



3 Cooperative Learning Games

Comparing Fractions Games

Laura Candler



Fraction Construction
Your Task: Build the Larger Fraction

Player 1

Player 2

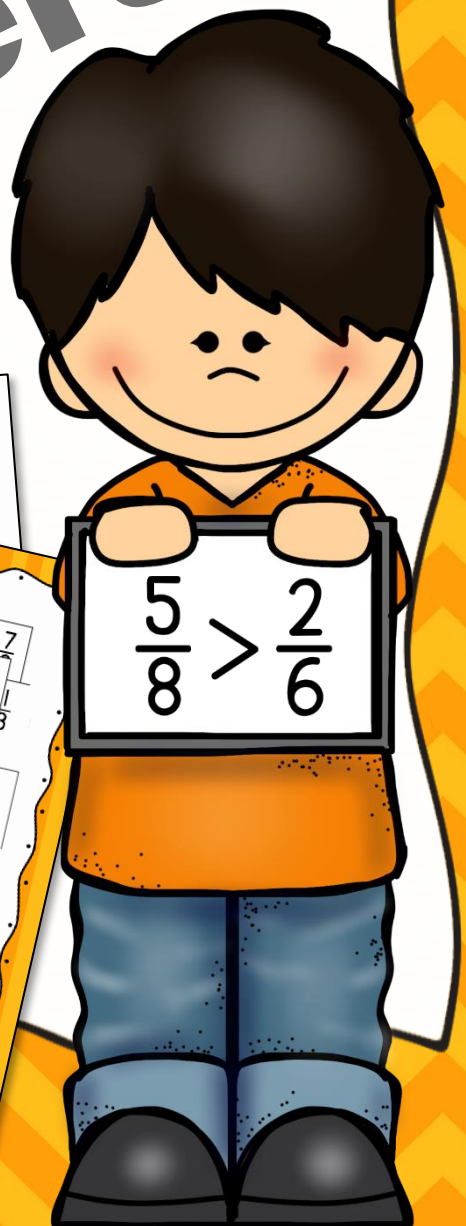
2 < 5

8 < 10

Flip & Compare Fractions

Rules for 2 Players
1. Shuffle Fraction Cards
2. Erase Boards and Markers

Play:
1. Stand side by side. One player shuffles the fraction cards and deals them out, face down, into two piles. Each player picks up one stack without looking at them.
2. Both players say "Flip" at the same time and turn their top fraction card, and place them next to each other.
3. Both players record the fractions on their own dry erase boards.
4. Both players explain their strategies and discuss how they compare the fractions to compare them. When finished, they write the larger fraction on their boards.
5. If the player did not compare them correctly, they turn their boards face down, and the larger fraction keeps both cards if he or she is correct. If the player did not compare them correctly, the cards are set aside for that round of the game.

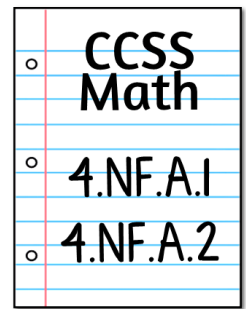


Comparing Fractions Games

by Laura Candler

Targeted Skills

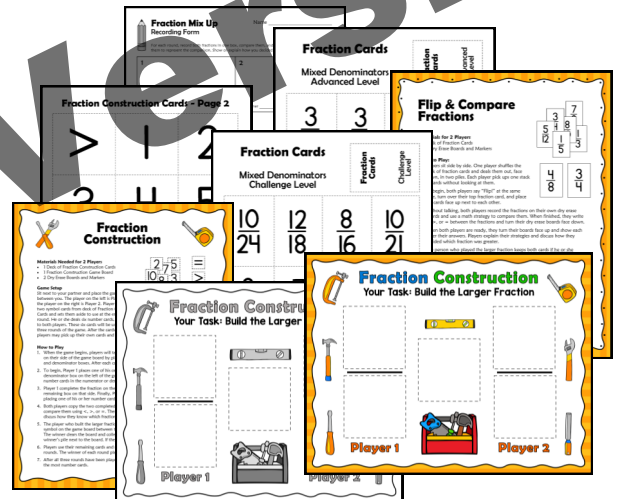
Compare fractions with different denominators; use multiple strategies to justify comparisons



Comparing Fractions Games includes three cooperative learning games to practice comparing fractions with different denominators. The first game, Musical Fraction Mix Up, is a whole group activity, and the other two are partner games that are perfect for math centers, small guided math groups, or whole group lessons with students seated next to a partner. Each game includes teacher directions, student directions, printable game materials in black & white and color, fraction or number cards, and blank templates to create your own cards. The components of each game and their page numbers are listed below.

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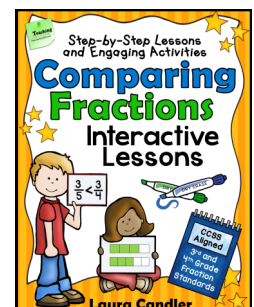
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How to Use These Comparing Fractions Games

All three games were designed for students to practice comparing fractions and to deepen their understanding of fraction comparisons, but they don't teach specific strategies. Therefore, the games are most effective when used to supplement your own lessons on how to use multiple strategies for comparing fractions with different denominators. If it's been more than a few days since you taught your students how to compare fractions, take a few minutes before playing any of the games to review different methods of comparing fractions. These strategies may include including drawing fraction bars, comparing fractions to $\frac{1}{2}$, and finding common denominators. Also, review the correct use of the symbols $<$, $>$, and $=$. Finally, check for understanding by giving your students several fraction comparison problems to solve on their dry erase boards, and observe them to determine if they are using appropriate strategies.

If you're looking for step-by-step lessons to teach your students multiple strategies for comparing and ordering fractions, check out my comprehensive ebook, [Comparing Fractions: Interactive Lessons](#). The teacher-directed lessons and activities in this resource 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.](#)



Musical Fraction Mix Up

Teacher Directions

Musical Fraction Mix-up is an activity for the whole class. Students are given fraction cards, and when the music starts, they walk around the room with their cards until the music stops. Then they pair up with a partner, compare and discuss their fractions, and begin moving again when the music starts.

Materials for the Class

- 1 Fraction Card per student
- 1 Comparing Fractions Recording Page per student
- Musical selection and music player

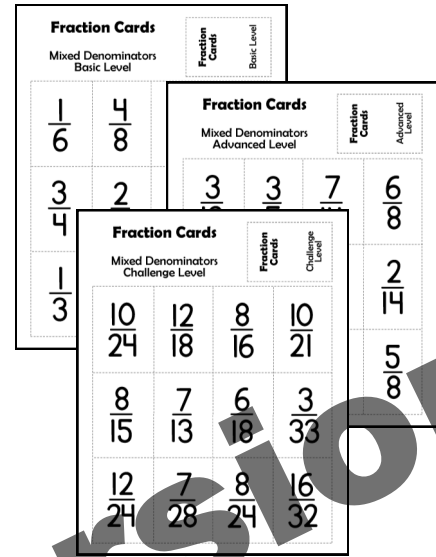
Advanced Preparation

You'll need one unique fraction card and one copy of the recording form for each student. Prepare a deck of mixed-denominator fraction cards by printing one copy of pages 7-9, cutting apart the cards, and shuffling them together. Each page has 12 unique cards, which will result in enough fractions for 36 students. If you have 24 or fewer students, you only need to print two of the pages. The cards are labeled Basic, Advanced, or Challenge to help you choose which pages to print, but the levels aren't mentioned during the activity.

You'll also need to choose a piece of music that's appropriate for your students. Choose the selection carefully because the type of music you play will set the tone for the activity. Quiet instrumental music tends to have a calming effect, while lively upbeat music will increase the energy in the room. Holiday-themed music can be fun, too, such as spooky music in October or Christmas music in December.

Fraction Mix Up Directions

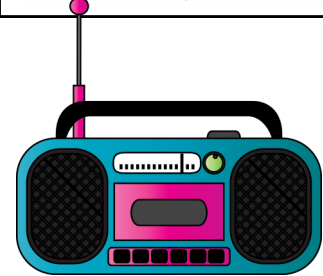
1. Give each student one unique fraction card and a copy of the Comparing Fractions Recording Form. If you have an odd number of students, keep a fraction card for yourself, too, because you'll need to be one student's partner.
2. Start the music and say "Fraction Mix Up!" Ask students to take their fraction cards, a pencil, and their recording forms with them and move quietly around the room until you stop the music.
3. After about 30 seconds, stop the music and say, "Pair Up!" Ask everyone to find a partner and stand shoulder to shoulder, facing the front of the room.
4. As students begin pairing up, ask students who haven't yet found a partner to move to a designated area of the classroom. Help those find partners, and if you have an odd number of students, invite the remaining student to be your partner.




Comparing Fractions Recording Form Name _____

For each round, record both fractions in one box, compare them, and write <, >, or = between them to represent the comparison. Show or explain how you decided which fraction was greater.

1	2
Partner _____	Partner _____
3	4
Partner _____	Partner _____
5	6
Partner _____	Partner _____
7	8
Partner _____	Partner _____



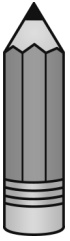
5. When everyone has a partner, ask them to write each other's names on the Partner line in the first box of the recording form. Then both of them should write the fractions that are on their fraction cards in same box, side by side.
6. When everyone is ready, ask your students to sit or stand back to back with their partners so they can't see each other's papers. Without talking, students use a math strategy of their choice to compare the fractions and write $<$, $>$, or $=$ between the fractions to show the comparison.
7. Walk around and observe students as they are working. When everyone is ready, ask them to turn and face their partners, then compare their answers and discuss their strategies.
8. Remind your students to justify their answers by writing a short explanation or drawing a visual representation on their recording forms. If you'd like to show your students the example on the right, you can use the full-sized version on page 6.
9. If some students realize they didn't get the correct answer on their own and want to change it, ask them to turn their papers over and rework the problem on the back. You might also ask them to explain their mistake. By doing this, you'll be able to see who answered each problem correctly on their own. You'll also be able to determine if those who made errors understood their mistakes.
10. Before you start the music again, ask your students to trade fraction cards with their partners so that they will start each round with a new fraction.
11. Start the music and say, "Fraction Mix Up!" Ask everyone to keep moving quietly around the room until you stop the music. Sometimes students will go directly to a friend and stand next to the person before you ask them to stop and pair up, and you may have to prompt them to keep moving until the music stops.
12. When you stop the music the second time, tell your students that they must find a new partner for every round of the game. If you see the same students being left out over and over, tell them that one of the rules of the game is that the same students can't be left without a partner more than once. If you notice this continuing to happen, even after you've explained the rule, stop the game and give your students a paper and pencil assignment for the rest of class. They will get the point, and this issue will probably resolve itself the next time you play Musical Fraction Mix Up.
13. Repeat the activity as time allows. If you don't have time to complete all eight boxes on the page, assign a few fraction comparison problems for students to write in the empty boxes and solve on their own.

 **Comparing Fractions**
Recording Form Example

For each round, record both fractions in one box, compare them to represent the comparison. Show or explain how.

1	2
$\frac{2}{3} > \frac{1}{4}$	
<i>Two thirds is more than half, and one fourth is less than half, so two thirds is the larger fraction.</i>	
Partner <u>Jessica Sterling</u> Part	
3	4



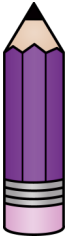


Comparing Fractions Recording Form

Name _____

For each round, record both fractions in one box, compare them, and write $<$, $>$, or $=$ between them to represent the comparison. Show or explain how you decided which fraction was greater.

<p>1</p> <p>Partner _____</p>	<p>2</p> <p>Partner _____</p>
<p>3</p> <p>Partner _____</p>	<p>4</p> <p>Partner _____</p>
<p>5</p> <p>Partner _____</p>	<p>6</p> <p>Partner _____</p>
<p>7</p> <p>Partner _____</p>	<p>8</p> <p>Partner _____</p>



Comparing Fractions

Recording Form Example

Name _____

For each round, record both fractions in one box, compare them, and write $<$, $>$, or $=$ between them to represent the comparison. Show or explain how you decided which fraction was greater.

<p>1</p> <p>$\frac{2}{3} > \frac{1}{4}$</p> <p><i>Two thirds is more than half, and one fourth is less than half, so two thirds is the larger fraction.</i></p> <p>Partner <u>Jessica Sterling</u></p>	<p>2</p> <p>Partner _____</p>
<p>3</p> <p>Partner _____</p>	<p>4</p> <p>Partner _____</p>
<p>5</p> <p>Partner _____</p>	<p>6</p> <p>Partner _____</p>
<p>7</p> <p>Partner _____</p>	<p>8</p> <p>Partner _____</p>

Fraction Cards

Mixed Denominators
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

Mixed Denominators
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

Mixed Denominators
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

Same Denominator
(Twelfths)

Fraction
Cards

Same
Denominator
(Twelfths)

$$\frac{1}{12}$$

$$\frac{2}{12}$$

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

$$\frac{4}{12}$$

$$\frac{5}{12}$$

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

$$\frac{7}{12}$$

$$\frac{8}{12}$$

$$\frac{9}{12}$$

$$\frac{10}{12}$$

$$\frac{11}{12}$$

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

Fraction Cards

Create Your Own

**Fraction
Cards**

Preview Version

Flip & Compare Fractions

Teacher Directions

Flip & Compare Fractions is a partner game played with a deck of fraction cards. Each student flips a fraction card face up and places it next to his or her partner's card. Both players record the fractions and compare them using $<$, $>$, or $=$. The player with the larger fraction wins both cards.

Materials for Every Two Students

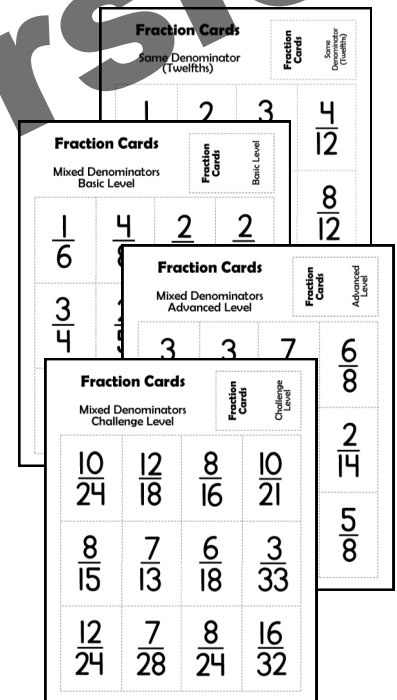
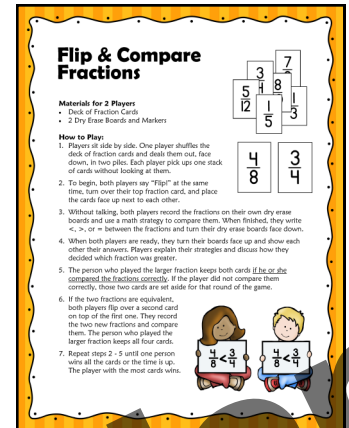
- 1 Deck of Fraction Cards
- 1 Flip & Compare Fractions Student Directions
- 2 Dry Erase Boards and 2 Markers

Advanced Preparation

Prepare one deck of fraction cards and print one copy of the student directions for every two students or each math center game. To create a deck of 36 mixed-denominator fractions, print one copy of the three sets of fraction cards on pages 7-9, cut apart the cards, and shuffle them together. If you prefer to create a deck of fractions with the same denominator, use the fraction cards on page 10 which all have a denominator of 12. Be aware that this deck will only have 12 cards instead of 36 and will result in a much shorter game.

How to Introduce Flip & Compare Fractions

1. When you're ready to introduce Flip & Compare Fractions, display the student directions so that everyone can see them. Ask two volunteers to come forward and play the game in front of the class as you read the steps aloud.
2. While the students are demonstrating step 3, coach them to record the two fractions in each round on their dry erase boards and use a math strategy to compare the fractions. In step 4, have them show each other their answers and discuss how they know which fraction is larger. In step 5, point out that the winner may only keep the two cards if he or she compared the fractions correctly.
3. After a few minutes, some of your students will probably notice that Flip & Compare Fractions is similar to the card game, "War." Making this connection may help them understand how to play Flip & Compare Fractions, but remind your students to follow the directions carefully because the two games aren't exactly the same.
4. You can end the demonstration when everyone understands how to play. Then assign partners, distribute the game materials, and explain your classroom management procedures regarding where and how to play. If you don't have enough decks of fraction cards for everyone to play at the same time, place the activity in a math center or make it available as a review game for students who have completed other assignments.



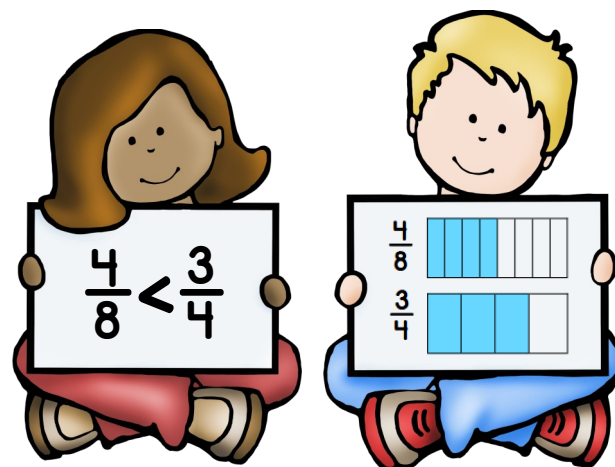
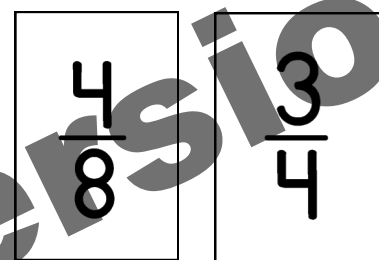
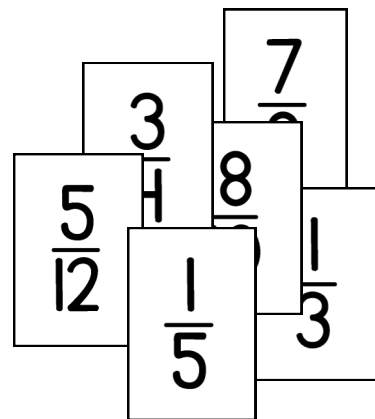
Flip & Compare Fractions

Materials for 2 Players

- Deck of Fraction Cards
- 2 Dry Erase Boards and Markers

How to Play:

1. Players sit side by side. One player shuffles the deck of fraction cards and deals them out, face down, in two piles. Each player pick ups one stack of cards without looking at them.
2. To begin, both players say "Flip!" at the same time, turn over their top fraction card, and place the cards face up next to each other.
3. Without talking, both players record the fractions on their own dry erase boards and use a math strategy to compare them. When finished, they write $<$, $>$, or $=$ between the fractions and turn their dry erase boards face down.
4. When both players are ready, they turn their boards face up and show each other their answers. Players explain their strategies and discuss how they decided which fraction was greater.
5. The person who played the larger fraction keeps both cards if he or she compared the fractions correctly. If the player did not compare them correctly, those two cards are set aside for that round of the game.
6. If the two fractions are equivalent, both players flip over a second card on top of the first one. They record the two new fractions and compare them. The person who played the larger fraction keeps all four cards.
7. Repeat steps 2 - 5 until one person wins all the cards or the time is up. The player with the most cards wins.



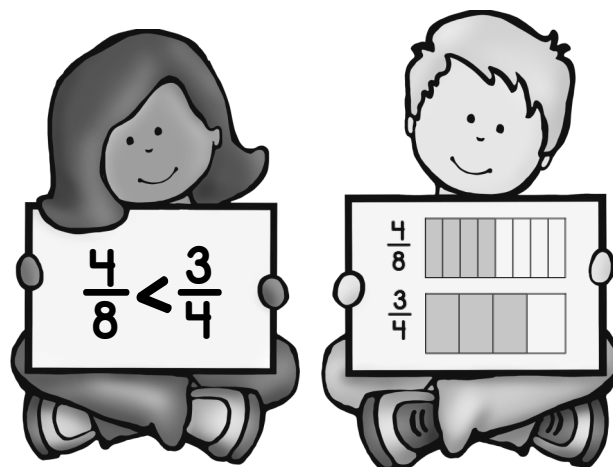
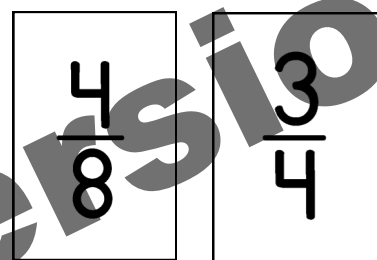
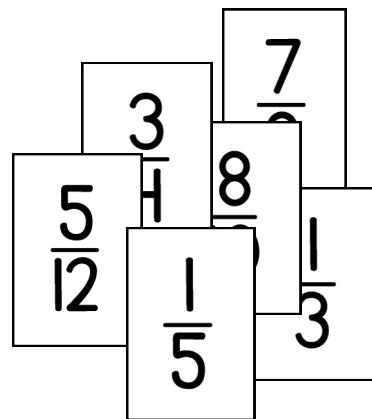
Flip & Compare Fractions

Materials for 2 Players

- Deck of Fraction Cards
- 2 Dry Erase Boards and Markers

How to Play:

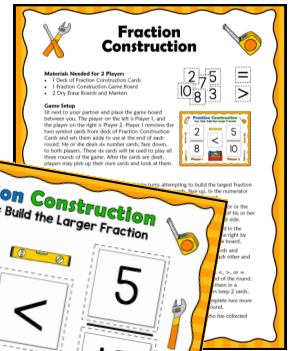
1. Players sit side by side. One player shuffles the deck of fraction cards and deals them out, face down, in two piles. Each player pick ups one stack of cards without looking at them.
2. To begin, both players say "Flip!" at the same time, turn over their top fraction card, and place the cards face up next to each other.
3. Without talking, both players record the fractions on their own dry erase boards and use a math strategy to compare them. When finished, they write $<$, $>$, or $=$ between the fractions and turn their dry erase boards face down.
4. When both players are ready, they turn their boards face up and show each other their answers. Players explain their strategies and discuss how they decided which fraction was greater.
5. The person who played the larger fraction keeps both cards if he or she compared the fractions correctly. If the player did not compare them correctly, those two cards are set aside for that round of the game.
6. If the two fractions are equivalent, both players flip over a second card on top of the first one. They record the two new fractions and compare them. The person who played the larger fraction keeps all four cards.
7. Repeat steps 2 - 5 until one person wins all the cards or the time is up. The player with the most cards wins.



Fraction Construction

Teacher Directions

Fraction Construction is a strategy game to practice comparing fractions with different denominators. Two players take turns placing number cards on the game board as they compete to build the larger fraction.

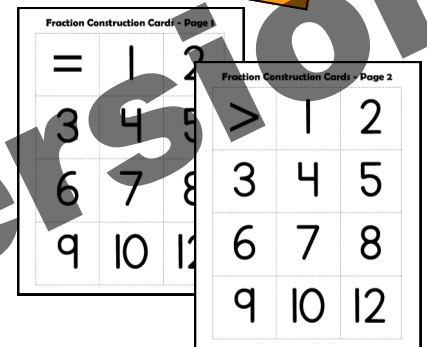


Materials for Two Players

- 1 Deck of Fraction Construction Cards
- 1 Fraction Construction Game Board
- 2 Dry Erase Boards and Markers
- 1 Comparing Fractions Recording Form, optional

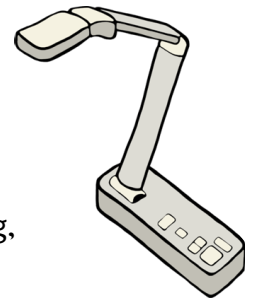
Advanced Preparation

Print one copy of the game board, one copy of the student directions, and one copy each of the Fraction Construction Cards on pages 20 and 21. For a more challenging game, print the bonus game cards on page 22 as well. Cut the cards apart and stack them together to create one deck. If you'd like your students to record their work, print a copy of the Comparing Fractions Recording Form for each student.



How to Introduce Fraction Construction

1. Ask a student volunteer to help you demonstrate the game. If possible, display the game board under a document camera so that everyone can see how it looks as the game progresses. As you read each part the directions aloud, ask your student volunteer to help you model it for the class.
2. Read the Game Set Up, and demonstrate how to deal six cards, face down, to each player. Explain that each player will use two of the cards in each round. At the beginning of the second round, they will each have four cards remaining, and when starting the third and final round, they will have two cards to play.
3. While demonstrating steps 2 and 3, point out that both players take turns placing their number cards, one at a time, in either the numerator or the denominator box on their side of the game board. After each card is placed, it can't be moved.
4. Demonstrate what happens when a player places a larger number in the numerator than in the denominator. An improper fraction is created, which isn't a problem as long as your students know how to compare improper fractions. If they don't, you can add a rule that players must always place the larger number in the denominator.
5. In step 4, emphasize the importance of using math strategies instead of guessing when comparing fractions, and remind students to discuss their strategies at the end of each round.
6. If you want your students to record the fractions they create while playing the game, show them the recording form and explain how to use it.
7. After you finish demonstrating the game, assign partners, distribute the game materials, and explain your classroom management procedures regarding how and where to play.



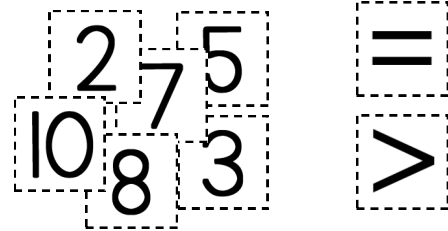


Fraction Construction



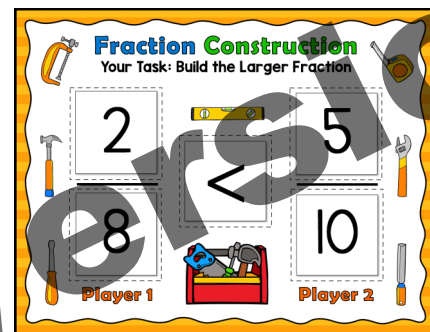
Materials Needed for 2 Players

- 1 Deck of Fraction Construction Cards
- 1 Fraction Construction Game Board
- 2 Dry Erase Boards and Markers



Game Setup

Sit next to your partner and place the game board between you. The player on the left is Player 1, and the player on the right is Player 2. Player 1 removes the two symbol cards from deck of Fraction Construction Cards and sets them aside to use at the end of each round. He or she deals six number cards, face down, to both players. These six cards will be used to play all three rounds of the game. After the cards are dealt, players may pick up their own cards and look at them.

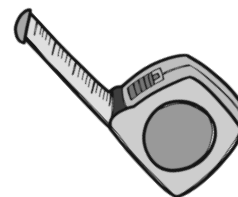


How to Play

1. When the game begins, players will take turns attempting to build the largest fraction on their side of the game board by placing number cards, face up, in the numerator and denominator boxes. After each card is placed, it cannot be moved.
2. To begin, Player 1 places one of his or her six number cards in the numerator or the denominator box on the left of the game board. Player 2 then places one of his or her number cards in the numerator or denominator of the fraction on the right side.
3. Player 1 completes the fraction on the left by placing another number card in the remaining box on that side. Finally, Player 2 completes the fraction on the right by placing one of his or her number cards in the final open box on the game board.
4. Both players copy the two completed fractions onto their dry erase boards, use a math strategy to compare them, and write $<$, $>$, or $=$ between the fractions. Then players show their answers to each other and discuss their strategies.
5. The player who built the larger fraction wins, and he or she places the $<$, $>$, or $=$ symbol on the game board between the two fractions to signal the end of the round. The winner clears the board and collects the 4 number cards, placing them in a winner's pile next to the board. If the fractions are equal, both players keep 2 cards.
6. Players use their remaining cards and repeat steps 2 through 5 to complete two more rounds. The winner of each round places the first card of the next round.
7. After all three rounds have been played, the winner is the player who has collected the most number cards.

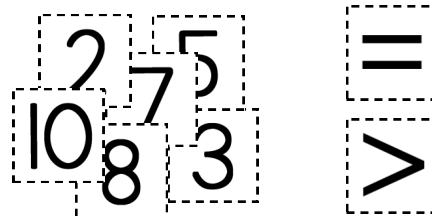


Fraction Construction



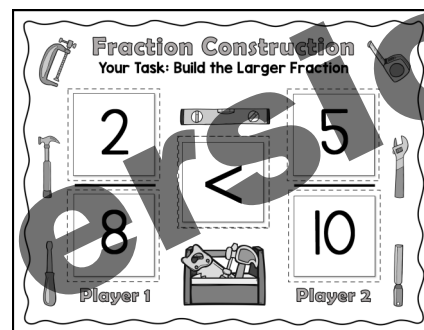
Materials Needed for 2 Players

- 1 Deck of Fraction Construction Cards
- 1 Fraction Construction Game Board
- 2 Dry Erase Boards and Markers



Game Setup

Sit next to your partner and place the game board between you. The player on the left is Player 1, and the player on the right is Player 2. Player 1 removes the two symbol cards from deck of Fraction Construction Cards and sets them aside to use at the end of each round. He or she deals six number cards, face down, to both players. These six cards will be used to play all three rounds of the game. After the cards are dealt, players may pick up their own cards and look at them.

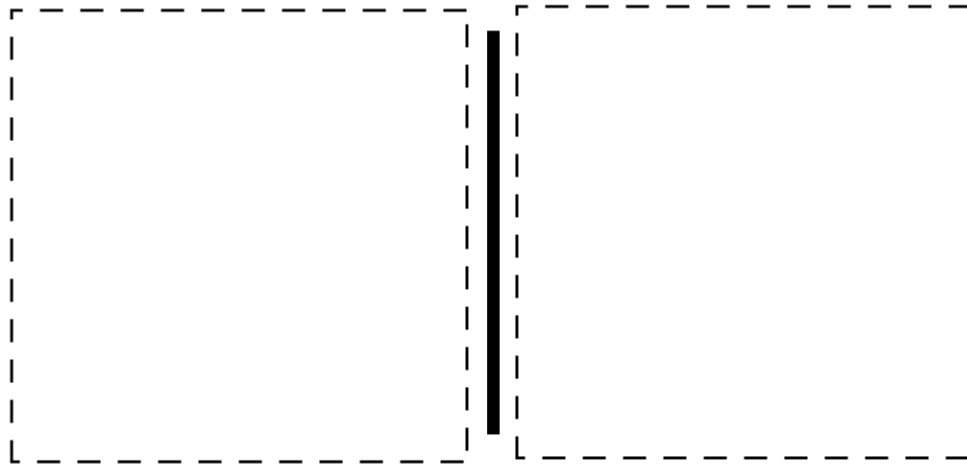
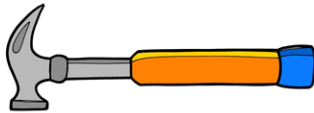


How to Play

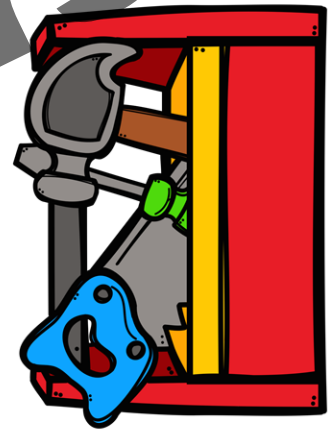
1. When the game begins, players will take turns attempting to build the largest fraction on their side of the game board by placing number cards, face up, in the numerator and denominator boxes. After each card is placed, it cannot be moved.
2. To begin, Player 1 places one of his or her six number cards in the numerator or the denominator box on the left of the game board. Player 2 then places one of his or her number cards in the numerator or denominator of the fraction on the right side.
3. Player 1 completes the fraction on the left by placing another number card in the remaining box on that side. Finally, Player 2 completes the fraction on the right by placing one of his or her number cards in the final open box on the game board.
4. Both players copy the two completed fractions onto their dry erase boards, use a math strategy to compare them, and write $<$, $>$, or $=$ between the fractions. Then players show their answers to each other and discuss their strategies.
5. The player who built the larger fraction wins, and he or she places the $<$, $>$, or $=$ symbol on the game board between the two fractions to signal the end of the round. The winner clears the board and collects the 4 number cards, placing them in a winner's pile next to the board. If the fractions are equal, both players keep 2 cards.
6. Players use their remaining cards and repeat steps 2 through 5 to complete two more rounds. The winner of each round places the first card of the next round.
7. After all three rounds have been played, the winner is the player who has collected the most number cards.

Fraction Construction

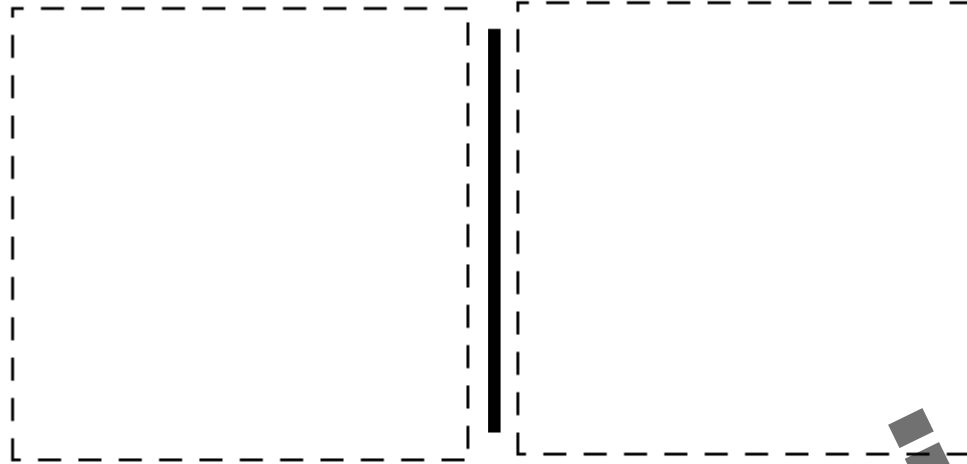
Your Task: Build the Larger Fraction



Player 1



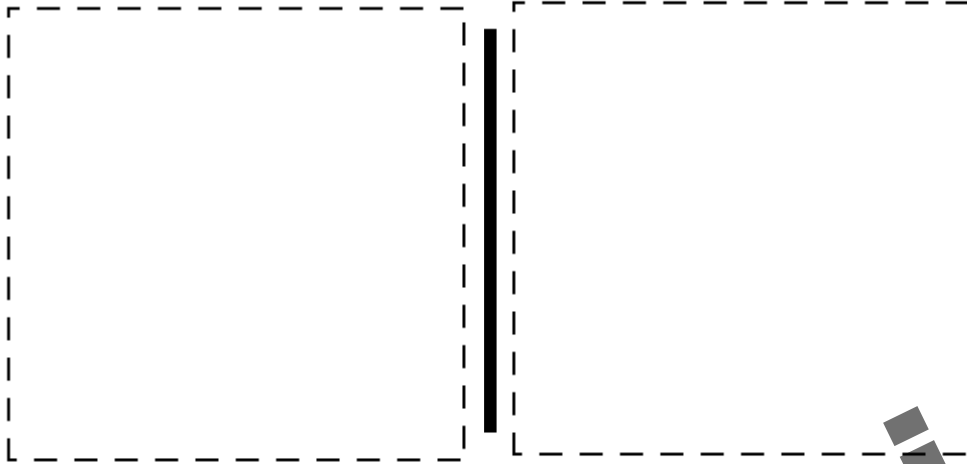
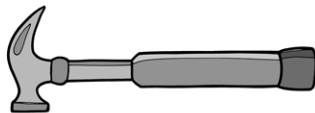
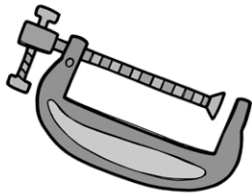
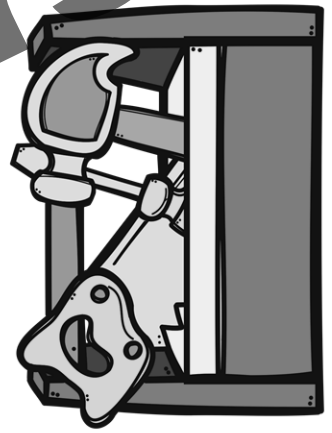
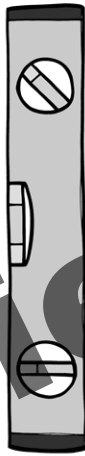
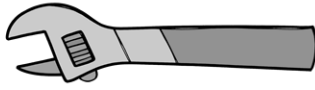
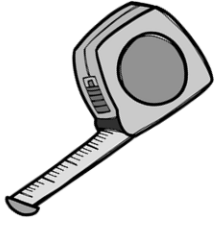
Player 2



