

Collaborative Final Project

Game Design document

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FORMAL ELEMENTS

OVERVIEW

Infinity Fish is a 2D educational game about math. The player clicks through the game answering the questions that pop up.

NARRATIVE PREMISE FOR THE GAME

You are collecting sea creatures to add to your aquarium. Learn about the creatures in your collection with fun facts and using them to develop your math skills.

VISION STATEMENT

The players are delivered the following experiences:

- Learning math
- Simple play

GENRE

Educational game.

FEATURES

2D game
Third person view
Single player
Fixed camera view
4:3 ratio screen
Mobile Friendly

PLATFORM

This game will be a web-based game in HTML 5 format, or uploaded as a SCORM package to a learning management system.

LANGUAGE

This game is in English

SOUND

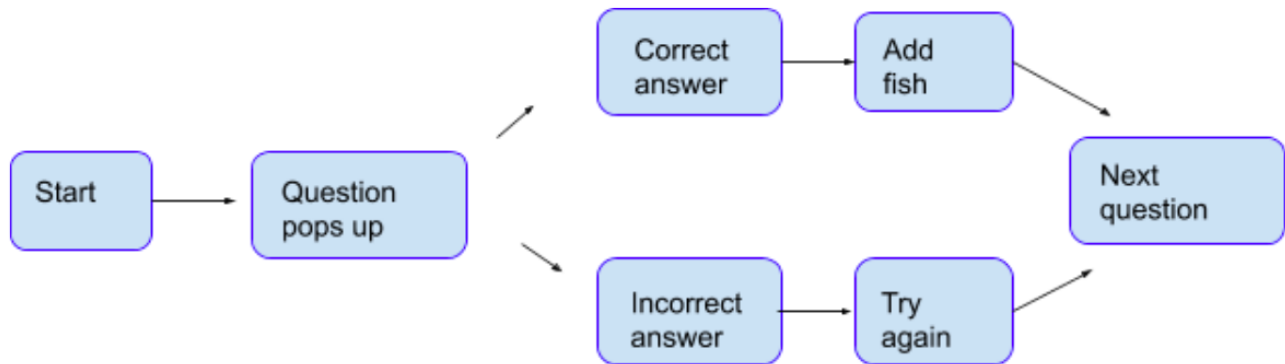
The music and sounds are for the enhancement of the underwater game experience. Questions are narrated by the designers.

PLAYERS

The target audience for this game is children in Grades 3 - 6 (addition, multiplication). The game is a single-player experience and the player controls no characters.

OBJECTIVES

The game objective is to collect various sea life to add to the aquarium by answering questions correctly. The educational objective is to master numbers and math.



PROCEDURES

1. Navigate to the URL in your favourite browser
2. The Splash page loads
3. Voice narration and background music introduce the game
4. Hit the green “START” button to begin.
5. First question appears and voice narrates a “fun fact” and a math question
 - a. Did you know that crabs have only 6 legs?
If you have 2 crabs in your aquarium, how many legs are there?
 - b. Player types in their answer using the keyboard number keys
 - i. Correct answer (value of 12 is typed in) player presses “CHECK” button
 1. Window pops up to congratulate player
 2. Automatically advances to the next question
 - ii. Incorrect answer (value other than 12 is typed in)
 1. Window pops up to prompt player to try again. (loop back to question, player does not move forward until the correct answer is input, mastery)
6. Next question appears and voice narrates a “fun fact” and a math question
 - a. Did you know that an octopus has blue blood and 3 hearts?
If you have 3 octopuses in your aquarium, how many hearts are there?
 - b. Player types in their answer using the keyboard number keys
 - i. Correct answer (value of 9 is typed in) player presses “CHECK” button
 1. Window pops up to congratulate player
 2. Automatically advances to the next question
 - ii. Incorrect answer (value other than 9 is typed in)
 1. Window pops up to prompt player to try again. (loop back to question, player does not move forward until the correct answer is input, mastery)
7. Play continues through all questions
8. End of game shows all creatures in the players aquarium

RULES

Correct answers result in sea creatures being added to aquarium. Incorrect answers, none added.

RESOURCES

This game uses graphics as a virtual manipulative to allow players to count or solve the math question being presented. Voice elements will read the question to eliminate any literacy obstacles.

The primary resource is the sea creatures that the player “collects” for their virtual aquarium.

CONFLICT

The player could be in conflict with the game if they enter incorrect answers.

BOUNDARIES

The game is a closed system available online. player must progress sequentially through the questions as they are presented.

