

Dear Family,

During the next few weeks, our math class will be learning more about fractions. We will learn how to compare fractions, order fractions, and find equivalent fractions.

You can expect to see homework that provides practice with fractions.

Here is a sample of how your child will be taught to compare fractions that have the same numerator.



MODEL Compare Fractions with the Same Numerator

This is one way we will be comparing fractions that have the same numerator.

STEP 1

Compare $\frac{4}{10}$ and $\frac{4}{6}$.

Look at the numerators.

Each numerator is 4.

The numerators are the same.

STEP 2

Since the numerators are the same, look at the denominators, 10 and 6.

The more pieces a whole is divided into, the smaller the pieces are. Tenths are smaller pieces than sixths.

So, $\frac{4}{10}$ is a smaller fraction of the whole than $\frac{4}{6}$.

$\frac{4}{10}$ is less than $\frac{4}{6}$. $\frac{4}{10} < \frac{4}{6}$

Vocabulary

common denominator A common multiple of the denominators of two or more fractions

denominator The part of the fraction below the line, which tells how many equal parts there are in the whole or in a group

equivalent fractions Two or more fractions that name the same amount

numerator The part of a fraction above the line, which tells how many parts are being counted

simplest form A fraction in which 1 is the only number that can divide evenly into the numerator and the denominator

Tips

Identifying Fewer Pieces

The fewer pieces a whole is divided into, the larger the pieces are. For example, when a whole is divided into 6 equal pieces, the pieces are larger than when the same size whole is divided into 10 equal pieces. So, $\frac{4}{6}$ is greater than ($>$) $\frac{4}{10}$.

Activity

Play a card game to help your child practice comparing fractions. On several cards, write a pair of fractions with the same numerator and draw a circle between the fractions. Players take turns drawing a card and telling whether *greater than* ($>$) or *less than* ($<$) belongs in the circle.

Carta para la casa

Querida familia,

Durante las próximas semanas, en la clase de matemáticas aprenderemos más sobre las fracciones.

Aprenderemos a comparar y ordenar fracciones, y a hallar fracciones equivalentes.

Llevaré a la casa tareas para practicar las fracciones.

Este es un ejemplo de la manera como aprenderemos a comparar fracciones que tienen el mismo numerador.

Vocabulario

común denominador Un múltiplo común de dos o más denominadores

denominador La parte de la fracción debajo de la barra que indica cuántas partes iguales hay en un total o en un grupo

fracciones equivalentes Dos o más fracciones que representan la misma cantidad

mínima expresión Una fracción en la que 1 es el único número que se puede dividir en partes iguales entre el numerador y el denominador

numerador La parte de una fracción por encima de la barra que indica cuántas partes se están contando



MODELO Comparar fracciones que tienen el mismo numerador

Esta es una manera como compararemos fracciones que tienen el mismo numerador.

Paso 1

Compara $\frac{4}{10}$ y $\frac{4}{6}$.

Mira los numeradores.

Cada numerador es 4.

Los numeradores son iguales.

Paso 2

Dado que los numeradores son iguales, mira los denominadores 10 y 6.

Entre más piezas se divida un entero, las piezas serán más pequeñas. Los décimos son piezas más pequeñas que los sextos.

Por lo tanto, $\frac{4}{10}$ es una fracción menor del entero que $\frac{4}{6}$.

$$\frac{4}{10} \text{ es menor que } \frac{4}{6} \cdot \frac{4}{10} < \frac{4}{6}$$

Pistas

Identificar menos piezas

Entre menos piezas se divida un entero, las piezas serán más grandes. Por ejemplo, si un entero se divide en 6 piezas iguales, las piezas son más grandes que las piezas del mismo entero, si éste se divide en 10 piezas iguales. Por lo tanto, $\frac{4}{6}$ es mayor que ($>$) $\frac{4}{10}$.

Actividad

Ayude a su hijo a comparar fracciones jugando con tarjetas de fracciones.

En varias tarjetas, escriba pares de fracciones con el mismo numerador y dibuje un círculo entre las fracciones. Túrnense para dibujar cada tarjeta y decir qué debe ir en el círculo: “mayor que” o “menor que.”

