

Ocean Speak - Speech Therapy Game Assessment

Game Concept

Create "Ocean Speak," an interactive underwater world where children's speech creates beautiful interactions with sea life. Fish and underwater plants respond to different speech sounds, creating a living, breathing ecosystem that encourages practice through peaceful play.



Reference Game Implementation

This section describes how we envision the game to work and be integrated into a speech therapy session. It is provided for you to have a reference of how they are used, to also help you decide how you code it as you go through the milestones (See the development milestones for suggestions on the order to develop it)

- The Speech and Language Pathologist (SLP) asks the child a question and the child can answer by tapping somewhere (for example they correctly answer by tapping on a red fish) or saying something (for example they correctly answer by saying "red fish")

- When the child answers (correctly or incorrectly), the environment reacts, motivating the child to keep answering
 - For this project, you can assume the child always answers correctly
- The Speech and Language Pathologist (SLP) controls parameters of the game to make it easier or harder: for example how busy (amount of fish/plants) and hectic (speeds/frequencies) the game is
 - For this project, you can make the parameters be an input only before the game starts, and they never change during the game

The key to success is creating a peaceful, engaging environment that naturally encourages speech practice through beautiful interactions with sea life.

Technical Requirements

- Use Phaser 3.80+ and Typescript
- Set up the game so that it can be hooked up to networking vi websockets (for live SLP + child at the same time, potentially multiple children)
- If you're familiar with the ECS pattern implement the game with it

Core Systems

1. **Physics & Movement**
 - Smooth fish swimming patterns
 - Natural plant movement
 - Particle effects for feedback

Development Milestones

Phase 1: Core Experience (Offline: SLP and child on same device)

1. Basic fish movement (individual and group of fish aka school of fish)
2. Simple plant animations
 - a. No need to edit the asset, rather figure out how to leverage the supplied asset to achieve a natural effect
3. React when child taps

Phase 2: Enhanced Interactions (Offline: SLP and child on same device)

1. Bubbles visual effect using particle emitters
2. Complex fish behaviors
3. Plant growth system
4. React when child talks
 - a. You could use something simple like the [Web Speech API](#)

Phase 3: Polish & Features (Online: SLP and child on different devices)

1. Collision avoidance
2. Achievement system
3. Multiplayer support (SLP+child, SLP+children)

Success Metrics

Technical Performance

- Smooth animations
- Responsive controls
- Efficient resource usage

User Engagement

- Do kids find this game fun and how long they play it before getting bored

Getting Started

- Phaser: <https://github.com/phaserjs/phaser>
- Characters, backgrounds, and animation sprites:
 - <https://kenney.nl/assets/fish-pack>

Final Notes

- Please don't hesitate to ask any questions at any time
- Please don't work over the course of more than 7 days on this project, and let us know once you start working on it
- This is not a small project, we're looking more into how you approach it (including design patterns, architecture, tradeoffs, shortcuts / creative solutions to challenges, comments/documentation) than you delivering everything
 - Make sure to deliver a working game that captures the essence of the task: a fun (even is basic) game for kids that could be used in speech therapy
 - Prioritize fundamental features over completeness
- Please let us know when you start working on this, and send us what you achieve by day 7
 - Please let us know how much time you dedicated to it
- Have fun with the creative aspects!

And remember: This is a showcase of your problem-solving approach and coding style, not a race to implement every possible feature.