OUTCOME

Game is over when all questions have been answered correctly and the virtual aquarium is populated.

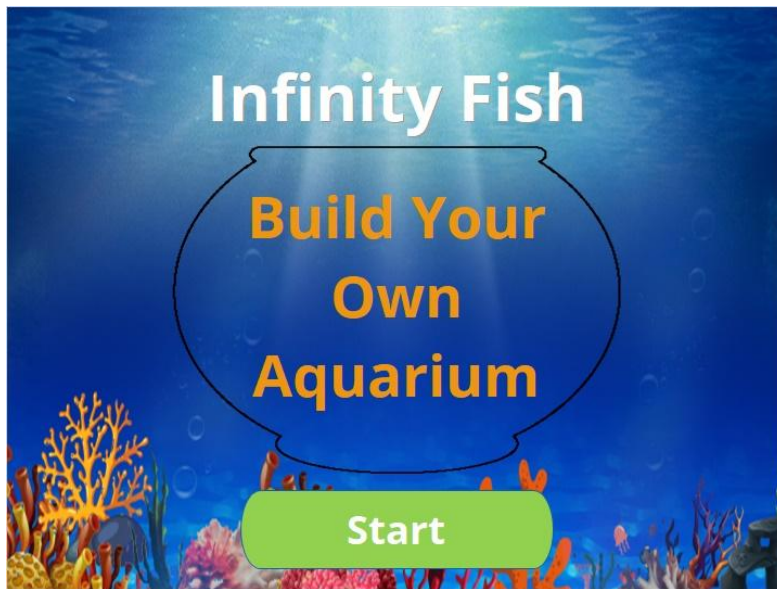
POSSIBLE EXPANSIONS

- Ability to choose a math strand and each level could progress through that strand
- Using a database driver, the educator could customize questions
- Multilingual?
- Multi-platform?
- Customized Avatars?
- Moveable Manipulatives
- Questing format for various levels?
- Choice of narration voice
- Choice of Scene (water, land, space, time)

System Generated Design Document

1. Untitled Scene

1.1 Untitled Slide



Notes:

1.2 *Did you know crabs only have 6 legs!*

If there are 2 crabs in your aquarium how many crab legs are there?

(Numeric, 10 points, unlimited attempts permitted)

Did you know crabs only have 6 legs!
If there are 2 crabs in your aquarium how many crab legs are there?



Enter your answer here and click CHECK: CHECK

Acceptable numeric values	
Equal to	12

Feedback when correct:

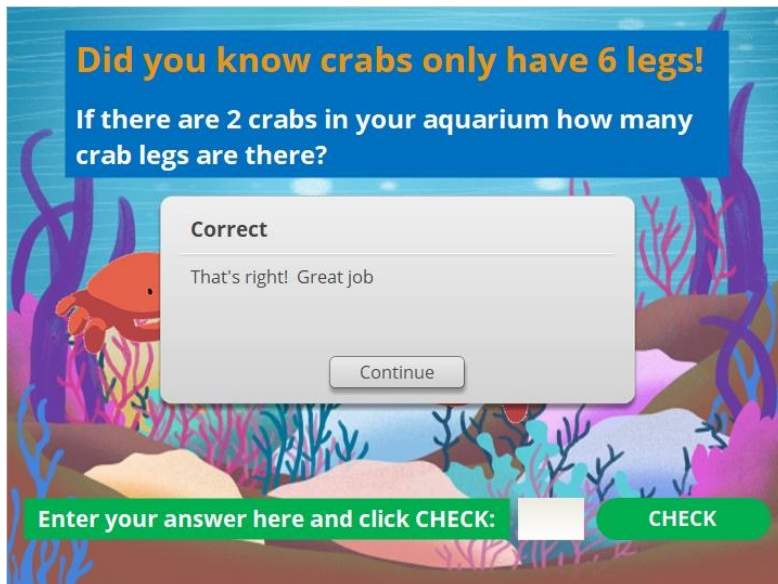
That's right! Great job

Feedback when incorrect:

You did not enter the correct response. Please try again.

Correct (Slide Layer)

Did you know crabs only have 6 legs!
If there are 2 crabs in your aquarium how many crab legs are there?



Correct
That's right! Great job

Continue

Enter your answer here and click CHECK: CHECK

Try Again (Slide Layer)

Did you know crabs only have 6 legs!
If there are 2 crabs in your aquarium how many crab legs are there?

Incorrect
You did not enter the correct response. Please try again.

