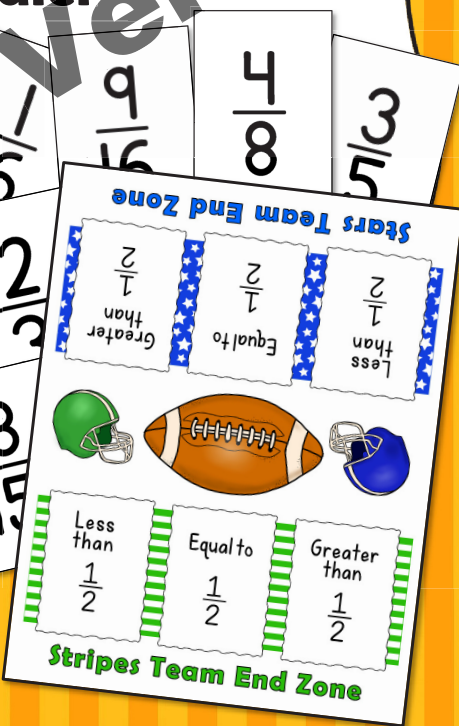


Activities for Comparing Fractions to Benchmarks

Fraction Half Time

Laura Candler

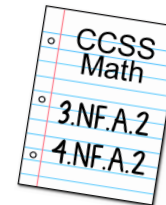


Fraction Half Time

by Laura Candler

Targeted Skills

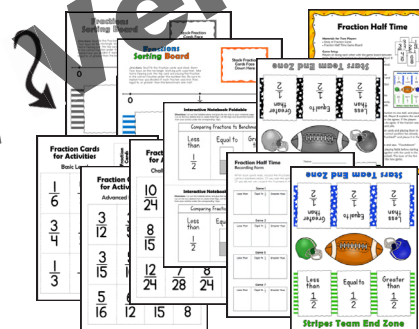
Representing fractions on number lines and comparing fractions to benchmarks



This resource consists of a mini-lesson for comparing fractions to benchmarks, a fraction card sorting activity, and an exciting partner practice game. In the lesson, students explore multiple strategies for comparing fractions to one-half, a skill that's essential for the development of fraction number sense. In the football-themed Fraction Half Time partner game, players compete to fill three open positions on their own playing field with fractions less than, equal to, and greater than one-half. The sorting activity and the game can be used in math centers, in small guided math groups, or during whole group instruction with students working in pairs. This product includes teacher directions, student directions, printable activity materials in black & white and color, leveled fraction cards, and a blank template to create your own cards. Refer to the Table of Contents below for page numbers.

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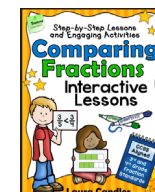


A Note About Answer Keys

Answer keys were not included for a reason; the process of explaining and justifying one's answer is an important component of these interactive math games. Students are far more likely to discuss why a fraction is less than, equal to, or greater than $\frac{1}{2}$ if there's no answer key to check, and these types of discussions are critical to the development of mathematical thinking and reasoning.

Comparing Fractions: Interactive Lessons

Fraction Half Time was created to supplement the lessons in [Comparing Fractions: Interactive Lessons](#). This comprehensive resource includes step-by-step interactive lessons to help students explore the concepts of equivalent fractions, comparing fractions, and ordering fractions. These teacher-directed lessons and activities are designed to stretch your students' thinking as you guide them through the development of important fraction concepts. [Click here to preview this product in my TpT store.](#)



Comparing Fractions to Benchmarks

Mini-lesson and Sorting Activity

The lesson begins with an introduction to fractions on a number line and to the concept of benchmark fractions. After exploring strategies for comparing fractions to one-half, students work with a partner to practice that skill by sorting fraction cards.

