MYSTERY BLOCK

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ABSTRACT
Mystery Block is a variation of Tic Tac Toe played on a 4x4 grid board. Players choose 1 card out of 16 before the game begins, representing a secret block on the board as their own. The objective is to get four of their symbols in a row or column while avoiding the opponent's Mystery Block, which results in a loss of the game.

MATERIALS
- 4x4 numbered board grid
- 16 numbered cards
- Two pen /pencils

RULES

1. Each player begins by picking up a numbered card from a shuffled deck. The number they pick will correspond to a numbered block on the board that will be secretly marked as their symbol.

2. The players decide who will be X and who will be O. Once decided, player X will start the game by marking their symbol on the board.

3. After the first player has marked their first symbol on the board, it is the second player's turn to do the same, and this will repeat until one player can achieve marking four of their symbols in a row, column, or diagonal line.

4. If a player marks their symbol on the opponent's secret block, they will automatically lose the game.

5. If the game ends in a tie, the players will play again until someone wins.

DESIGN PROCESS

Mystery Block is a modified version of the game Tic Tac Toe that I designed to achieve two primary purposes: to limit the chances of the players resulting in a tie and to change the mindset strategy for each player. In the original game, there are two players, one of which plays (X) and the other (O). Both players aim to get three of their symbols in a column, row, or diagonal line on a 3x3 grid. The game often ends in a tie because the optimal strategy for both players is not to lose. Player A usually starts the game by initiating a sequence of their symbols. At the same time, Player B attempts to block Player A's opportunity while aiming to achieve a series of their symbols as well. This process repeats itself until all the symbols fill up the board.

To limit the chances of the game resulting in a tie, I had to alter the game in a couple of ways. My first thought is that playing the best strategy would be more challenging if the players had to get more of their symbols in a row. That said, I decided to adjust the game environment, being the board. I increased the board's grid to 4x4 so that the only way for a player to win is to complete a row, column or diagonal line of four of their symbols,

I also wanted to change the mindset of each player's strategy. For instance, typically, Tic Tac toe causes each player to have a defensive mentality while hoping to make an offensive move that the opponent will not notice. This becomes a predictable and monotonous pattern, making the game less exciting.

With that said, I wanted to add some randomized elements to this game so that each player does not have as much control over their outcome. My first thought was to have each player choose a block on the board that they could claim to make it even more challenging to complete a row, column or diagonal line. Although this was too similar to the game's original version, I revised this idea by adding randomized cards instead.

Before the game begins, each player will choose one card out of a pack of 16 cards. Each card will indicate a number corresponding to a block on the 4x4 grid, and each block on the grid will be numbered (1,2,3,4, etc.) The block number each player picks from the card will be counted as theirs, meaning that their symbol is technically marked on that block even before the game begins. We will call that block the "Mystery Block." However, each opponent is unaware of what block the other player has, and it will be strategically beneficial if it stays like that as long as possible. If an opponent decides to land their symbol on the other players's mystery block, then they automatically lose the game. If the game results in a tie, the players will start the game over again until one player wins.

After playing a few rounds of the modified game, I noticed that after each player gains knowledge of their Mystery Block, they immediately try to entice the opponent to land on it. For example, Player A will make their first move by placing their symbol on a block on the same row or column as their Mystery Block, followed by Player B. Each player will do that as long as they can until they have to block the opponent from achieving a sequence of their symbol. However, the longer they wait to stop the other opponent, the more likely chance there is that they will land on the opponent's mystery symbol and lose the game entirely.

Another strategy a player could have is to start the game on a completely random block, not paying any mind to the Mystery Block and hoping the other player will assume it is safe to land their symbol there.

All in all, these simple modifications achieved my two goals of limiting the likelihood of ending the game in a tie and changing up the predictable strategy and pattern. Adding the Mystery Block, each player can play more than one strategy than the game's original version and add an element of luck to alter a foreseeable outcome. Adjusting a simple game like Tic Tac Toe seemed like an easy task, but to my surprise, it was challenging to add new elements to the game that would not cause any errors or dysfunctionalities in the design.