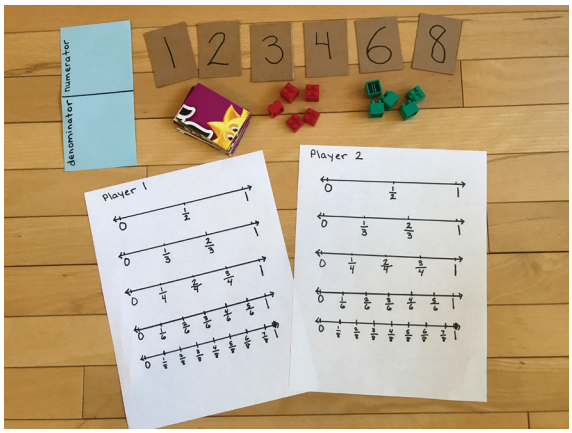
Racing Fractions to Eighths

Object of the Game

Players take turns drawing fraction cards and moving their game marker along a number line from 0 to 1. The first player to move four of their game markers to 1 on their number lines wins!



Materials

- 2 Racing Fractions to Eighths Game Boards
  Print the game board or make your own. Find directions for making your own game board at the end of this document.
- 1 Fraction Frame (optional)
  Print the frame or make your own.
- 1 set of Number Cards (four each of cards 1, 2, 3, 4, 6, and 8)
  Print the cards or make your own. You can use paper, a grocery bag, or a cereal or other food box to make cards.
- 10 game markers (five each of two different colors or objects)
  You can use dried beans, buttons, coins, paper scraps, small toys such as building blocks, etc.).

Skills

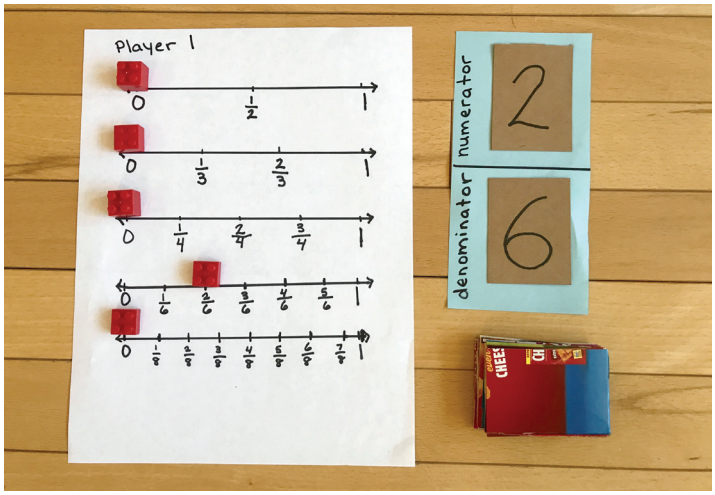
This game helps us practice:

- Recognizing equivalent fractions
- Comparing fraction with different numerators and denominators
- Adding fractions with like denominators

How to Play

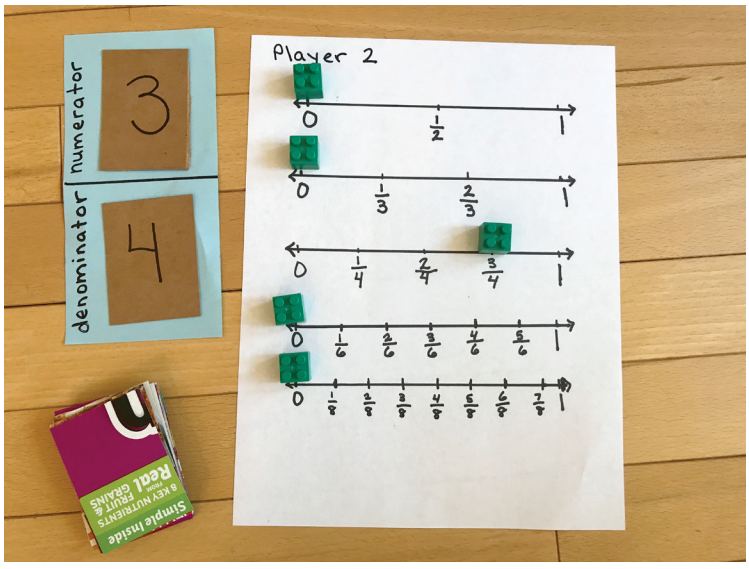
1. Get ready to play:
   - » Mix up the number cards and put them in a stack face-down between the players.
   - » Choose your game markers and have each player put one game marker at the beginning (on 0) of each number line on their own game board.
   - » Decide who will go first.