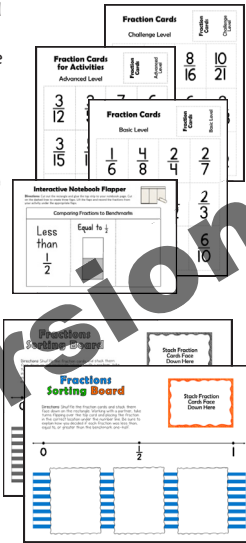
Materials Needed for Every Two Students

- 1 Deck of Fraction Cards
- 1 Fractions Sorting Board
- 2 Dry Erase Boards and Markers
- 2 Interactive Notebook Foldables, optional



Advanced Preparation

Print one copy of the Fractions Sorting Board and a deck of fraction cards for each game. There are three levels of fraction cards, Basic, Advanced, and Challenge, and the same cards will be used later in the Fraction Half Time game. Print the fraction cards that are appropriate for your class and cut them apart. You can combine all three sets to create one large deck of 36 fraction cards, or you can keep the levels separate and have three decks with 12 cards each. If you create separate decks, print each level on a different color paper so they don't get mixed together accidentally. If you plan to use the interactive notebook foldable, print one copy for each student.



Comparing Fractions to Benchmarks Mini-lesson Directions

Before you begin the mini-lesson, pair each student with a partner and ask the two students to sit next to each other. Each student will need his or her own dry erase board and marker; if those materials aren't available, paper and pencil or math journals can be used instead.

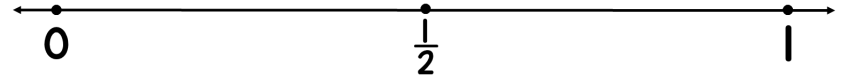
1. Introduce Fractions on a Number Line

Begin by drawing a simple number line like the one below on the board or on an interactive white board, and label the points on each end with 0 and 1. Ask your students to draw and label the same number line on their own dry erase boards. Display a fraction such as $\frac{3}{4}$, and ask your students where it should be placed on the number line. Ask them to mark that location on their own number lines. When everyone is ready, have them turn to their partners, compare their number lines, and discuss the placement of the fraction. Finally, ask a volunteer to come to the board, mark the location of the fraction on the number line, and justify the placement of that fraction. Repeat this activity several times, and observe your students to see if they begin to compare the given fraction to one-half to help them place it on the number line.



2. Introduce the Benchmark Concept

After placing several fractions on the number line, some students will start to justify the placements of those fractions by comparing them to one-half. The first time a student uses this strategy, suggest adding a point on the number line halfway between 0 and 1 to use as a reference. Explain that 0, $\frac{1}{2}$, and 1 are often referred to as "benchmarks" because this term means a point of reference against which other things may be compared.

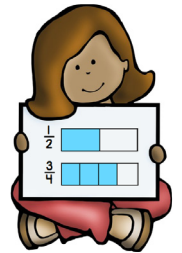


3. Explore and Discuss Strategies for Comparing Fractions to One Half

Tell your students that being able to classify a fraction as less than, equal to, or greater than one-half is an important skill, and mastering this skill will make it easier for them to compare larger fractions having different denominators later. Understanding how to compare fractions to common benchmarks can also help them decide if answers to fraction word problems are reasonable.

Display another fraction card and ask your students to compare it to one-half before trying to place it on the number line. Prompt them to turn to their partners to discuss strategies for deciding whether a fraction is less than, equal to, or greater than one-half. Then call on several students to share their methods with the class, either verbally or by drawing visual representations. Here are three methods your students might use:

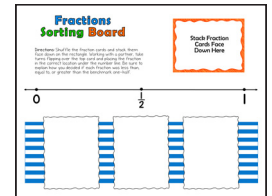
- Draw two fraction bars of the same length. Shade one of them to show $\frac{1}{2}$ and the other to show the fraction being compared to $\frac{1}{2}$.
- Double the numerator of the fraction and compare that number to the denominator. If the two are the same, the fraction is equal to $\frac{1}{2}$. If you double the numerator and the sum is less than the denominator, the fraction is less than $\frac{1}{2}$. If you double the numerator and the sum is more than the denominator, the fraction is greater than $\frac{1}{2}$.
- Find the least common denominator of $\frac{1}{2}$ and the fraction being compared to $\frac{1}{2}$. Convert both fractions to fractions having the same denominator, and compare the numerators.