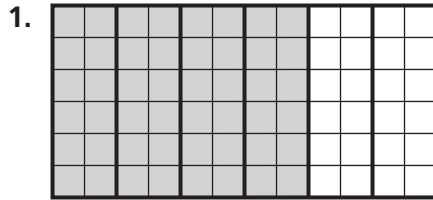
Name _____

Equivalent Fractions



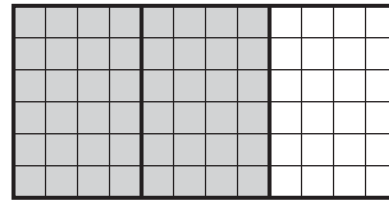
COMMON CORE STANDARD—4.NF.1
Extend understanding of fraction equivalence and ordering.

Use the model to write an equivalent fraction.

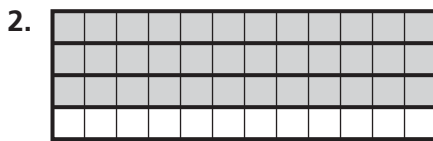


$$\frac{4}{6}$$

=



$$\frac{2}{3}$$



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

=



Tell whether the fractions are equivalent. Write = or \neq .

3. $\frac{8}{10} \bigcirc \frac{4}{5}$

4. $\frac{1}{2} \bigcirc \frac{7}{12}$

5. $\frac{3}{4} \bigcirc \frac{8}{12}$

6. $\frac{2}{3} \bigcirc \frac{4}{6}$

7. $\frac{5}{8} \bigcirc \frac{4}{10}$

8. $\frac{2}{6} \bigcirc \frac{4}{12}$

9. $\frac{20}{100} \bigcirc \frac{1}{5}$

10. $\frac{5}{8} \bigcirc \frac{9}{10}$

Problem Solving



11. Jamal finished $\frac{5}{6}$ of his homework. Margaret finished $\frac{3}{4}$ of her homework, and Steve finished $\frac{10}{12}$ of his homework. Which two students finished the same amount of homework?

12. Sophia's vegetable garden is divided into 12 equal sections. She plants carrots in 8 of the sections. Write two fractions that are equivalent to the part of Sophia's garden that is planted with carrots.

Lesson Check (4.NF.1)

1. A rectangle is divided into 8 equal parts. Two parts are shaded. What fraction is equivalent to the shaded area of the rectangle?
2. Jeff uses 3 fifth-size strips to model $\frac{3}{5}$. He wants to use tenth-size strips to model an equivalent fraction. How many tenth-size strips will he need?

Spiral Review (4.OA.3, 4.OA.4, 4.NBT.5, 4.NBT.6)

3. Cassidy places 40 stamps on each of 8 album pages. How many stamps does she place?
4. Maria and 3 friends have 1,200 soccer cards. If they share the soccer cards equally, how many will each person receive?

5. Six groups of students sell 162 balloons at the school carnival. There are 3 students in each group. If each student sells the same number of balloons, how many balloons does each student sell?
6. Four students each made a list of prime numbers.
Eric: 5, 7, 17, 23
Maya: 3, 5, 13, 17
Bella: 2, 3, 17, 19
Jordan: 7, 11, 13, 21
Who made an error and included a composite number? Write the composite number from his or her list.

Name _____

Generate Equivalent Fractions**COMMON CORE STANDARD—4.NF.1**
*Extend understanding of fraction equivalence and ordering.***Write two equivalent fractions for each.**

