Pizza Fractions Mix Up

Comparing Fractions with Unlike Denominators

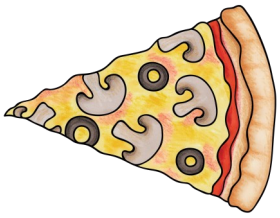
Preview Version

Laura Candler

Pizza Fractions Mix Up

by Laura Candler

4th Grade CCSS
4.NFA.1, 4.NFA.2



Pizza Fraction Mix Up is a whole-group, active-engagement lesson for practicing the skill of comparing fractions with unlike denominators. The lesson begins with a short review, and then each student colors a pizza pattern to match his or her assigned fraction card. During the Pizza Fraction Mix Up activity, students move around the room, stopping to compare and discuss their pizza fractions as instructed by the teacher. This packet includes step-by-step directions for the review lesson and the activity, fraction cards, blank pizza patterns, and a recording form.

Materials Needed for Each Student

- Dry erase board and marker (or paper and pencil)
- Crayons or colored pencils
- 1 Pizza Fractions Recording Form (page 7)
- 1 fraction card (pages 8-11)
- 1 Pizza Fractions pattern (pages 13-21)
- 1 Paperclip

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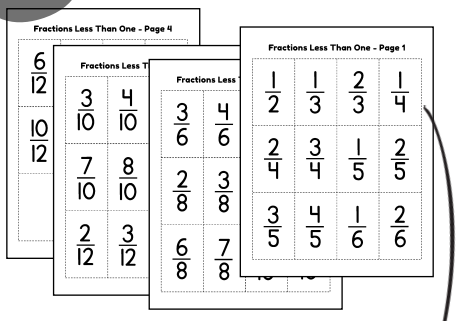
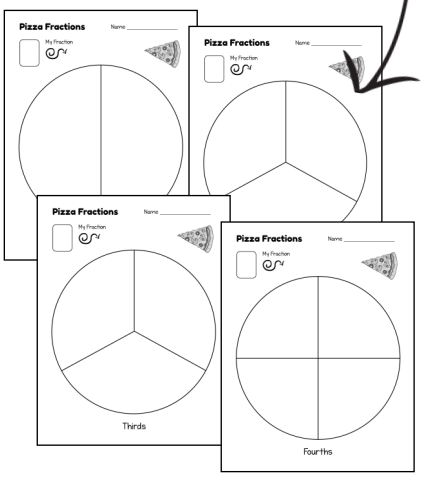
Advanced Preparation

1. You'll need one unique fraction card for each student, and one for yourself. There are 42 fraction cards on pages 8 to 11 that include halves, thirds, fourths, fifths, sixths, eighths, tenths, and twelfths. Print one copy of each page, cut the cards apart, and select the fraction cards that are most appropriate for your class. Note: There are 9 bonus fraction cards on page 12 that are equivalent to one. You may want to use them for comparison purposes during the review, but they don't work well for the Pizza Fraction Mix Up activity.

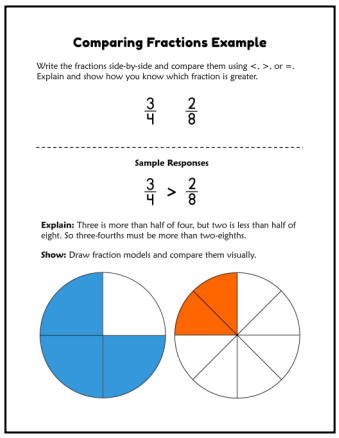


2. Print one blank Pizza Fractions pattern for each fraction card you plan to use. The patterns can be found in this teacher's guide, and they're also located in a separate folder within the product file. To decide how many copies of each pattern to print, look at the denominators on the cards. For example, the four fraction cards on the top row of page 1 require one pizza divided into halves, two pizzas divide into thirds, and one pizza divided into fourths.



3. To make the materials easier to distribute, paper clip each fraction card to its corresponding pizza pattern.

Comparing Fractions Review



Before you begin the whole group Pizza Fractions Mix Up activity, spend a few minutes reviewing strategies for comparing fractions with unlike denominators. Use the Comparing Fractions Example, page 5, to guide your students through the review.

1. Display the two fractions on the top of page 5. If you show the page to your students, be sure to cover the answers!
2. Ask your students to copy the fractions onto their dry erase boards and decide which fraction is larger.
3. Review the meanings of the greater than, less than, and equal symbols, and ask your students to draw the symbol that shows the correct comparison. Ask them to place their dry erase boards face down on their desks when ready.
4. When everyone has finished, ask them to turn to a partner and discuss their answers. Prompt them to justify their responses verbally and by drawing fraction illustrations. To explain why three-fourths is greater than two-eighths, a student might say that 3 out of 4 is more than half, and 2 out of 8 is less than half, so 3/4 must be greater than 2/8. Another strategy would be to simplify 2/8 to 1/4 so that the two fractions have the same denominator which makes them easier to compare.
5. Call on several students to explain and show how they compared the fractions. Then display and discuss the sample responses on the bottom of page 5.
6. If your students need additional practice, present several more review problems and work through them together.

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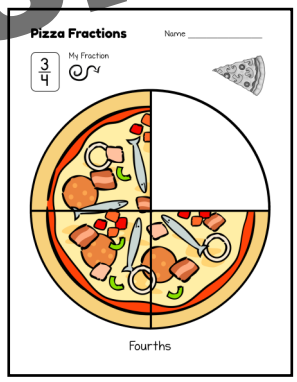
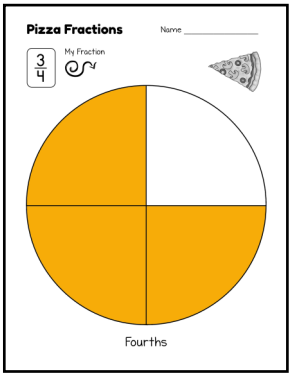
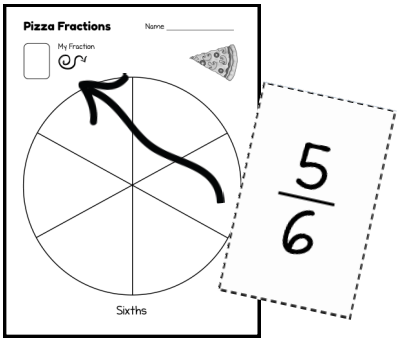
Create Visual Pizza Fraction Models

Before you introduce the Pizza Fraction Mix Up activity, each student will need to create a fraction model by coloring one pizza fraction pattern. Depending on the time allocated for the lesson, students can either color their circles to look like real pizzas or color them one solid color. The second method is quicker, but their drawings won't look like pizzas. However, the illustrations work fine as mathematical models.





Step-by-Step Directions



1. Give each student one unique fraction card and a blank pizza pattern divided into the number of sections indicated by the denominator. For example, the student who receives 5/6 will need a blank pizza pattern divided into sixths.
2. Ask each student to write his or her assigned fraction in the box at the top of the page. Remind them to keep the fraction card because they will need it for the activity.

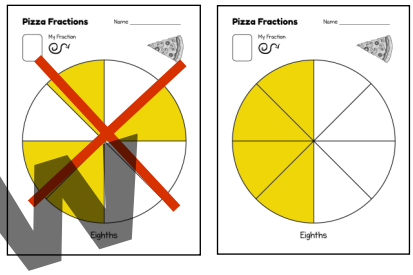
3. Use the fraction card you selected for yourself to demonstrate how to color the pizza fraction pattern. Follow one of the methods below.

   Favorite Pizza Method: Color the pizza pattern to look like a real pizza covered with your favorite toppings. Start by drawing a pizza crust just inside the edge of the circle, and then add your favorite toppings to the middle. Ask your students to help you brainstorm a list of pizza toppings like pepperoni, sausage, bacon, mushrooms, olives, green peppers, and onions. Remember to decorate only the number of sections that match the numerator of your assigned fraction.

   Single Color Method: Color the fractional parts using a single color. Each student may use a different color, but all sections on each pizza should be the same color.

   As you demonstrate how to color the pizza pattern, share these tips with your students:

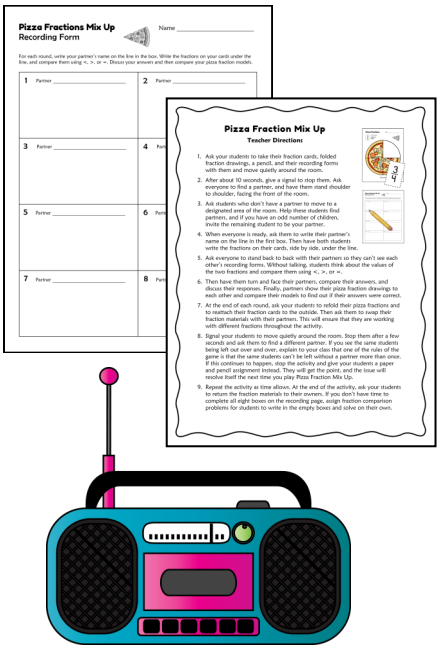
   - If your fraction's numerator is greater than one, you'll need to color more than one section of the pizza. Be sure to color pieces that are adjacent to each other as shown in the example on the far right. This makes it easier to compare fraction models.
   - Remind your students to color lightly so that the lines between the fractional parts are still visible.



4. After you demonstrate how to color the Pizza Fractions pattern, allow time for students to color their own. While they're working, walk around the room and check their work. It's important that each student's illustration matches the fraction on his or her card.
5. When everyone is finished, ask them to fold their drawings in half (with the illustrations inside) and paper clip the fraction card to the folded page. If you aren't planning to do the Pizza Fraction Mix Up activity on the same day, collect the fraction cards and pizza fractions to keep for the next lesson.

Preview Version

Pizza Fraction Mix Up Activity



Pizza Fraction Mix Up is a whole group, cooperative learning activity, and step-by-step directions can be found on page 6. Before you begin, give each student a copy of the Pizza Fractions Recording Form on page 7. If you collected the fraction cards and pizza drawings at the end of the previous activity, return those materials before you begin. Then follow the directions on page 6 to guide your students through the activity.

Throughout the lesson, you'll need to signal your students repeatedly to stop and listen for directions. Use any audible signal that you prefer. It could be a clapping pattern, a single tap on a set of chimes, a 3-2-1 number countdown, or starting and stopping a piece of music.

Comparing Fractions Example

Write the fractions side-by-side and compare them using <, >, or =. Explain and show how you know which fraction is greater.

$$\frac{3}{4} \quad \frac{2}{8}$$

Sample Responses

$$\frac{3}{4} > \frac{2}{8}$$

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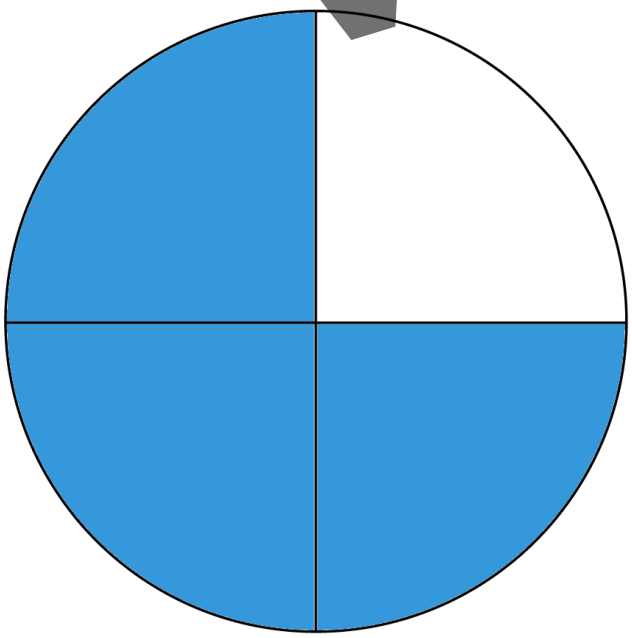
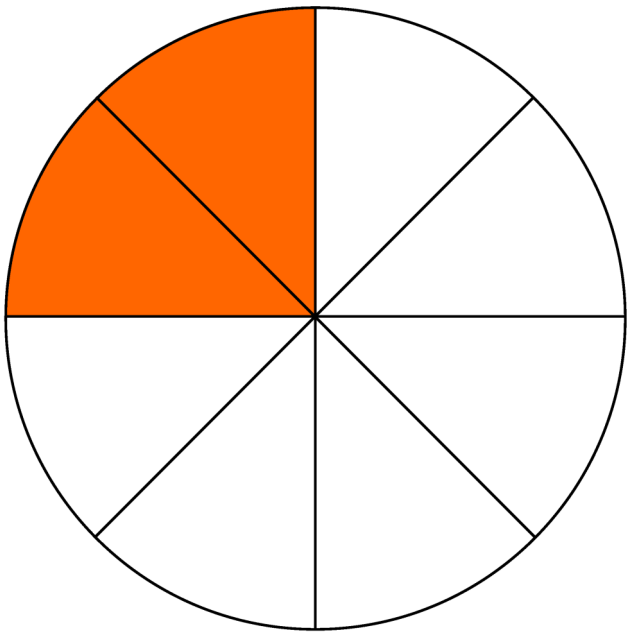
Explain: Three is more than half of four, but two is less than half of eight. So three-fourths must be more than two-eighths.

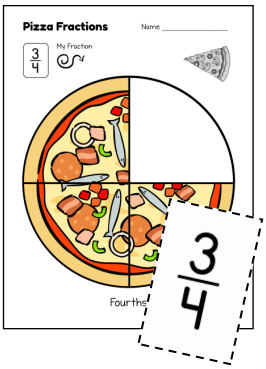
Show: Draw fraction models and compare them visually.

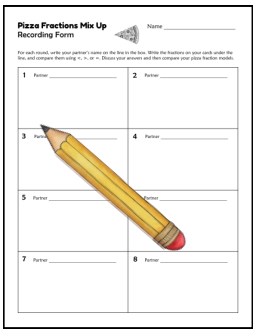




Pizza Fraction Mix Up

Teacher Directions

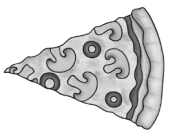




1. To begin the activity, announce, "Pizza Fraction Mix Up!" Ask your students to take their fraction cards, folded fraction drawings, a pencil, and their recording forms with them and mix quietly around the room.
2. After about 10 seconds, signal your students to stop. Ask everyone to find a partner, and have them stand shoulder to shoulder, facing the front of the room.
3. Invite students who don't have a partner to move to a designated area of the room. Help these students find partners, and if you have an odd number of children, ask the remaining student to be your partner.
4. When everyone is ready, ask them to write their partner's name on the line in the first box. Then have both students record the fractions on their cards, side by side, under the line.
5. Ask everyone to stand back to back with their partners so they can't see each other's recording forms. Without talking, students think about the values of the two fractions and compare them using <, >, or =.
6. Then have them turn and face their partners, compare their answers, and discuss their responses. Finally, partners show their pizza fraction drawings to each other and compare their models to find out if their answers were correct.
7. At the end of the round, ask your students to refold their pizza fractions and to reattach their fraction cards to the outside. Then ask them to swap their fraction materials with their partners. This step will ensure that they are working with different fractions throughout the activity.
8. To start the next round, say "Mix!" and ask your students to mix quietly around the room. Stop them after a few seconds and ask them to find a new partner. If you see the same students being left out over and over, explain to your class that one of the rules is that the same students can't be left without a partner more than once. If this continues to happen, stop the activity and give your students a paper and pencil assignment instead. They will get the point, and the issue will resolve itself the next time you play Pizza Fraction Mix Up.
9. Repeat the activity as time allows. At the end of the lesson, ask your students to return the fraction materials to their owners. If you don't have time to complete all eight boxes on the recording page, assign fraction comparison problems for students to write in the empty boxes and solve on their own.

Preview Version

Pizza Fractions Mix Up
Recording Form



Name _____

For each round, write your partner's name on the line in the box. Write your fractions side by side, under the line, and compare them using <, >, or =. Discuss your answers and then compare your pizza fraction models.

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

Preview Version

Fractions Less Than One - Page 1

$\frac{1}{2}$	$\frac{1}{3}$	$\frac{2}{3}$	$\frac{1}{4}$
$\frac{2}{4}$	$\frac{3}{4}$	$\frac{1}{5}$	$\frac{2}{5}$
$\frac{3}{5}$	$\frac{4}{5}$	$\frac{1}{6}$	$\frac{2}{6}$

Preview Version

Fractions Less Than One - Page 2

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

Preview Version

Fractions Less Than One - Page 3

$\frac{3}{10}$	$\frac{4}{10}$	$\frac{5}{10}$	$\frac{6}{10}$
$\frac{7}{10}$	$\frac{8}{10}$	$\frac{9}{10}$	$\frac{1}{12}$
$\frac{2}{12}$	$\frac{3}{12}$	$\frac{4}{12}$	$\frac{5}{12}$

Preview Version

Fractions Less Than One - Page 4

$\frac{6}{12}$	$\frac{7}{12}$	$\frac{8}{12}$	$\frac{9}{12}$
$\frac{10}{12}$	$\frac{11}{12}$		

Preview Version

Fractions Equal to One - Page 5

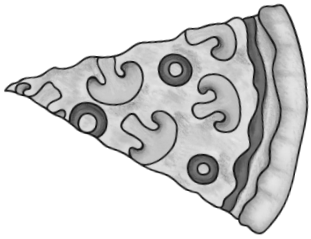
Bonus Fractions for Review Lesson

Preview Version

Pizza Fractions

Name _____

My Fraction



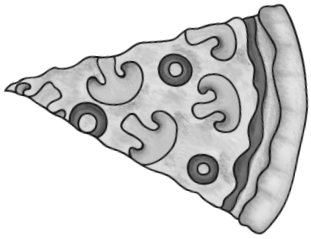
Preview Version

1 Whole

Pizza Fractions

Name _____

My Fraction



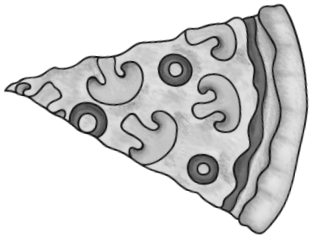
Preview Version

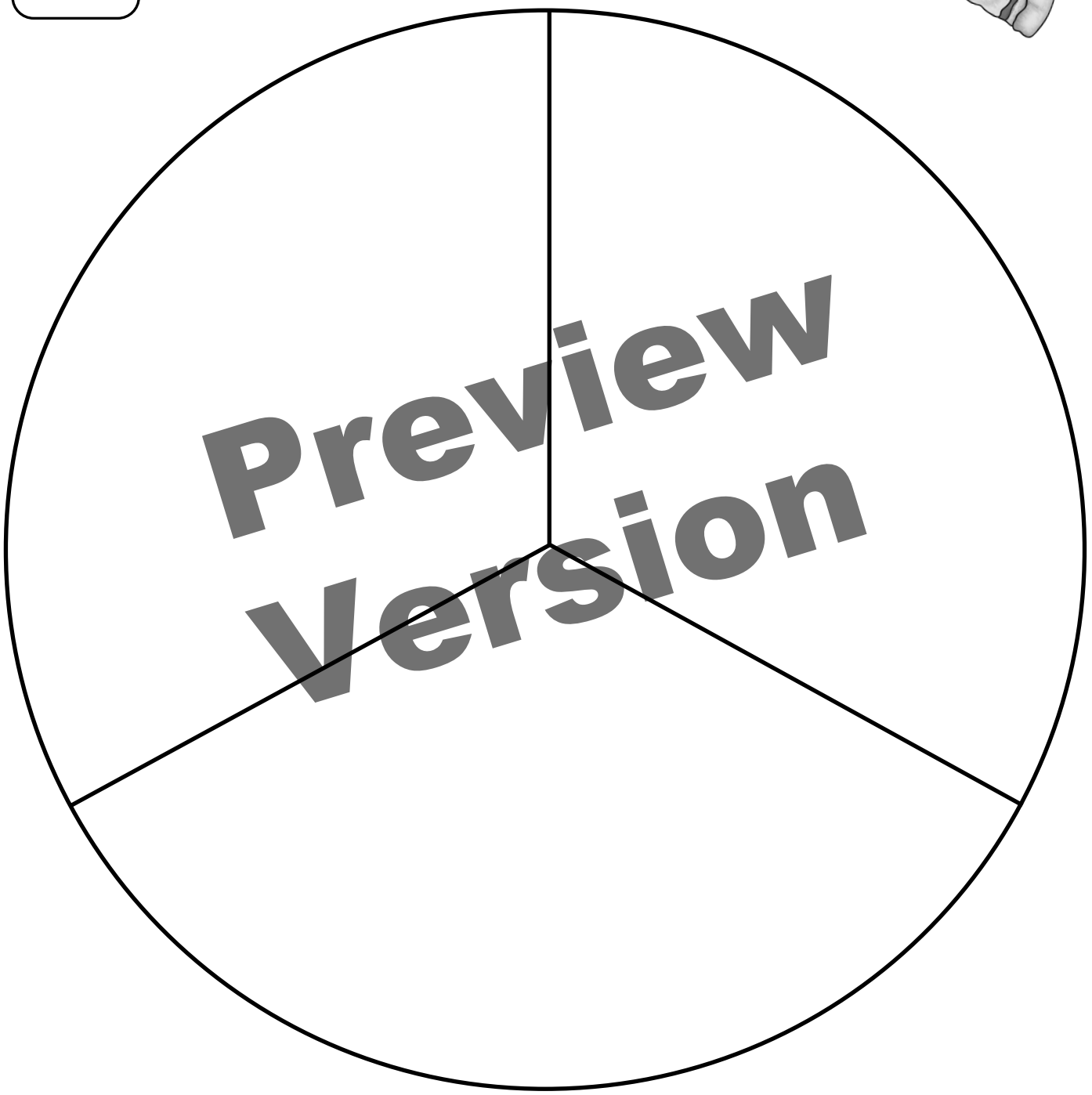
Halves

Pizza Fractions

Name _____

My Fraction