4. Demonstrate the Fraction Sorting Activity

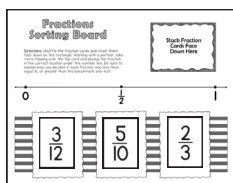
Display a copy of the Fractions Sorting Board and ask two student volunteers to come forward and demonstrate as you explain how to sort the fraction cards. Shuffle the deck of fraction cards and stack the cards face down in the rectangle at the top of the board.

To begin, one player turns over the top fraction card, tells his or her partner whether the fraction is less than, equal to, or greater than one-half, and explains why. If both agree, he or she places the fraction card face up in the correct box. If they don't agree, they discuss their reasons using the strategies they learned in the mini-lesson. When they reach consensus, the fraction card is placed in the correct box under the number line. Normally the students would take turns until all cards are placed, but you can stop the demonstration when everyone knows what to do.



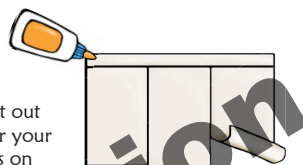
5. Provide Time for Partner Practice

When your students are ready to practice with their partners, give each pair one Fraction Sorting Board and a deck of Fraction Cards. Provide class time for them to complete the activity together. As they work, walk around the room, observing them, listening to their conversations, and checking the placements of their fractions. At the end of the activity, show your students how to record their answers to be checked later, or review and discuss the placements of the fraction cards as a class.




6. Explain How to Record Answers

If you want your students to record their work, explain how you want them to do this. If your students have interactive notebooks, print and distribute the foldable on page 12. Demonstrate how to cut out the foldable and how to glue the top edge onto a journal page. After your students finish sorting the fraction cards, they can record the fractions on their sorting boards under the corresponding flaps of their foldables.



Another way to record the results is to have your students to draw a 3-column chart and label the columns with the headings shown below. After students finish sorting the fraction cards, they can record the fractions on their sorting boards under the corresponding headings on the chart.

Less Than $\frac{1}{2}$	Equal To $\frac{1}{2}$	Greater Than $\frac{1}{2}$

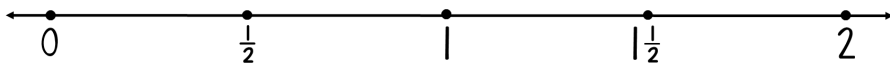
Less than	Equal to	Greater than
$\frac{1}{2}$		$\frac{1}{2}$



Optional Extension Activity: Mixed Numbers and Improper Fractions on a Number Line

If your students are familiar with mixed numbers and improper fractions, challenge them to place fractions equal to or greater than one on a number line. Use the Fractions Cards to Extend Thinking on page 19 for this activity. Display one of the fraction cards, such as $1\frac{3}{8}$, and ask your students to place it on the 0 to 1 number line you showed them the beginning of the mini-lesson. Your students should realize that mixed numbers and improper fractions can't be placed on that number line because they are larger than 1. Extend the number line and label it as shown below. Display the mixed number and improper fraction cards, one at a time, and lead a class discussion about where to place each fraction on the number line.

$\frac{2}{2}$	$\frac{4}{3}$	$\frac{9}{8}$	$\frac{3}{8}$
$\frac{8}{6}$	$\frac{7}{6}$	$\frac{1}{4}$	$\frac{2}{3}$
$\frac{4}{4}$	$\frac{1}{3}$	$\frac{7}{4}$	$\frac{3}{6}$