1. $\frac{1}{3}$

2. $\frac{2}{3}$

3. $\frac{1}{2}$

4. $\frac{4}{5}$

$$\frac{1 \times 2}{3 \times 2} = \frac{2}{6}$$

$$\frac{1 \times 4}{3 \times 4} = \frac{4}{12}$$

Tell whether the fractions are equivalent.**Write = or \neq .**

5. $\frac{1}{4} \bigcirc \frac{3}{12}$

6. $\frac{4}{5} \bigcirc \frac{5}{10}$

7. $\frac{3}{8} \bigcirc \frac{2}{6}$

8. $\frac{3}{4} \bigcirc \frac{6}{8}$

9. $\frac{5}{6} \bigcirc \frac{10}{12}$

10. $\frac{6}{12} \bigcirc \frac{5}{8}$

11. $\frac{2}{5} \bigcirc \frac{4}{10}$

12. $\frac{2}{4} \bigcirc \frac{3}{12}$

Problem Solving

13. Jan has a 12-ounce milkshake. Four ounces in the milkshake are vanilla, and the rest is chocolate. What are two equivalent fractions that represent the fraction of the milkshake that is vanilla?
14. Kareem lives $\frac{4}{10}$ of a mile from the mall. Write two equivalent fractions that show what fraction of a mile Kareem lives from the mall.

Lesson Check (4.NF.1)

1. Jessie colored a poster. She colored $\frac{2}{5}$ of the poster red. Write a fraction that is equivalent to $\frac{2}{5}$.
2. Marcus makes a punch that is $\frac{1}{4}$ cranberry juice. Write two fractions that are equivalent to $\frac{1}{4}$.

Spiral Review (4.OA.3, 4.OA.5, 4.NBT.5)

3. An electronics store sells a large flat screen television for \$1,699. Last month, the store sold 8 of these television sets. About how much money did the televisions sell for?
4. Matthew has 18 sets of baseball cards. Each set has 12 cards. About how many baseball cards does Matthew have?

5. Diana had 41 stickers. She put them in 7 equal groups. She put as many as possible in each group. She gave the leftover stickers to her sister. How many stickers did Diana give to her sister?
6. Christopher wrote the number pattern below. The first term is 8.
8, 6, 9, 7, 10, ...
What is a rule for the pattern?

Name _____

Simplest Form**COMMON CORE STANDARD—4.NF.1**
Extend understanding of fraction equivalence and ordering.**Write the fraction in simplest form.**

1. $\frac{6}{10}$

$$\frac{6}{10} = \frac{6 \div 2}{10 \div 2} = \frac{3}{5}$$

2. $\frac{6}{8}$

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

4. $\frac{8}{12}$

5. $\frac{100}{100}$

6. $\frac{2}{6}$

7. $\frac{2}{8}$

8. $\frac{4}{10}$

Tell whether the fractions are equivalent.**Write = or \neq .**

9. $\frac{6}{12} \bigcirc \frac{1}{12}$

10. $\frac{3}{4} \bigcirc \frac{5}{6}$

11. $\frac{6}{10} \bigcirc \frac{3}{5}$

12. $\frac{3}{12} \bigcirc \frac{1}{3}$

13. $\frac{6}{10} \bigcirc \frac{60}{100}$

14. $\frac{11}{12} \bigcirc \frac{9}{10}$

15. $\frac{2}{5} \bigcirc \frac{8}{20}$

16. $\frac{4}{8} \bigcirc \frac{1}{2}$

Problem Solving

17. At Memorial Hospital, 9 of the 12 babies born on Tuesday were boys. In simplest form, what fraction of the babies born on Tuesday were boys?

18. Cristina uses a ruler to measure the length of her math textbook. She says that the book is $\frac{4}{10}$ meter long. Is her measurement in simplest form? If not, what is the length of the book in simplest form?

Lesson Check (4.NF.1)

1. Six out of the 12 members of the school choir are boys. In simplest form, what fraction of the choir is boys?
2. Write $\frac{10}{12}$ in simplest form.

Spiral Review (4.OA.3, 4.OA.4, 4.NBT.5, 4.NF.1)

3. Each of the 23 students in Ms. Evans' class raised \$45 for the school by selling coupon books. How much money did the class raise?
4. List two common factors of 36 and 48.
5. Bart uses $\frac{3}{12}$ cup milk to make muffins. Write a fraction that is equivalent to $\frac{3}{12}$.
6. Ashley bought 4 packages of juice boxes. There are 6 juice boxes in each package. She gave 2 juice boxes to each of 3 friends. How many juice boxes does Ashley have left?

Name _____

Common Denominators



COMMON CORE STANDARD—4.NF.1
Extend understanding of fraction equivalence and ordering.

Write the pair of fractions as a pair of fractions with a common denominator.

1. $\frac{2}{3}$ and $\frac{3}{4}$

2. $\frac{1}{4}$ and $\frac{2}{3}$

3. $\frac{3}{10}$ and $\frac{1}{2}$

Think: Find a common multiple.

3: 3, 6, 9, **12**, 15

4: 4, 8, **12**, 16, 20

$$\frac{8}{12}, \frac{9}{12}$$

4. $\frac{3}{5}$ and $\frac{3}{4}$

5. $\frac{2}{4}$ and $\frac{7}{8}$

6. $\frac{2}{3}$ and $\frac{5}{12}$

7. $\frac{1}{4}$ and $\frac{1}{6}$

Tell whether the fractions are equivalent. Write = or \neq .

8. $\frac{1}{2} \bigcirc \frac{2}{5}$

9. $\frac{1}{2} \bigcirc \frac{3}{6}$

10. $\frac{3}{4} \bigcirc \frac{5}{6}$

11. $\frac{6}{10} \bigcirc \frac{3}{5}$

12. $\frac{6}{8} \bigcirc \frac{3}{4}$

13. $\frac{3}{4} \bigcirc \frac{2}{3}$

14. $\frac{2}{10} \bigcirc \frac{4}{5}$

15. $\frac{1}{4} \bigcirc \frac{3}{12}$

Problem Solving



16. Adam drew two same size rectangles and divided them into the same number of equal parts. He shaded $\frac{1}{3}$ of one rectangle and $\frac{1}{4}$ of the other rectangle. What is the least number of parts into which both rectangles could be divided?

17. Mera painted equal sections of her bedroom wall to make a pattern. She painted $\frac{2}{5}$ of the wall white and $\frac{1}{2}$ of the wall lavender. Write an equivalent fraction for each fraction using a common denominator.

Lesson Check (4.NF.1)

1. Write a common denominator for $\frac{1}{4}$ and $\frac{5}{6}$.
2. Two fractions have a common denominator of 8. What could the two fractions be?

Spiral Review (4.NBT.2, 4.NBT.5, 4.NBT.6, 4.NF.1)

3. What number is 100,000 more than seven hundred two thousand, eighty-three?
4. Aiden baked 8 dozen muffins. How many total muffins did he bake?
5. On a bulletin board, the principal, Ms. Gomez, put 115 photos of the fourth-grade students in her school. She put the photos in 5 equal rows. How many photos did she put in each row?
6. Judy uses 12 tiles to make a mosaic. Eight of the tiles are blue. What fraction, in simplest form, represents the tiles that are blue?

Name _____

Problem Solving • Find Equivalent Fractions



COMMON CORE STANDARD—4.NF.1
 Extend understanding of fraction equivalence and ordering.

Solve each problem.

1. Miranda is braiding her hair. Then she will attach beads to the braid. She wants $\frac{1}{3}$ of the beads to be red. If the greatest number of beads that will fit on the braid is 12, what other fractions could represent the part of the beads that are red?

$$\frac{2}{6}, \frac{3}{9}, \frac{4}{12}$$

2. Ms. Groves has trays of paints for students in her art class. Each tray has 5 colors. One of the colors is purple. What fraction of the colors in 20 trays is purple?

3. Miguel is making an obstacle course for field day. At the end of every sixth of the course, there is a tire. At the end of every third of the course, there is a cone. At the end of every half of the course, there is a hurdle. At which locations of the course will people need to go through more than one obstacle?

4. Preston works in a bakery where he puts muffins in boxes. He makes the following table to remind himself how many blueberry muffins should go in each box.

Number of Blueberry Muffins	2	4	8	■
Total Number of Muffins	6	12	24	36

How many blueberry muffins should Preston put in a box with 36 muffins?