2. Player 1 takes two cards from the stack and uses them to set up a fraction on the Fraction Frame, with the smaller number on top as the numerator, and the larger number on the bottom as the denominator. Then the player moves one or more game markers the distance shown on the card.



Player 1 *OK, I got a 6 and a 2. I have to use the smaller number on the top of the fraction, so that's two-sixths. I think I'm just going to move the marker on the line for the sixths—one-sixth, two-sixths. Your turn!*

3. Player 2 picks two cards, makes a fraction, and moves one or more game markers the distance of the fraction.

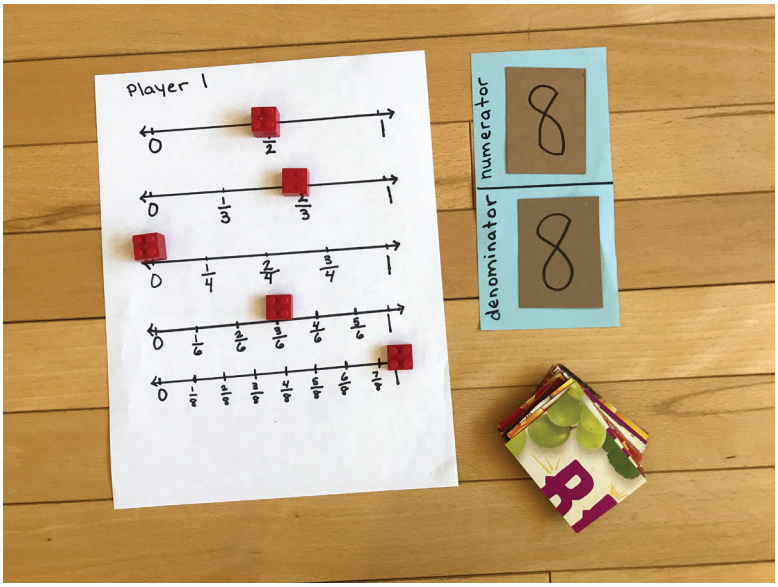


Player 2 *I got a 3 and a 4. I'll make $\frac{3}{4}$ and move my marker to $\frac{3}{4}$. Now, if 1 get a 1 and a 4, I can make $\frac{1}{4}$ and move my marker to 1.*

Player 1 *Or maybe you'll get 2 and 8 and can make $\frac{2}{8}$. It's the same distance as $\frac{1}{4}$.*

4. Players keep taking turns until one player has at least four game markers on 1.

    » If a player draws two cards with the same number, the player can still make a fraction, like two-halves, three-thirds, four-fourths, and so on. All of these fractions are equal to 1!



Player 1 *Yes! I got two 8s. I can make $\frac{8}{8}$ and that is the same as 1. I can move my marker from 0 all the way to 1.*

    » If a player can't find a possible move for the fraction that's made, the player will need to wait for their next turn.

    » Players can move game markers backward. For example, if a player gets the cards 3 and 4 to make the fraction $\frac{3}{4}$, she can move one marker up one-fourth, and another marker back two-fourths. The moves still need to equal the value of the fraction.

5. The first player to move four of their game markets to 1 wins!

6. Have fun!

Tips for Families

Before the game:

- Talk about the fractions on the game board.

    » *What do you notice? How are they alike? How are they different?*

    » *Equivalent fractions are fractions that represent the same quantity. Look at the location of the fractions along the line. Do you see some equivalent fractions?* (Children might notice $\frac{1}{2}$, $\frac{2}{4}$, $\frac{3}{6}$, and $\frac{4}{8}$ all land exactly halfway along their lines or that $\frac{1}{4}$ and $\frac{2}{8}$ are in the same location along their lines.)

During the game:

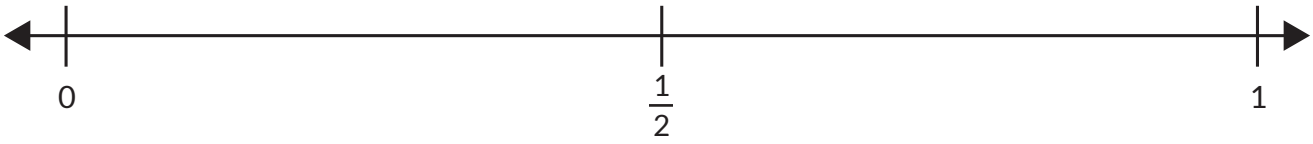
- Ask questions:
  - » *What are some possible moves for the fraction you just made?*
  - » *Which move will help you the most? Why?*
  - » *I see you're stuck right now. Can you move one of your markers backward to help?*
  - » *I see that you made the fraction $\frac{2}{4}$ with your cards, but you only have one more fourth to go on your fourths line. Can you split the move between two different lines? Is there a way you can move the same distance as $\frac{1}{4}$ on the line marked with eighths? Let's check it out.*
  - » *What fraction would you most like to get on your next turn? Why? Is there an equivalent fraction you might get instead? What is it? How would it help?*
- Share your thinking out loud as you decide how to take your moves. Remember, the decisions children make are influenced by their understanding of fractions thus far. Sharing your thinking is a way to help them see new possibilities.