Fractions Sorting Board

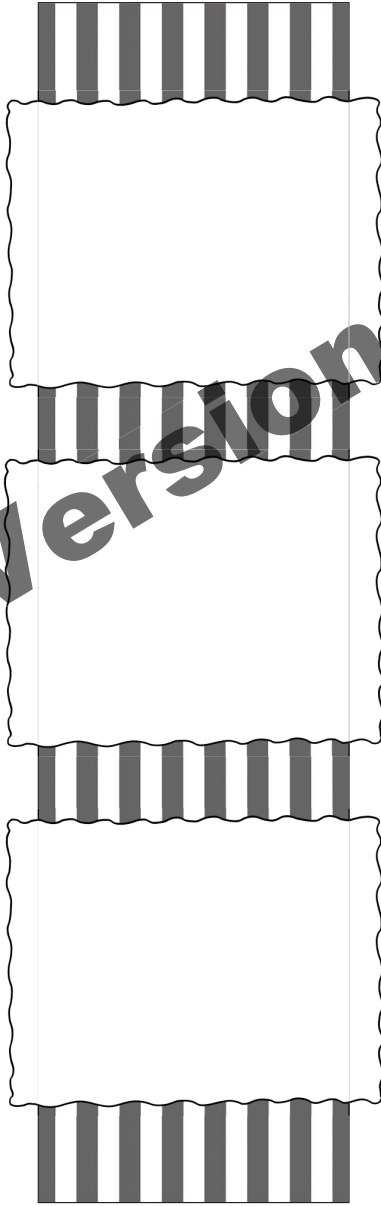


Directions: Shuffle the fraction cards and stack them face down on the rectangle at the top of the page. Working with a partner, take turns flipping over the top card and placing the fraction in the correct location under the number line. Be sure to explain how you decided if each fraction was less than, equal to, or greater than one-half.



Fractions Sorting Board

Directions: Shuffle the fraction cards and stack them face down on the rectangle at the top of the page. Working with a partner, take turns flipping over the top card and placing the fraction in the correct location under the number line. Be sure to explain how you decided if each fraction was less than, equal to, or greater than one-half.



Fraction Cards

Basic Level

Fraction
Cards

Basic Level

$\frac{1}{6}$	$\frac{4}{8}$	$\frac{2}{4}$	$\frac{2}{7}$
$\frac{3}{4}$	$\frac{2}{5}$	$\frac{8}{12}$	$\frac{2}{3}$
$\frac{1}{3}$	$\frac{3}{8}$	$\frac{3}{6}$	$\frac{6}{10}$

Fraction Cards

Advanced Level

Fraction
Cards

Advanced
Level

$$\frac{3}{12}$$

$$\frac{3}{5}$$

$$\frac{7}{14}$$

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

$$\frac{3}{15}$$

$$\frac{5}{10}$$

$$\frac{9}{16}$$

$$\frac{2}{14}$$

$$\frac{5}{16}$$

$$\frac{6}{12}$$

$$\frac{14}{15}$$

$$\frac{5}{8}$$

Fraction Cards

Challenge Level

Fraction
Cards

Challenge
Level

$$\frac{10}{24}$$

$$\frac{12}{18}$$

$$\frac{8}{16}$$

$$\frac{10}{21}$$

$$\frac{8}{15}$$

$$\frac{7}{13}$$

$$\frac{6}{18}$$

$$\frac{3}{33}$$

$$\frac{12}{24}$$

$$\frac{7}{28}$$

$$\frac{8}{24}$$

$$\frac{16}{32}$$

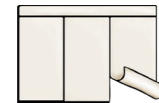
Fraction Cards

Create Your Own

Fraction
Cards

Interactive Notebook Foldable

Directions: Cut out the foldable below and glue the top strip to your notebook page. Cut on the two dashed lines to create three flaps. Lift the flaps and record the fractions from your activity under the corresponding flaps.

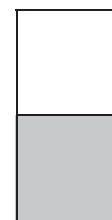


Comparing Fractions to Benchmarks

Less than

$$\frac{1}{2}$$

Equal to

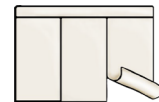


Greater than

$$\frac{1}{2}$$

Interactive Notebook Foldable

Directions: Cut out the foldable below and glue the top strip to your notebook page. Cut on the two dashed lines to create three flaps. Lift the flaps and record the fractions from your activity under the corresponding flaps.



Comparing Fractions to Benchmarks

Less than

$$\frac{1}{2}$$

Equal to



Greater than

$$\frac{1}{2}$$

Fraction Half Time Game

Teacher Directions

Fraction Half Time is a football-themed partner game to practice comparing fractions having different denominators to one-half. Players take turns placing fraction cards on the game board, competing to be the first to fill the three open positions on their end of the playing field.

