

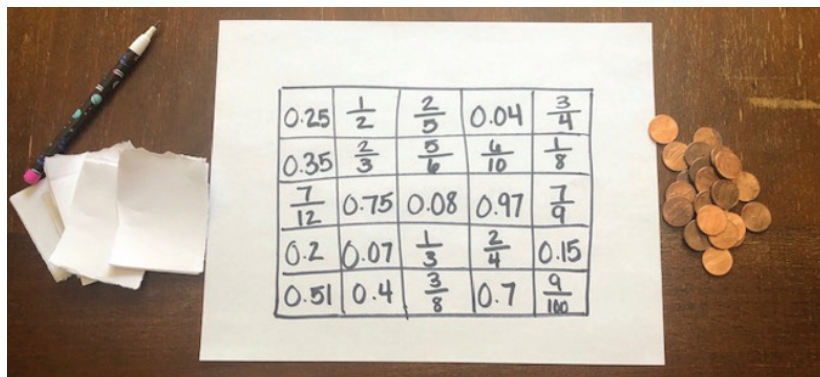
Guess the Number

Object of the Game

Players choose a number from a game board and record their choice privately. Each player asks “yes” and “no” questions to eliminate numbers on the board until they are left with one number: the number chosen by their opponent.

Materials

- 2 Guess the Number Game Boards
Print the game boards or make your own.
- Scratch paper (to record the number chosen in each round)
- 48 game markers (24 for each player)
These can be dried beans, buttons, coins, paper scraps, building blocks, etc.



Skills

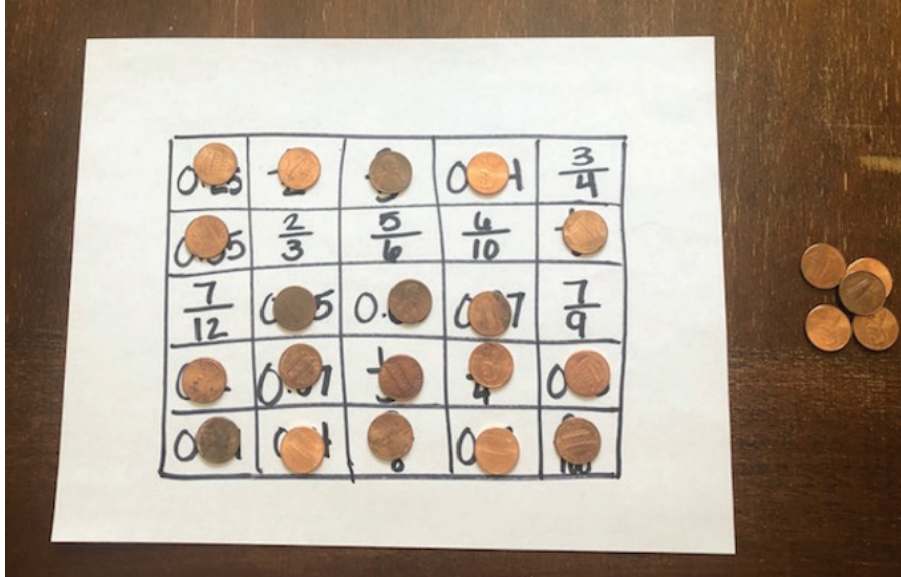
This game helps us practice

- Identifying equivalent fractions
- Understanding decimal places
- Comparing decimals and fractions to benchmarks like $\frac{1}{2}$ and 1

How to Play

1. Each player secretly chooses a number from the Guess the Number Game Board and records it on a piece of scratch paper without showing it to their opponent.
2. Player 1 asks Player 2 a “yes” or “no” question about the number they chose.
 - » For example: “Is the number a decimal?”

3. Player 1 covers numbers on their game board based on the answer. Using the example above:
 - » If the answer is “yes,” then all of the fractions can be covered.
 - » If the answer is “no,” then all of the decimals can be covered.



After several rounds of play, this is what Sofia's board looks like. To eliminate some numbers that Sofia has remaining on her game board, she asks, “Can the fraction be written as twelfths?” If the answer is “No”, she knows the number is either $6/10$ or $7/9$.

4. Player 2 takes a turn asking a “yes” or “no” question, and covering spaces on their own game board based on the answer.
5. Players continue taking turns asking “yes” or “no” questions until a player thinks they know the number chosen by their opponent.
 - » If a player decides to guess the number and they are incorrect, they lose the game.
 - » If a player decides to guess the number and they are correct, they win!

Tips for Families

Before you play:

- Think about what you know about fractions and decimals. What qualities or characteristics can you use to group or eliminate certain numbers?
- Think about how your questions will change as the game progresses.
- Think about your strategy. Is it better to make a guess early to win the game, or would you rather play it safe?

As you play:

- Think about new connections that you've made between the numbers on the game board. How can you use those connections in the future?

Change It Up

Making even small changes to a game can invite new ways of thinking about the math. Try making one of the changes below. How did it change your strategy for winning the game?

- Players choose 1 question that cannot be asked during a game. For example, players aren't allowed to ask if the number is a fraction or a decimal.
- Players can use their turn to guess the number at any point in the game without being penalized.
- Think of your own numbers and use them to make game boards.

Guess the Number Game Board

0.25	$\frac{1}{2}$	$\frac{2}{5}$	0.04	$\frac{3}{4}$
0.35	$\frac{2}{3}$	$\frac{5}{6}$	$\frac{6}{10}$	$\frac{1}{8}$
$\frac{7}{12}$	0.75	0.08	0.97	$\frac{7}{9}$
0.2	0.07	$\frac{1}{3}$	$\frac{2}{4}$	0.15
0.51	0.4	$\frac{3}{8}$	0.7	$\frac{9}{100}$