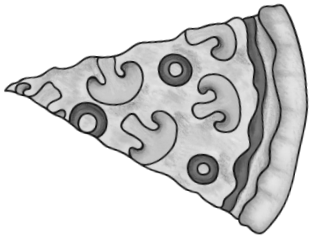
Preview Version

Thirds

Pizza Fractions

Name _____

My Fraction



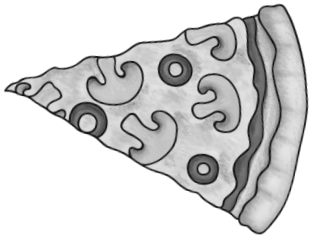
Preview Version

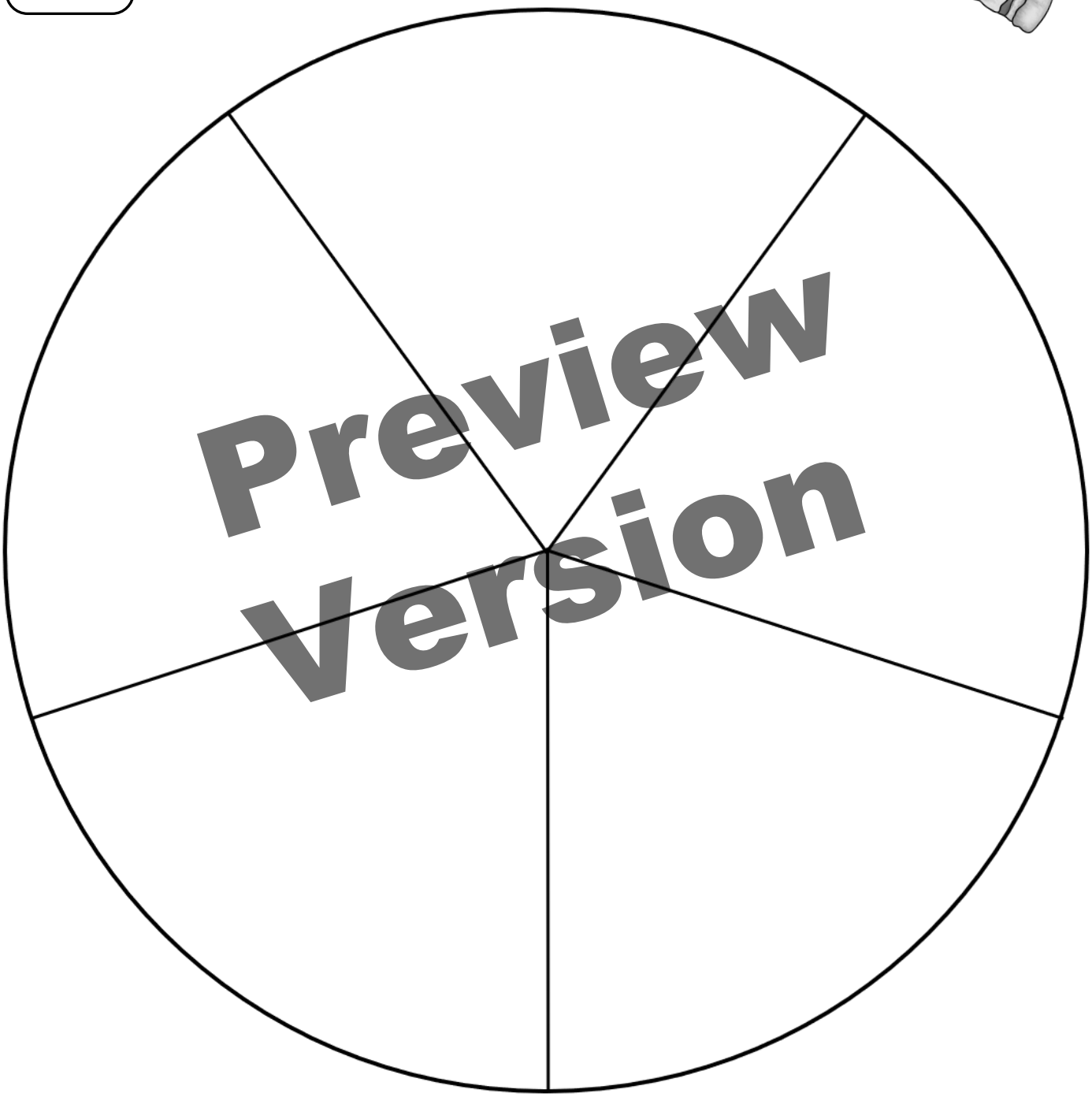
Fourths

Pizza Fractions

Name _____

My Fraction





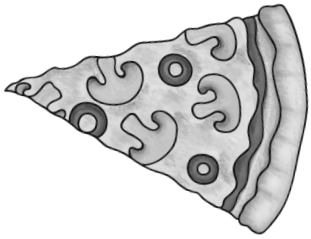
Preview Version

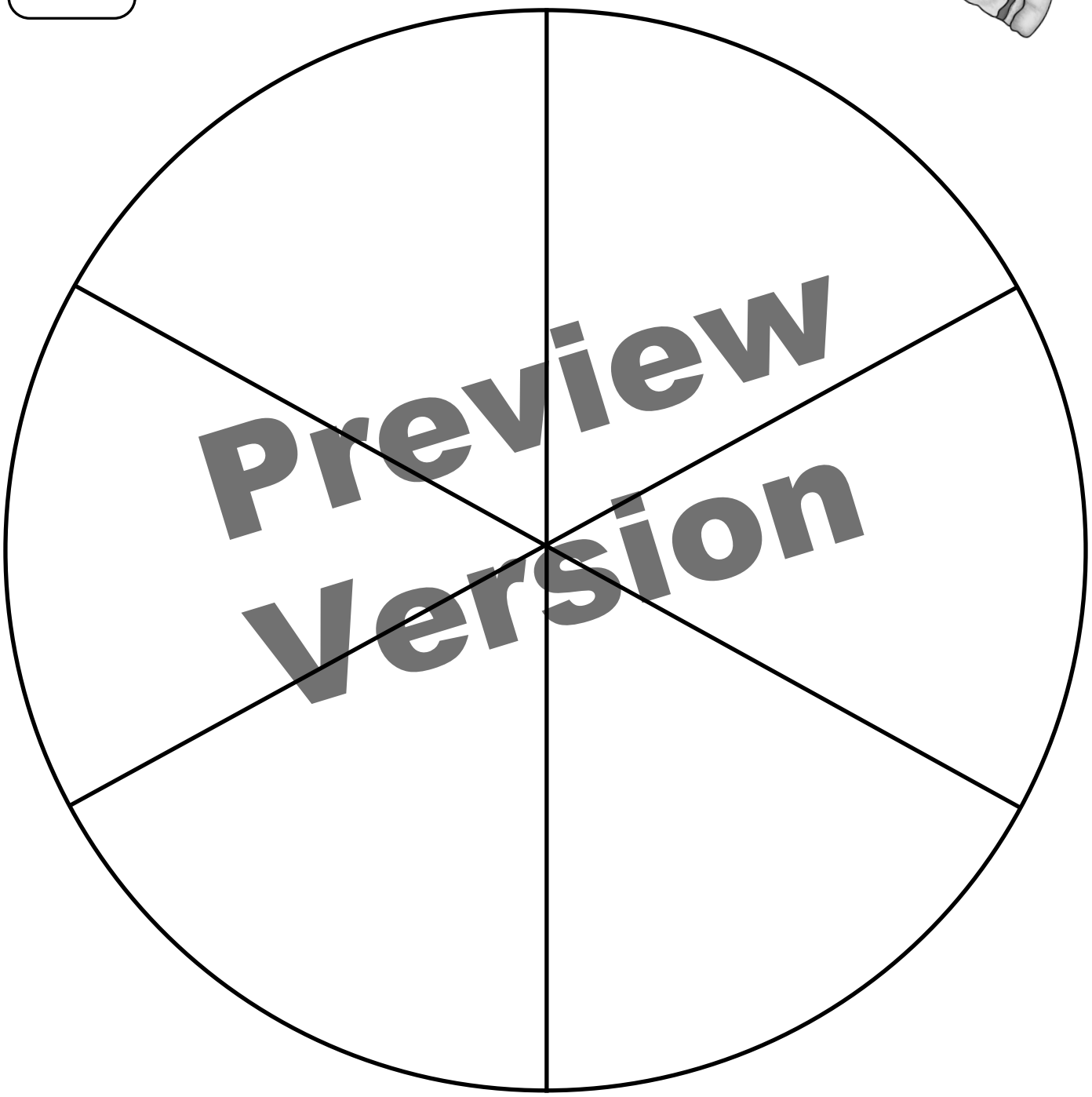
Fifths

Pizza Fractions

Name _____

My Fraction





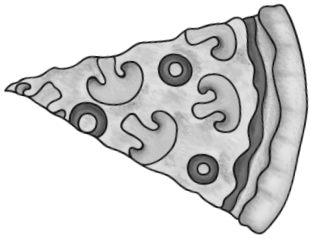
Preview Version

Sixths