Materials for Two Players

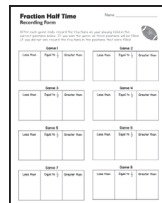
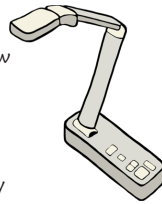
- 1 Deck of Fraction Cards
- 1 Fraction Half Time Student Directions
- 1 Fraction Half Time Game Board
- 2 Fraction Half Time Recording Forms, optional

Advanced Preparation

Print one copy of the Fraction Half Time game board and one copy of the student directions for each game. The fraction cards for this activity are the same as those used in the previous mini-lesson. Print the fraction cards that are appropriate for your class and cut them apart. You can combine all three sets to create one large deck of 36 fraction cards, or you can keep them separate and have three leveled decks with 12 cards each. If you create separate decks, print each level on a different color paper so they don't get mixed together accidentally. If you'd like your students to record their work, print copies of the recording form, too.

How to Introduce Fraction Half Time

1. Ask for a student volunteer to help you demonstrate Fraction Half Time, a game to practice comparing fractions to benchmarks. If possible, display the Fraction Half Time game board under a document camera so that everyone can see it. Distribute copies of the directions to your students so they can follow along as you and your student volunteer demonstrate how to play.
2. Read each part of the directions aloud, starting with the game set up, and ask the student volunteer to help you model it for the class. Emphasize the importance of players explaining how they know whether each fraction is less than, equal to, or greater than one half. Remind them to use the strategies they learned in the mini-lesson.
3. When discussing step 2 of the directions, be sure your students understand what it means to create a "discard pile" next to the game board. Explain that those cards won't be used again during this game, but after the game ends, they will be returned to the deck and shuffled together with the others.
4. If you want your students to record their work at the end of each game, distribute copies of the Fraction Half Time Recording Form and explain how you'd like them to use it.
5. After you finish demonstrating the game, assign partners, distribute the remaining game materials, and explain your classroom management procedures regarding how and where to play.



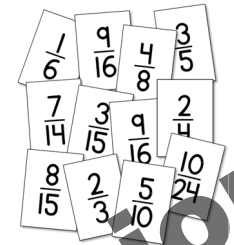
Fraction Half Time

Materials for Two Players

- Deck of Fraction Cards
- Fraction Half Time Game Board

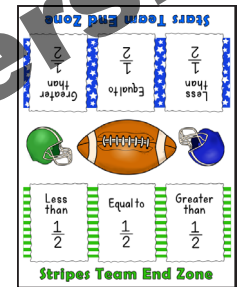
Game Setup

Players sit facing each other with the game board between them. Player A sits behind the Stars Team End Zone, and Player B sits behind the Stripes Team End Zone. Player A shuffles the fraction cards and stacks them face down on the football.



How to Play

1. Player A kicks off the game by turning over the top card. He or she compares the fraction to one-half, places the card face up in the correct box on the Stars playing field, and explains why the fraction is less than, equal to, or greater than one-half.
2. Player B gives a thumbs up if he or she agrees. If Player B does not agree, the two players discuss the fraction's placement until they agree on where it should be placed. If the card was not placed correctly, Player A removes it and uses it to start a discard pile next to the game board.
3. Player B turns over the next card, compares the fraction to one-half, and places it in the correct position on the Stripes playing field. After Player B explains the card's placement, Player A gives a thumbs up if he or she agrees. If the players don't agree, they discuss the placement until they do agree. If the fraction was not placed correctly, Player B moves it to the discard pile.
4. The players continue to take turns drawing fraction cards and placing them in the correct positions on their playing fields. If the correct position has already been filled, the player who drew the card says, "Fumbled!" and places it in the discard pile. That player loses his or her turn.
5. The first player to correctly fill all 3 positions wins and says, "Touchdown!"
6. Both players remove all fraction cards from their playing fields before starting another round. The winner shuffles those cards together with the cards in the discard pile, and stacks them face down on the football. The loser of the first round turns over the top fraction card to kick off the new game.



