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CAP'N Weatherbeard -in- Pirate Cannon Battle (TEMP)

Game Story

Yarr! The game is called CAP'N Weatherbeard -in- Pirate Cannon Battle. In this game, you play as a new pirate in Cap'n Weatherbeard's storied crew. Cap'n Weatherbeard's best days are behind him. He used to be an ambitious young pirate, but after losing his leg, gaining scurvy, not shaving for years, and acquiring emphysema from years of smoking low quality tobacco, he realizes that the odds of him taking over the seas, discovering the fountain of youth, and controlling trade are sadly long past him. Now he is an ambivalent pirate going through the motions of his life.

Before he finally retires, Cap'n Weatherbeard is going on one last high seas adventure in hopes of finding meaning. Join him as he follows his last treasure map, which he found in a garbage can. Along the way, enemy navies will be ever present to try to restore order and justice to the seas. Sea monsters will guard your treasure, and rival pirates will try to steal it! You will have to fight through many them all, just to have one last chance for fortune. Are you prepared to face the high seas? Will the Cap'n come out of his mid-life crisis a whole different person? Play to find out!

Learning Goals

Learn multiplication and drill problems that get more difficult as the player progresses. The game will present the player with a grid with numbers on both axes. To target a tile, the user will click on the grid and answer the multiplication problem present by both axes of the grid. The grid can be scaled so it can be used for basic multiplication or higher level multiplication, including 2 digit multiplication. This could be expanded to cover more areas, such as division, addition, and subtraction, but our focus for now is on multiplication.

Learn number sense through the money system in the game. Every 5 levels, the player will find a treasure chest and gain in-game money. The player must convert the money found in the chests into usable and more easily-carried money. For example, if the player find 100 silver coins, they could convert it into 10 gold coins (one gold coin is worth 10 silver coins), or 1 platinum coin (worth 100 silver coins). If the player does not correctly convert their money, they cannot carry it all onto the ship, since the ship will have a weight limit.

Design Ideas

- Game board based off of Battleship - players solve multiplication problems to fire at enemy ships
- Players unlock new levels after completing the previous one.
- Players have limited supply of ammunition and “misfire” onto a square they didn’t mean to hit or onto their own ship for a small amount of damage when they get a question wrong
- Enemy ship themes based on historical nations (British fleet, spanish armada, etc.), as well as pirates and sea monsters with more creative themes
- The grid increases in size as the game progresses, making the levels more difficult.
- Players could unlock or otherwise acquire powerups (multishot, reveal a square, etc.)
- Players could acquire some power-ups and ship customization by spending in-game money gained through playing at an in-game store.
- Timer counts down and a player must answer before the timer runs out or their ship is hit
- The ship can only be damaged so many times before the ship sinks. If the ship sinks, the player will lose a percentage of their money and have to start the game over at the nearest base-10 level (levels 1, 10, 20, 30, etc.). A player can lose a level without their ship being destroyed
- Players will open a treasure chest and earn in-game money every 5 levels
- The ship will have some kind of “coin weight limit.” The player will be unable to carry more than some amount of coins. To make up for this, the players will be able to exchange large amounts of lower-value coins for a few higher-value coins

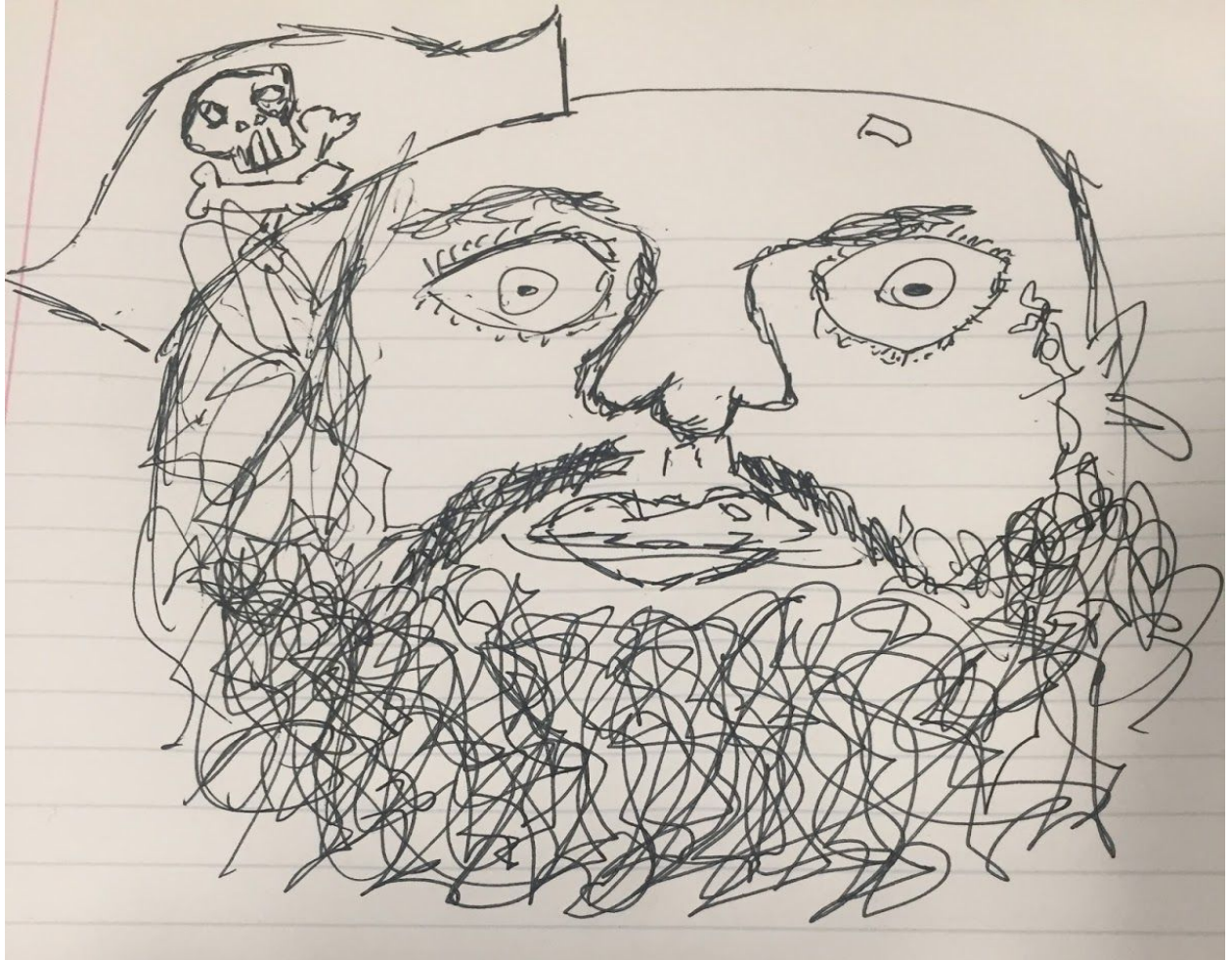


Figure 1: Cap'n Weatherbeard (rough sketch)



Figure 2: Prototype Level (taken from initial pitch)

Game Logic

The game begins with some kind of introductory cutscene, and then the player is taken to the start screen. Once the players starts, they are taken to a level selector. When they first start playing, there will only be the first level present. By continuing to play,

more and more levels will be unlocked. On this level selector, the players can also choose to buy something from the in-game store. However, they won't begin with enough money to buy anything from this store. By playing, they will be able to buy more and more.

To begin the game, you start by choosing a level. Then, you are taken to a battleship-like board where you play out a battle. Players select a grid square to target. They then answer a multiplication problem. If they get the problem right, they successfully fire a shot at that square. The player must discover and sink all enemy ships before their own ship sinks or they use up their supply of ammunition. If a level is successfully completed, the player can advance to the next level. If not, then the player must retry the current level in order to advance.

The player will be able to make money every 5 levels by opening and sorting in-game money from treasure chests found through exploring. The player will then sort lower-value coins into fewer higher-value coins so that their ship carries the least amount of coins. If the player missorts their money (by trying to give themselves more or less), they will be unable to take as much money from the treasure chest.

The player's ship can take damage, either from enemy ships or misfires. Although losing one level isn't enough to sink the player's ship, repeatedly losing levels will eventually cause the player's ship to take so much damage that it sinks. If the player's ship takes too much damage, they must restart at an earlier level and spend some amount of money to get their ship repaired.

Once the player beats all of the levels, the player reaches the final treasure, and a cutscene plays out to reveal the final treasure and the renewed lease on life that Cap'n Weatherbeard has found.

User Stories/Tasks

As a pirate, I want to fight enemy ships.

Task: Implement a mechanism to fire at enemy ships when the player correctly answers the given math question

Assignee: Matt + Nick C

As a pirate, I want to discover new ships and find buried treasure.

Task: Create multiple levels for the players to advance through and include other unlockables.

Assignee: Nick P

As a pirate, I want to be threatened by other ships so that winning is more rewarding.

Task: Implement a time limit for answering questions. Failing to answer questions in the allotted time results in getting attacked

Assignee: Matt + Nick C

As a pirate, I want to be able to spend the treasure I have collected on new abilities and ships for a more rewarding experience.

Task: Implement a store and in-game currency

Assignee: Ashley

As a player, I want to play a game with interesting visual elements for a more exciting and rewarding experience.

Task: Create artwork for the game

Assignee: Nick P

As a teacher, I want this game to be relevant for students with different skill levels so that more students can learn with it.

Task: Implement a variety of difficulty for levels and have difficulty increase as the game goes on

Assignee: Nick P.

As a player, I want to be entertained so that learning math does not feel tedious.

Task: Implement reward/customization system and provide feedback for successful completion of exercises. This will be implemented with the in-game store and by giving the players an in-game monetary reward for completing so many levels.

Assignee: Ashley

As a Teacher, I want my students to learn math so they can meet educational standards.

Task: Incorporate relevant mathematical concepts and questions so that students can learn the right topics (i.e., number sense, multiplication, and fractions). We will incorporate multiplication through the enemy battles, and number sense through the money system in the game.

Assignee: Matt and Nick C.

As a student, I want to learn math so that I can excel in school.

Task: populate game with chances to answer questions that require knowledge in several different skills to improve multiple areas

Task: provide multiple opportunities to answer questions and test knowledge

Assignee: Matt, Nick C., and Nick P.

As a developer, I want to create an interesting game so that I can gain experience and be proud of something I have accomplished.

Task: Try our best to build a decent game.

Assignee: Matt, Nick C., Nick P., and Ashley