Try Again

Enter your answer here and click CHECK: CHECK

This interface features a vibrant underwater background with coral and crabs. A blue header contains the question. A white feedback box is centered over the input area, displaying the word 'Incorrect' and a message. A 'Try Again' button is located within the feedback box. At the bottom, a green bar contains the prompt 'Enter your answer here and click CHECK:', a text input field, and a green 'CHECK' button.

Incorrect (Slide Layer)

Did you know crabs only have 6 legs!
If there are 2 crabs in your aquarium how many crab legs are there?

Incorrect
You did not enter the correct response. Please try again.

Continue

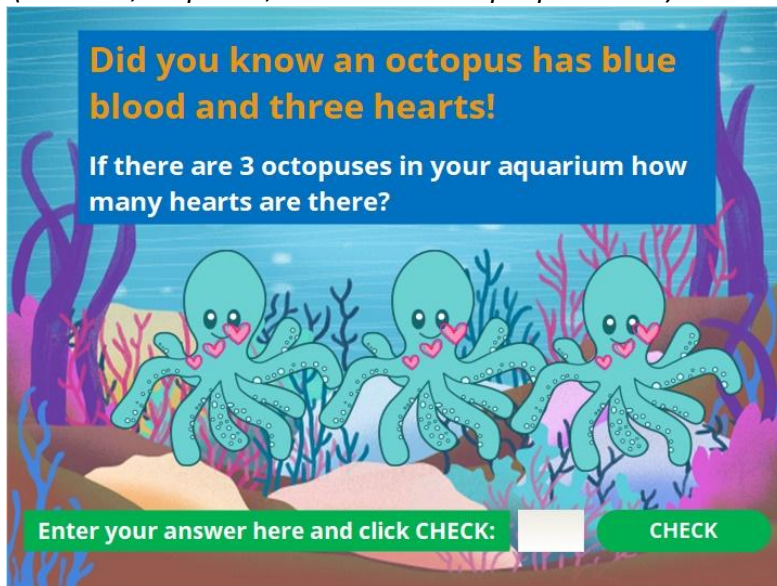
Enter your answer here and click CHECK: CHECK

This interface is identical to the one above, but the feedback box contains a 'Continue' button instead of a 'Try Again' button. The rest of the layout, including the question, background, and input area, remains the same.

1.3 Did you know an octopus has blue blood and three hearts!

If there are 3 octopuses in your aquarium how many hearts are there?

(Numeric, 10 points, unlimited attempts permitted)



Did you know an octopus has blue blood and three hearts!

If there are 3 octopuses in your aquarium how many hearts are there?

Enter your answer here and click CHECK: CHECK

Acceptable numeric values	
Equal to	9

Feedback when correct:

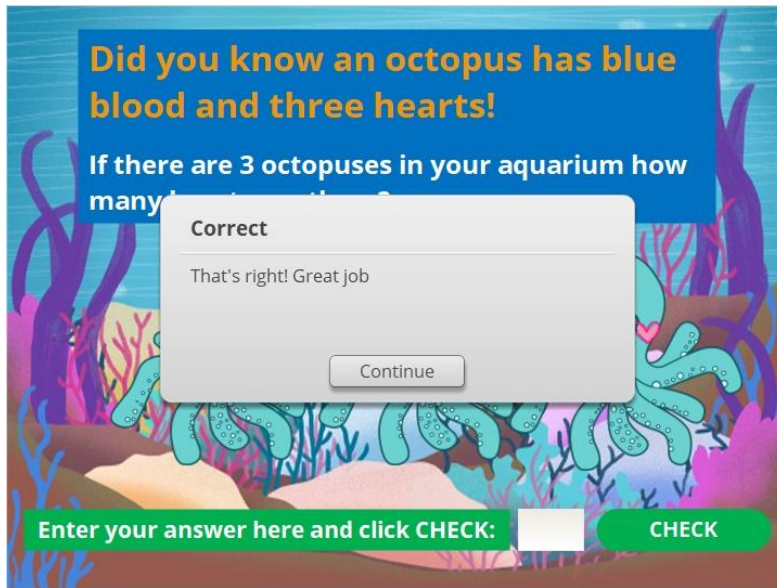
That's right! Great job

Feedback when incorrect:

You did not enter the correct response. Please try again.

Notes:

Correct (Slide Layer)



Did you know an octopus has blue blood and three hearts!

If there are 3 octopuses in your aquarium how many hearts do they have?