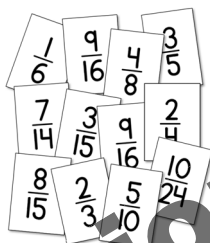
Fraction Half Time

Materials for Two Players

- Deck of Fraction Cards
- Fraction Half Time Game Board

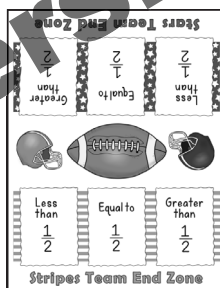
Game Setup

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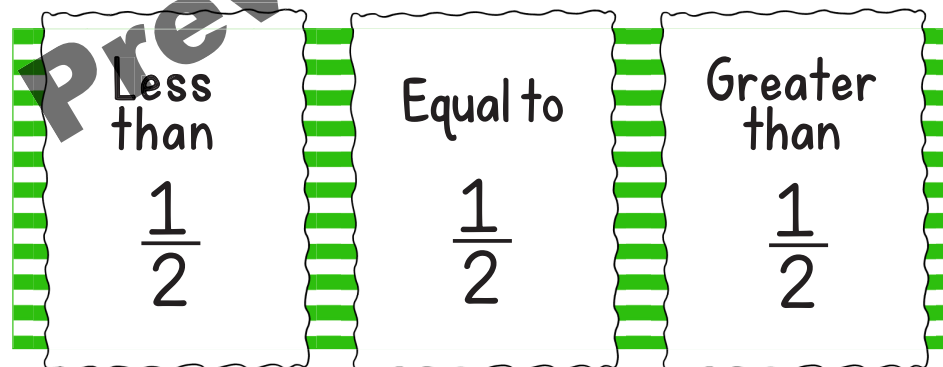
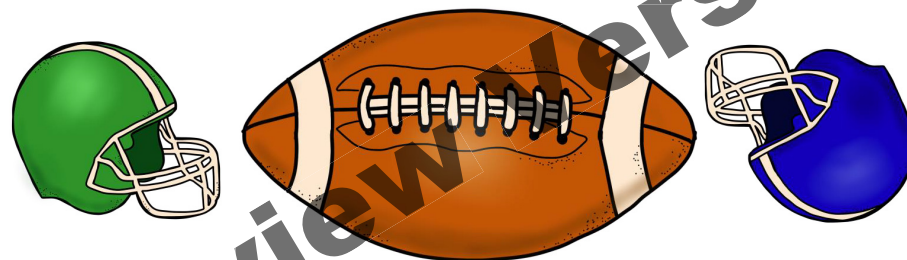
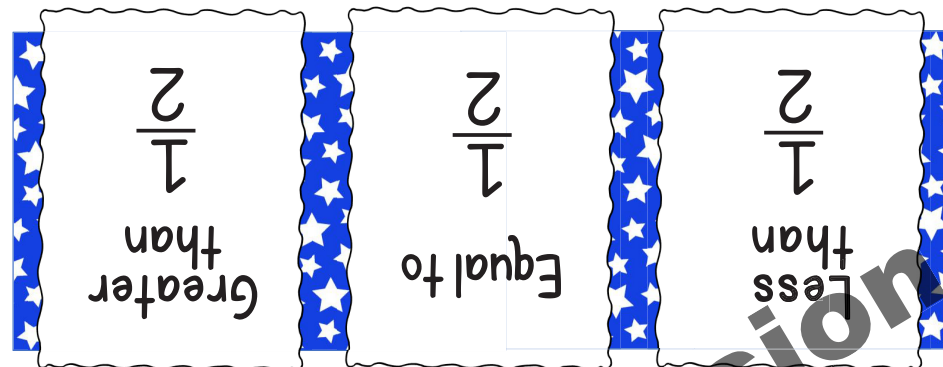