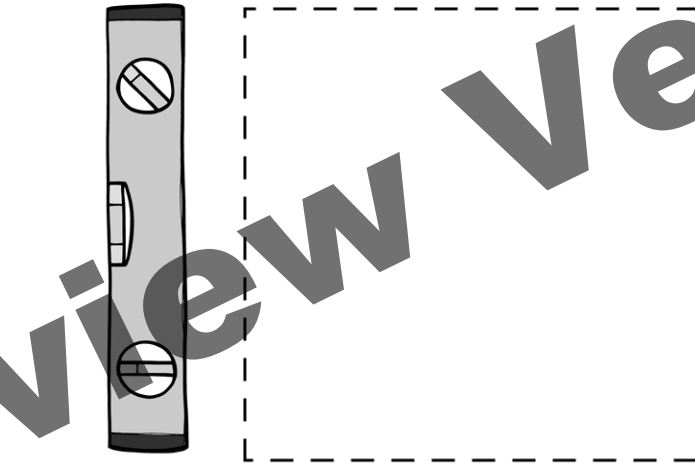
Preview Version

Fraction Construction

Your Task: Build the Larger Fraction



Player 2



Player 1

Fraction Construction Cards - Page 1

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1

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12

Preview Version

Fraction Construction Cards - Page 2

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12

Preview Version

Bonus Fraction Construction Cards

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30

Preview Version

Blank Fraction Construction Cards

Preview Version

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 Dawn Schechtman, Roxie Shimotsu, and Aleka Munroe. I truly appreciate your help!



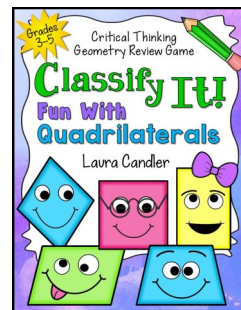
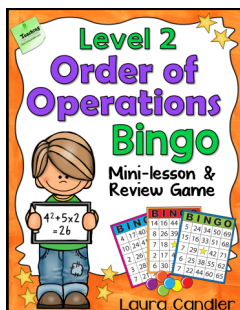
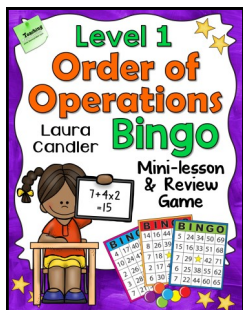
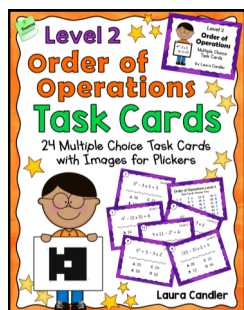
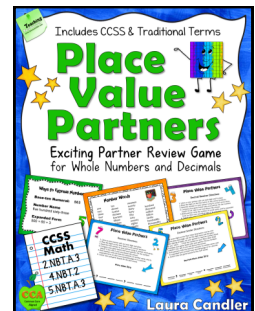
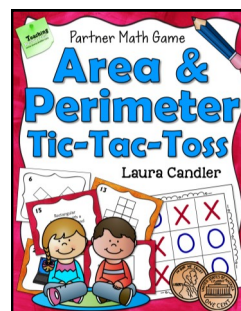
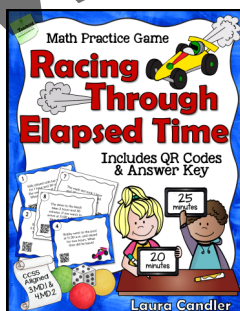
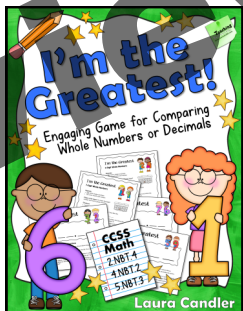
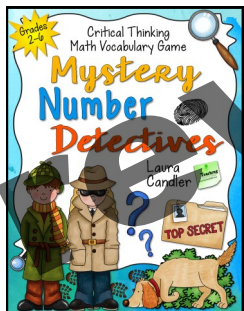
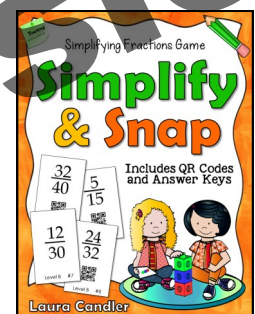
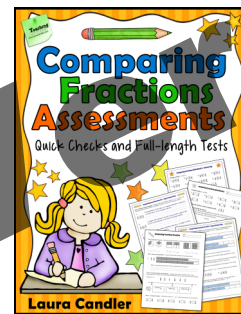
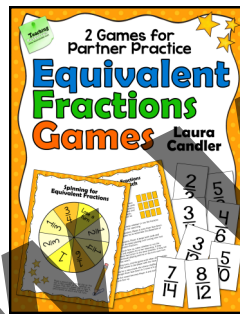
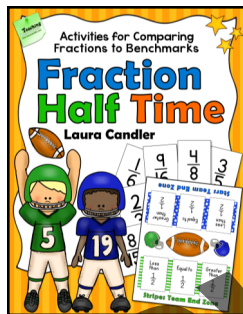
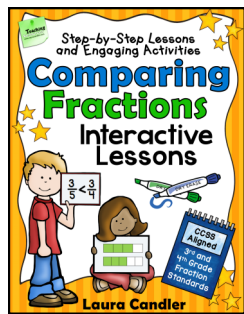
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