Correct

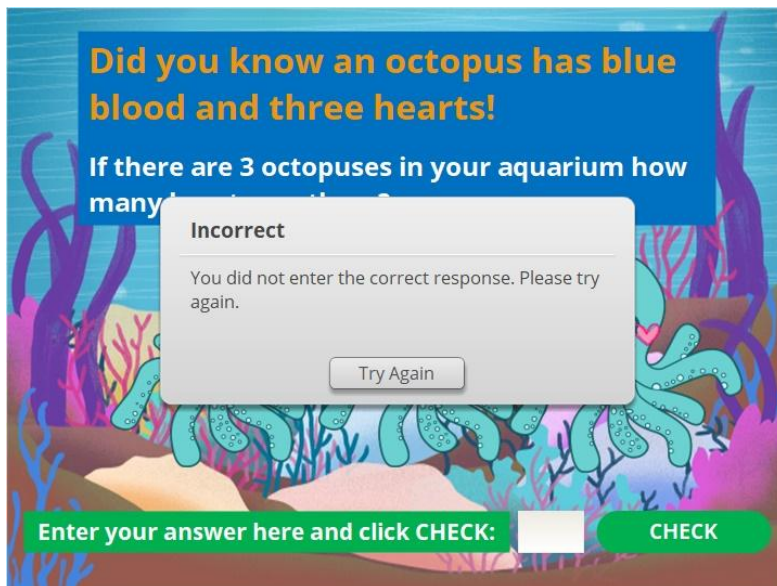
That's right! Great job

Continue

Enter your answer here and click CHECK: CHECK

The slide features a vibrant underwater background with purple and blue coral, pink and blue seaweed, and several blue octopuses. A blue text box at the top contains the trivia question. A white modal box in the center displays the 'Correct' message and a 'Continue' button. At the bottom, a green bar contains the prompt 'Enter your answer here and click CHECK:', a white input field, and a green 'CHECK' button.

Try Again (Slide Layer)



Did you know an octopus has blue blood and three hearts!

If there are 3 octopuses in your aquarium how many hearts do they have?

Incorrect

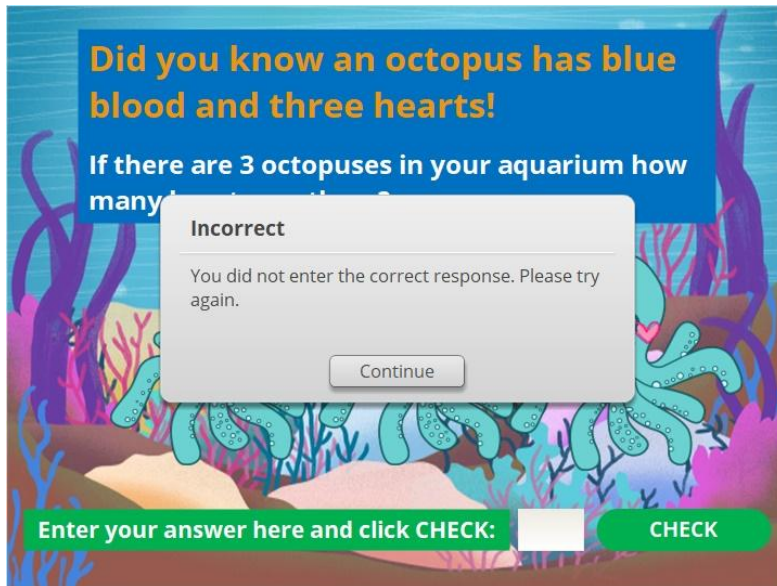
You did not enter the correct response. Please try again.

Try Again

Enter your answer here and click CHECK: CHECK

The slide features the same vibrant underwater background as the previous slide. A blue text box at the top contains the trivia question. A white modal box in the center displays the 'Incorrect' message and a 'Try Again' button. At the bottom, a green bar contains the prompt 'Enter your answer here and click CHECK:', a white input field, and a green 'CHECK' button.

Incorrect (Slide Layer)



Did you know an octopus has blue blood and three hearts!

If there are 3 octopuses in your aquarium how many hearts do they have?

Incorrect

You did not enter the correct response. Please try again.

Continue

Enter your answer here and click CHECK: CHECK

The slide features a blue background with a coral reef scene. A white dialog box with a grey border is centered on the screen, displaying the 'Incorrect' message. At the bottom, there is a green bar with a text input field and a 'CHECK' button.

1.4 Untitled Slide



Infinity Fish

Congratulations, enjoy your fish tank!

The slide shows a large, rounded rectangular frame containing a colorful illustration of an aquarium. Inside the frame, there are three blue octopuses and two red crabs swimming among yellow fish and bubbles. The background of the slide is dark blue with various sea life like coral and seaweed.

Notes: