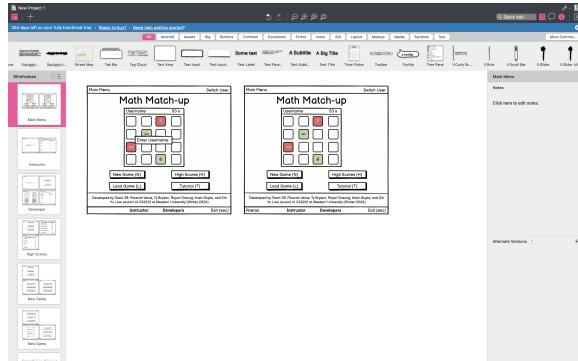
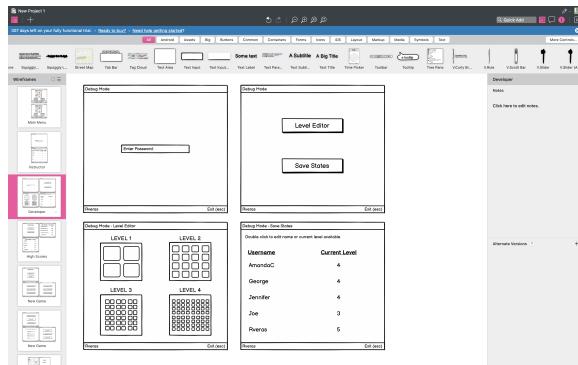


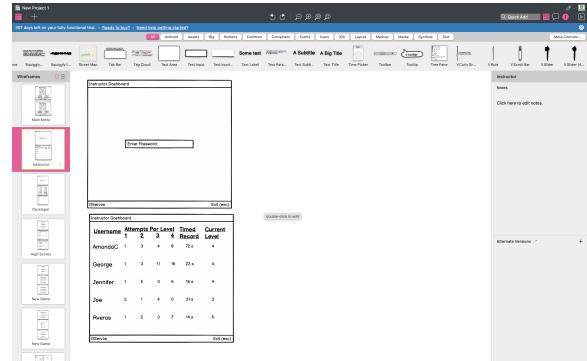
User Interface Mockup



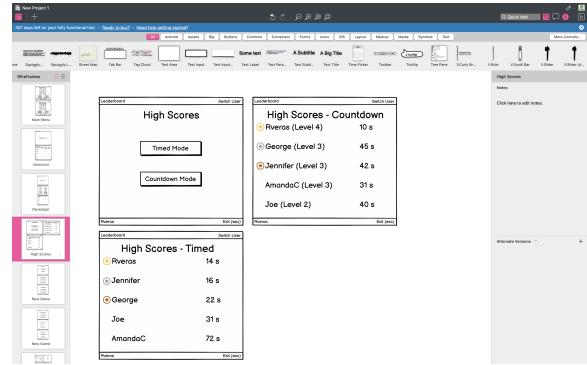
Main Menu: Upon opening the game, the user will be prompted to enter a username. They may either enter a new username which will create a new account, or type a previously used username to load saved data from that account. The main menu screen will then be available with shortcut commands listed in the brackets. These decisions were made to be able to log in and switch user accounts quickly. A switch user button is available in the top right. A sub-menu is created for ease of access. Instructor dashboard and developer mode can be accessed using the buttons on the middle-bottom section of the main menu.



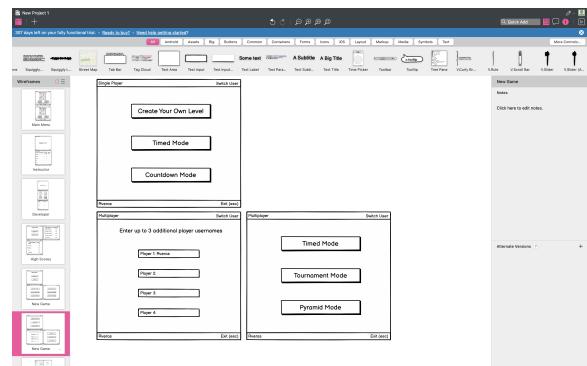
Developer Mode: Developer mode is password protected so game levels and user info cannot be changed by users. Upon entering the password, you can select to enter the level editor screen or the save states screen. The level editor screen was made to access all levels without needing to be unlocked first, as well as to be able to quickly change the equations and answers available on the game cards of each level. The save states screen displays the current level each user has reached and can be changed by the developer to lock or unlock levels. The usernames can also be changed here in case someone would like to retain their save state but alter their username.

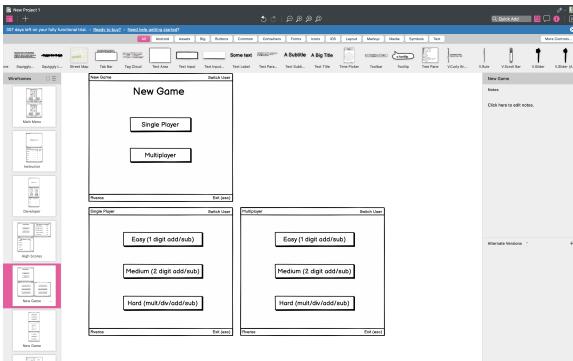


Instructor Dashboard: The instructor dashboard is password protected and will display the attempts per level, timed record, and current level for each user. This is done for security so instructors can determine the efforts and progress made by each user.

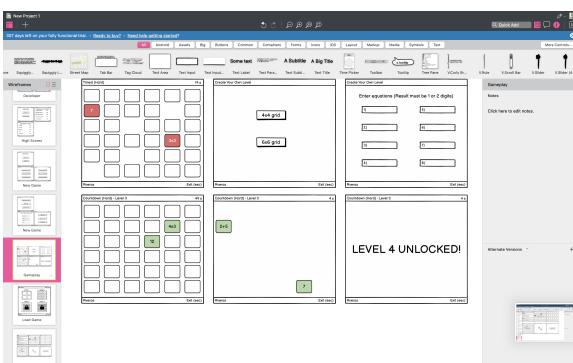


High Scores: The high scores screen has the option to select between seeing the high scores for the timed mode or countdown mode. This is included for players to remember their achievements. A gold, silver, and bronze star is included next to the top 3 players to motivate others to continue playing so they can achieve a star and better their math skills.



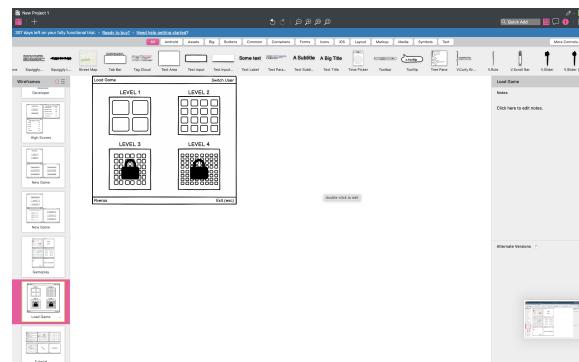


New Game: The new game screen offers a selection between single-player and multiplayer. The following screen displays the difficulty level. Easy provides addition and subtraction with single-digit numbers in the equations. Medium has 2-digit addition and subtraction. Hard includes 2-digit addition, subtraction, multiplication, and division. This choice was made so players with less math knowledge can use the game to improve their math skills to a higher degree, while those already with a higher level of math skill may have fun practicing and polishing their math skills in the higher levels.

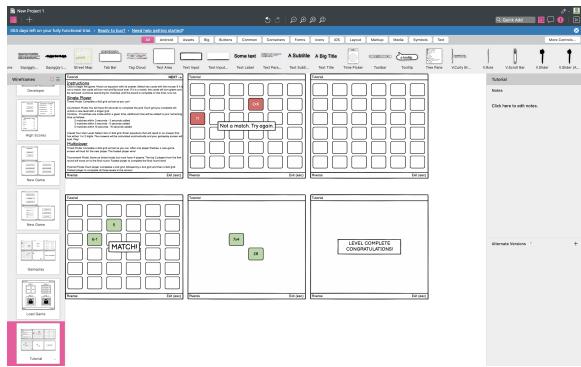


Gameplay: The different gameplay screens are shown here. Timed and countdown mode include "Timed" in the top left corner with the difficulty level in brackets so players can determine the difficulty setting they are on. When an incorrect pair of an equation and its answer is chosen, the pair is turned red before the card is flipped over. If the pair is correct, it turns green. This decision was made so players can quickly determine if they had a correct answer or not, while also incentivizing putting the effort in to calculate and find correct answers. The cards are originally face down, flipping over as they are clicked with the mouse. If the two consecutively flipped cards do not match, they turn red and are returned to the face-down position. If they are correct, they turn green and disappear from the board to easily identify what cards remain and show a positive state of progression as correct matches are found. If level 1, 2, or 3 are completed in countdown mode, text showing that the next level has been unlocked is shown. Timed mode has the clock displaying how long you have taken, in the top right, while countdown mode counts down from 60 seconds, adding time when combos are achieved. Create your own level allows you to create 4x4 or 6x6 grid, inputting equations. The answers will be automatically input by the computer to ensure accurate results are on the cards. Tournament mode will utilize timed mode on a 6x6 grid. Once one player completes the grid, the next player's username will appear on the bottom left of the screen and they may start their game. Slowest player to complete the grid is eliminated. Pyramid mode will also utilize timed mode, with each player completing a 2x2, then 4x4, then 6x6 grid. After all grids are complete, the next player will do the same. The slowest player is eliminated.

New Game: If the single-player mode is chosen, they have the choice to create their own level so parents can challenge their children, or students can challenge themselves and practice equations they are less familiar with. Timed mode and Countdown mode are two additional game modes included in the single-player mode. To offer a more competitive mode in Countdown, additional levels can be unlocked. In Timed mode, you will see how fast you can complete a 6x6 grid of questions. If Multiplayer is selected, a screen will ask for additional usernames to be added. This will allow players to complete one after another in each available game mode. The multiplayer game modes include the same above-mentioned game modes as well as an additional tournament mode and pyramid mode.



Load Game: The furthest achieved saved state of the current user will be displayed. They may choose an easier level, or the current furthest level they have unlocked. This is done to give players a sense of achievement and motivation to continue to unlock more levels. The switch user button is located in the top right corner of the screen so players are able to quickly switch accounts and load their own available levels.



Tutorial: The tutorial screen shows the instructions on how the game works. There is then a NEXT button in the top right to go through a basic tutorial of the game mechanics. This will have the user select two cards, turning red if incorrect, displaying "Not a match. Try again.", or green if correct, displaying "MATCH!" This is to give a visual representation of the game and how it will operate. If the tutorial level is completed, "LEVEL COMPLETE CONGRATULATIONS!" will be displayed on the screen. Alternatively, the "Exit" button or ESC key can be pressed at any time to return to the previous screen.