How to Play

1. Player A kicks off the game by turning over the top card. He or she compares the fraction to one-half, places the card face up in the correct box on the Stars playing field, and explains why the fraction is less than, equal to, or greater than one-half.
2. Player B gives a thumbs up if he or she agrees. If Player B does not agree, the two players discuss the fraction's placement until they agree on where it should be placed. If the card was not placed correctly, Player A removes it and uses it to start a discard pile next to the game board.
3. Player B turns over the next card, compares the fraction to one-half, and places it in the correct position on the Stripes playing field. After Player B explains the card's placement, Player A gives a thumbs up if he or she agrees. If the players don't agree, they discuss the placement until they do agree. If the fraction was not placed correctly, Player B moves it to the discard pile.
4. The players continue to take turns drawing fraction cards and placing them in the correct positions on their playing fields. If the correct position has already been filled, the player who drew the card says, "Fumbled!" and places it in the discard pile. That player loses his or her turn.
5. The first player to correctly fill all 3 positions wins and says, "Touchdown!"
6. Both players remove all fraction cards from their playing fields before starting another round. The winner shuffles those cards together with the cards in the discard pile, and stacks them face down on the football. The loser of the first round turns over the top fraction card to kick off the new game.



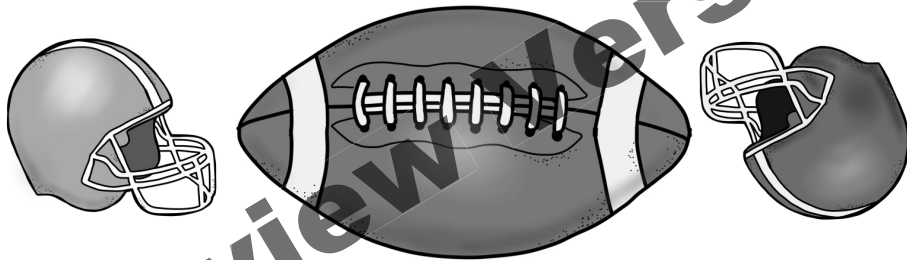
Stars Team End Zone



Stripes Team End Zone

Stars Team End Zone

$\frac{2}{1}$ Greater than	$\frac{2}{1}$ Equal to	$\frac{2}{1}$ Less than
-------------------------------	---------------------------	----------------------------



Less than $\frac{1}{2}$	Equal to $\frac{1}{2}$	Greater than $\frac{1}{2}$
----------------------------	---------------------------	-------------------------------

Stripes Team End Zone

Fraction Half Time Recording Form

Name _____

After each game ends, record the fractions on your playing field in the correct positions below. If you won the game, all three positions will be filled. If you did not win, record the fractions in the positions that were filled.



Game 1			Game 2		
Less than	Equal to $\frac{1}{2}$	Greater than	Less than	Equal to $\frac{1}{2}$	Greater than
Game 3			Game 4		
Less than	Equal to $\frac{1}{2}$	Greater than	Less than	Equal to $\frac{1}{2}$	Greater than
Game 5			Game 6		
Less than	Equal to $\frac{1}{2}$	Greater than	Less than	Equal to $\frac{1}{2}$	Greater than
Game 7			Game 8		
Less than	Equal to $\frac{1}{2}$	Greater than	Less than	Equal to $\frac{1}{2}$	Greater than

Fraction Cards to Extend Thinking

Mixed Numbers and Improper Fractions

Fraction Cards

Mixed Numbers & Improper Fractions

$\frac{2}{2}$	$\frac{4}{3}$	$\frac{9}{8}$	$1\frac{3}{8}$
$\frac{8}{6}$	$\frac{7}{6}$	$1\frac{1}{4}$	$1\frac{2}{3}$
$\frac{4}{4}$	$1\frac{1}{3}$	$\frac{7}{4}$	$1\frac{3}{6}$

Acknowledgements

I want to thank the teachers who offered suggestions, tested the activities with their students, or proofread this resource. They gave me great feedback to help me improve this resource! Special thanks to Ann, Bullard, Marci Lynn Jennings, Dawn Schechtman, Kathy Hardman, and Aleka Munroe. I truly appreciate your help!



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