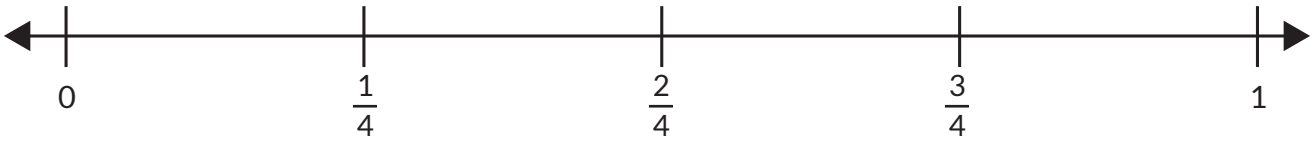
Change It Up

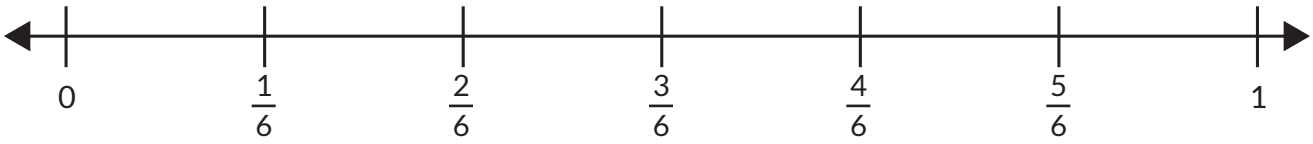
Making even small changes to a game can invite new ways of thinking about the math. Try making one of the changes below.

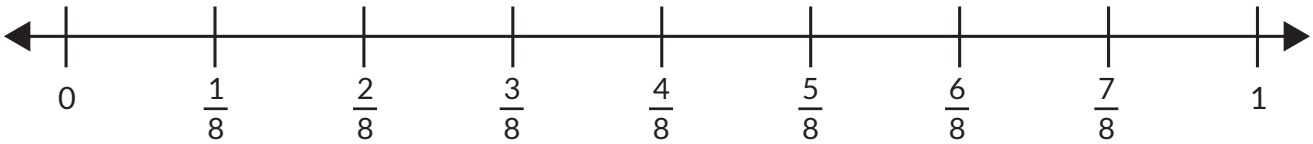
- Play cooperatively. Share a game board and work together to get all of the game markers from 0 to 1.
- Go backwards on the number line. Both players place their markers on 1 at the start of the game and work back to 0. The winner is the first player four markers to 0.
- Use either of the cards as the numerator (top number) or denominator (bottom number). For example, if a player has a 6 and a 3 card, the player can choose to make either $\frac{3}{6}$ or $\frac{6}{3}$.

Racing Fractions to Eighths Game Board

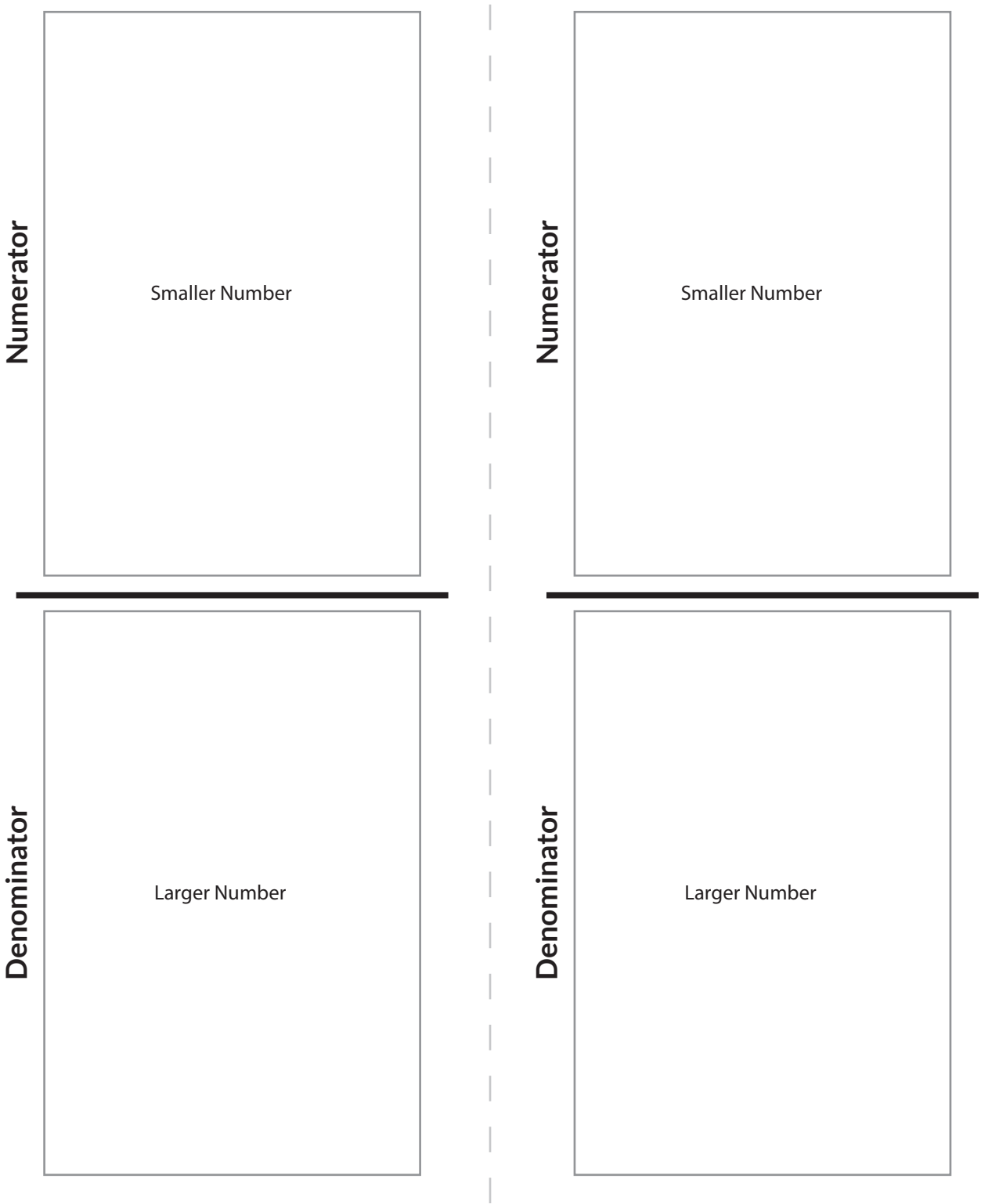








Fraction Frames



1	1	2
1	2	2
1	2	3

3	4	4
3	4	$\frac{6}{}$
3	4	$\frac{6}{}$

$\frac{6}{}$	8
$\frac{6}{}$	8
8	8

Directions for Making Your Own Racing Fractions to Eighths Game Board

Here's how to make your own game board:

- Draw five 6-inch lines on a piece of paper.
- Label the lines with 0 on the far left side and 1 on the far right side.
- On the first line, start at 0 and measure 3 inches. Make a tick mark and label it $\frac{1}{2}$.
- On the second line, start at 0 and measure 2 inches. Make a tick mark and label it $\frac{1}{3}$. Then measure another 2 inches, make a tick mark, and label it $\frac{2}{3}$.
- On the third line, start at 0 and measure $1\frac{1}{2}$ inches. Make a tick mark and label it $\frac{1}{4}$. Then measure another $1\frac{1}{2}$ inches, make a tick mark, and label it $\frac{2}{4}$. Measure another $1\frac{1}{2}$ inches, make a tick mark, and label it $\frac{3}{4}$.
- On the fourth line, start at 0 and measure 1 inch. Make a tick mark and label it $\frac{1}{6}$. Continue measuring 1 inch, making tick marks, and labeling the marks $\frac{2}{6}$, $\frac{3}{6}$, $\frac{4}{6}$, and $\frac{5}{6}$ as you move down the line.
- On the fifth line, start a 0 and measure $\frac{3}{4}$ inch. Make a tick mark and label it $\frac{1}{8}$. Continue measuring $\frac{3}{4}$ inch, making tick marks, and labeling the marks $\frac{2}{8}$, $\frac{3}{8}$, $\frac{4}{8}$, $\frac{5}{8}$, $\frac{6}{8}$, and $\frac{7}{8}$ as you move down the line.
- Make a second game board by placing a piece of paper over the first and tracing the lines.