Pizza Fractions

Name _____

My Fraction



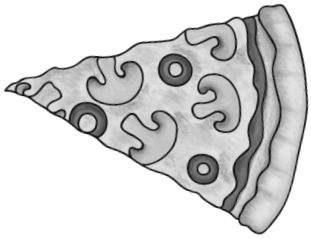
Preview Version

Eighths

Pizza Fractions

Name _____

My Fraction



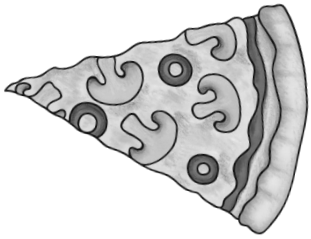
Preview Version

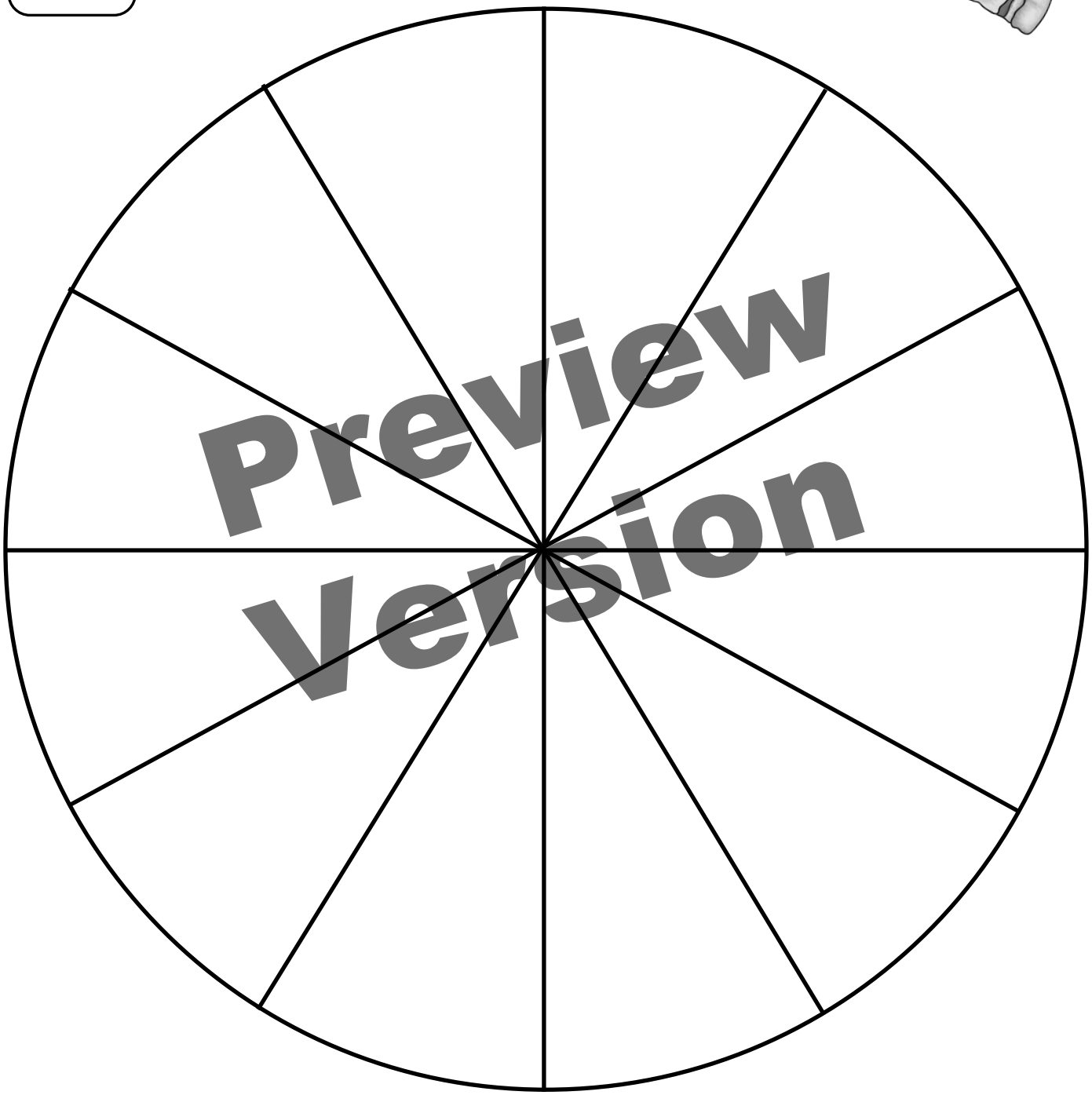
Tenths

Pizza Fractions

Name _____

My Fraction





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Twelfths

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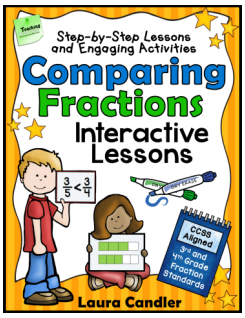

