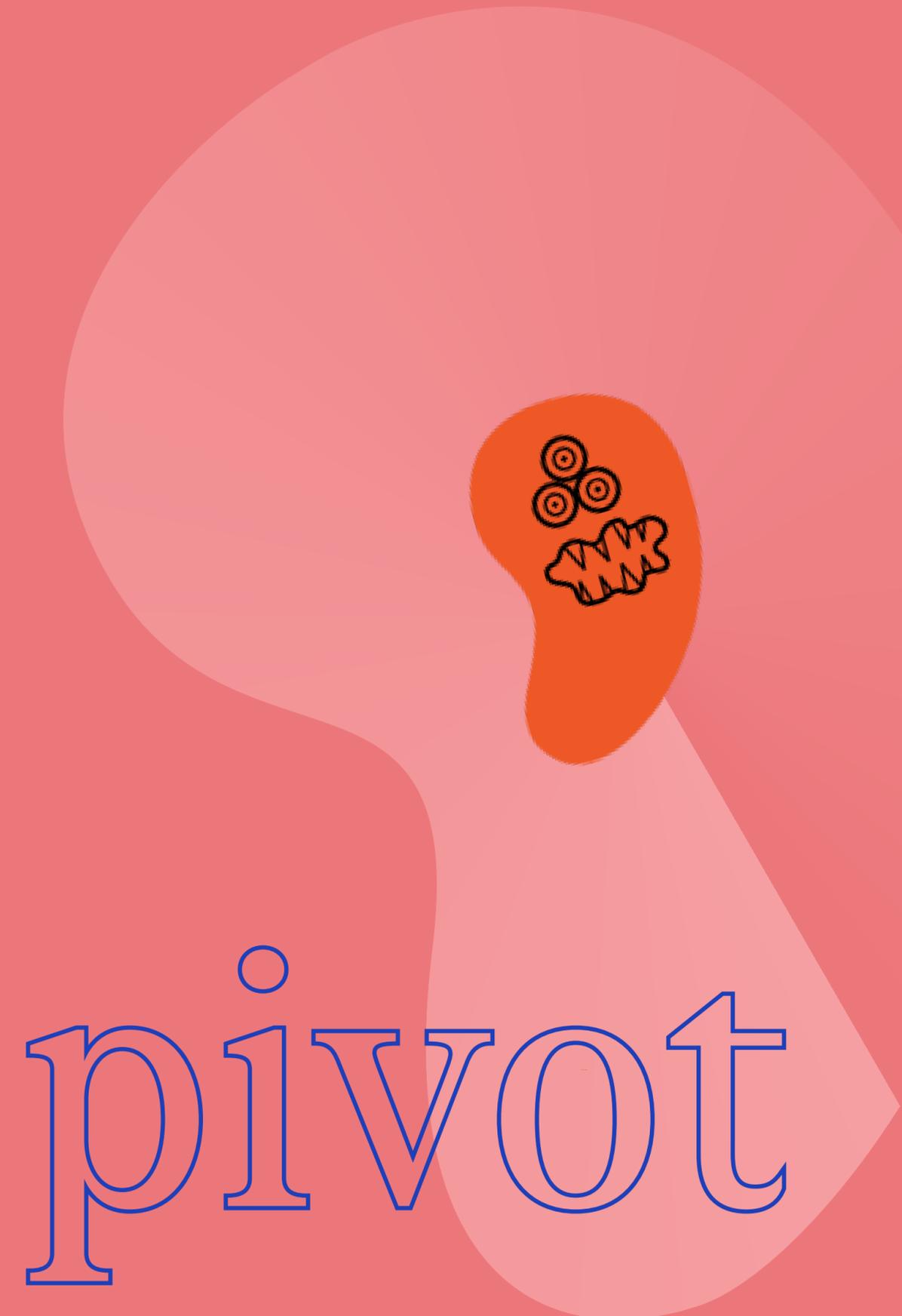
Olga Khvan

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Our first co-design session validated that we have solid game mechanics and controllers, but our game theme needed work. So, we decided to rethink our game theme while keeping our vetted game mechanics intact.