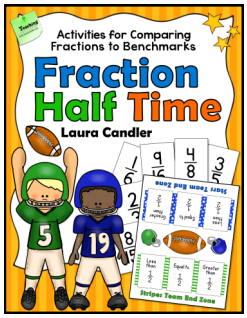

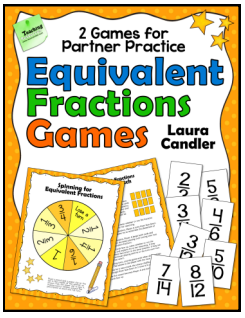

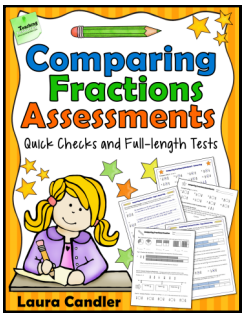

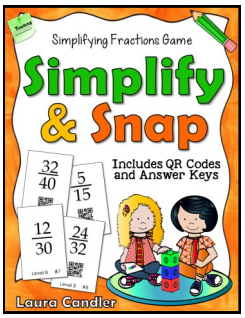

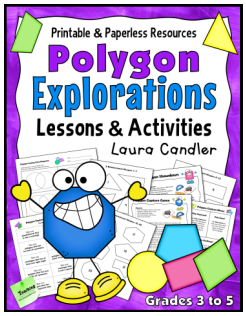

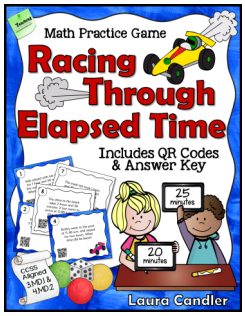

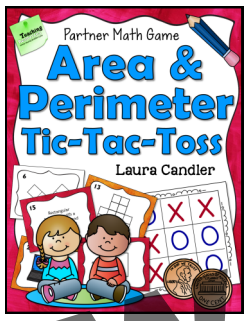

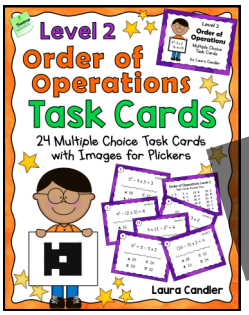

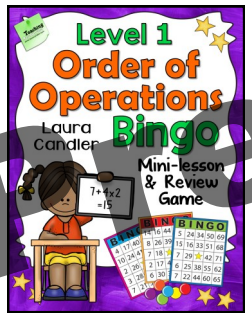

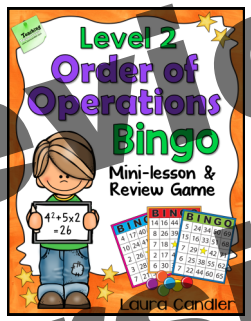

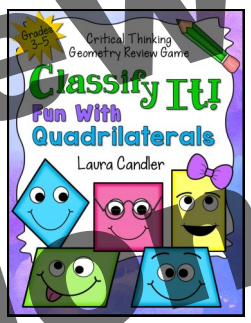

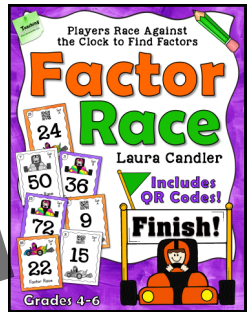

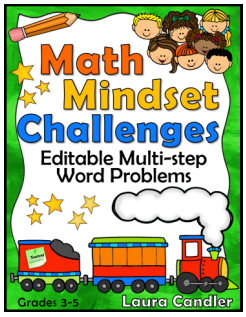

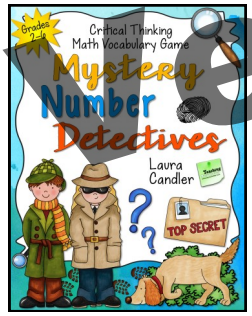

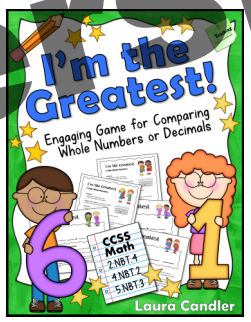

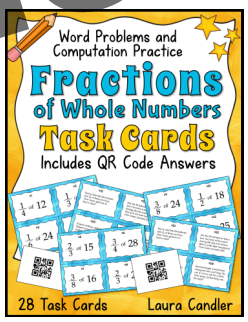

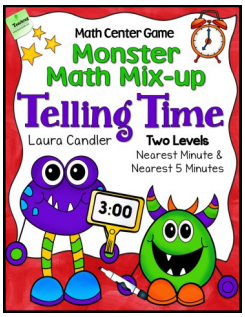

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