There are so many space games in the world, and we wanted to push ourselves to be more creative. We thought about how one of the main appeals of a space theme is the abstract macro scale environment, and thought we could achieve a similar “other-worldly” effect on a micro scale. From there, we ideated around concepts within microbiology and landed on the microbiome and gut bacteria.



pivot

Setup Overview



A Balance board
Moves claw left and right (Player 1)

B Stomp pad
Zaps bad bacteria (Player 2 or 3)

C Triangle slider
Captures triangle nutrients (Player 2)

D Circle crank
Captures circle nutrients (Player 2)



Session Plan

- 1** Introduce and discuss the microbiome topic
- 2** Explain different roles in the game and how controllers work
- 3** Test 2 versions of the game with different backgrounds, amount of nutrients and their falling speed
- 4** Ask for feedback about interactions and controller setup

Key Findings

Game objectives were ambiguous

Kids didn't fully grasp what happened when they collected nutrients, and had trouble understanding their progress in the game. Instead they focused on the nutrient collection and bacteria zapping. However, the nutrient collection interaction didn't seem to be as appealing as zapping bacteria, so they focused more on the bacteria.

Graphics need minor changes

There was slight confusion about color coordination between the graphics and game controllers. We also got feedback that the color contrast wasn't high enough between the background and nutrients and bacteria.

The onboarding and storytelling should be stronger

When we first introduced our topic as “a game that goes inside the body” the kids' immediate reaction was “eww that's gross!”. When asked if “gross” was a bad thing, the kids gave mixed responses. However when playing the game, we didn't get any additional feedback about the game being “gross”. However, we think a short onboarding sequence will help solidify the theme and make it seem less gross.

Key Findings

Kids enjoyed the controllers, but suggested minor changes

Similar to the first round of KidsTeam, the kids each preferred a different role/controller in the game — some loved driving on the balance board and others enjoyed the zapping and collecting with the slider and crank. We did get some feedback that the crank controller was too big to comfortably use, but that could be easily fixed with a smaller crank.

We also noticed the controllers are flexible enough to be used in a variety of ways — for example one kid ended up sitting and using the stomp pad with his hands. We think this flexibility is great for making this game inclusive for a variety of abilities and preferences.



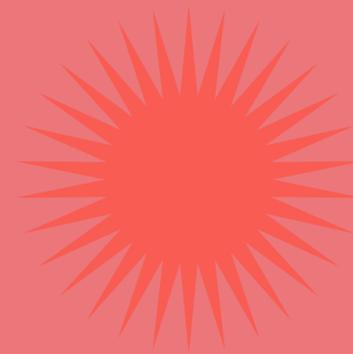
Challenges

Bugs in the code

As we are new with P5JS, we still had a few bugs. For example, some nutrition particles disappeared unexpectedly and some of the bad bacteria at the edge of the screen could not be destroyed.

Button mashing

As previously mentioned, with three players, the dynamic of the game changes. So the player who was only using the stomp pad controller stepped on it repeatedly and sometimes just stood on top of it. That is a challenge for both game code and the role distribution among players. We added a delay in code for the input, but it did not help much.



Building a durable structure

Making a stable enclosure was hard, but the most challenging thing was to create durable support for the crank controller. We screwed the rotary encoder into the enclosure with a nut and 3D printed a piece to connect the rotary encoder to the crank. Unfortunately, both of these points were vulnerabilities, and despite our consultation with Justin and the calculations we did, the crank didn't survive KidsTeam.

Communication

While playing, some of the children barely talked to each other. In one group, the children were closer friends and communicated more, whereas the other group lacked communication, which hindered them from reaching the main goal—collecting nutrients. When one of us gave more clear directions and played the game together with kids, it brought more structure and collaboration to the gameplay.

Incorporating learnings

Clarify game objectives & tie back to our theme

One idea we're exploring is to shift the game objective to produce as many good bacteria as possible. When 3 nutrients are collected, it produces 1 good thing for the body. The good things are collected on the side of the screen and represent the score in a more visual way. We think this could emphasize the nutrient collection, clarify the game progress, and tie the game objective back to our theme.

Add main menu and onboarding screen

We would like to add more screens explaining the main rules and objectives of the game, in order to tie the story of the game together more.

Make structure more durable

One issue we had with the fabricated controller is that cardboard was not strong enough for the interactions. Going forward, we will rebuild the controller using plywood and reinforce critical points to improve the structural stability.

Add flexibility for 3 players

After seeing 3 kids play our game at once, we realized that the game works well for either 2 or 3 players. As we adjust our game mechanics, we're looking for ways to make the game balanced for either 2 or 3 players.



Thank you!