Lesson Check (4.NF.1)

1. A used bookstore will trade 2 of its books for 3 of yours. If Val brings in 18 books to trade, how many books can she get from the store?
2. Every $\frac{1}{2}$ hour Naomi stretches her neck; every $\frac{1}{3}$ hour she stretches her legs; and every $\frac{1}{6}$ hour she stretches her arms. Which parts of her body will Naomi stretch when $\frac{2}{3}$ of an hour has passed?

Spiral Review (4.OA.4, 4.NBT.4, 4.NBT.6, 4.NF.1)

3. At the beginning of the year, the Wong family car had been driven 14,539 miles. At the end of the year, their car had been driven 21,844 miles. How many miles did the Wong family drive their car during that year?
4. Widget Company made 3,600 widgets in 4 hours. They made the same number of widgets each hour. How many widgets did the company make in one hour?
5. Tyler is thinking of a number that is divisible by 2 and by 3. Write another number by which Tyler's number must also be divisible.
6. Jessica drew a circle divided into 8 equal parts. She shaded 6 of the parts. What fraction is equivalent to the part of the circle that is shaded?

Name _____

Compare Fractions Using Benchmarks**COMMON CORE STANDARD—4.NF.2***Extending understanding of fraction equivalence and ordering.***Compare. Write < or >.**

1. $\frac{1}{8} \text{ } \left(< \right) \text{ } \frac{6}{10}$

Think: $\frac{1}{8}$ is less than $\frac{1}{2}$. $\frac{6}{10}$ is more than $\frac{1}{2}$.

2. $\frac{4}{12} \text{ } \left(\bigcirc \right) \text{ } \frac{4}{6}$

3. $\frac{2}{8} \text{ } \left(\bigcirc \right) \text{ } \frac{1}{2}$

4. $\frac{3}{5} \text{ } \left(\bigcirc \right) \text{ } \frac{3}{3}$

5. $\frac{7}{8} \text{ } \left(\bigcirc \right) \text{ } \frac{5}{10}$

6. $\frac{9}{12} \text{ } \left(\bigcirc \right) \text{ } \frac{1}{3}$

7. $\frac{4}{6} \text{ } \left(\bigcirc \right) \text{ } \frac{7}{8}$

8. $\frac{2}{4} \text{ } \left(\bigcirc \right) \text{ } \frac{2}{3}$

9. $\frac{3}{5} \text{ } \left(\bigcirc \right) \text{ } \frac{1}{4}$

10. $\frac{6}{10} \text{ } \left(\bigcirc \right) \text{ } \frac{2}{5}$

11. $\frac{1}{8} \text{ } \left(\bigcirc \right) \text{ } \frac{2}{10}$

12. $\frac{2}{3} \text{ } \left(\bigcirc \right) \text{ } \frac{5}{12}$

13. $\frac{4}{5} \text{ } \left(\bigcirc \right) \text{ } \frac{5}{6}$

14. $\frac{3}{5} \text{ } \left(\bigcirc \right) \text{ } \frac{5}{8}$

15. $\frac{8}{8} \text{ } \left(\bigcirc \right) \text{ } \frac{3}{4}$

Problem Solving**Real World**

16. Erika ran
- $\frac{3}{8}$
- mile. Maria ran
- $\frac{3}{4}$
- mile. Who ran farther?

17. Carlos finished
- $\frac{1}{3}$
- of his art project on Monday. Tyler finished
- $\frac{1}{2}$
- of his art project on Monday. Who finished more of his art project on Monday?

Lesson Check (4.NF.2)

1. What symbol makes the statement true?
2. Write a fraction, less than 1, with a denominator of 6 that is greater than $\frac{3}{4}$.

$$\frac{4}{6} \bigcirc \frac{3}{8}$$

Spiral Review (4.OA.3, 4.OA.4, 4.NBT.6)

3. Abigail is putting tiles on a table top. She needs 48 tiles for each of 8 rows. Each row will have 6 white tiles. The rest of the tiles will be purple. How many purple tiles will she need?

4. Each school bus going on the field trip holds 36 students and 4 adults. There are 6 filled buses on the field trip. How many people are going on the field trip?

5. Noah wants to display his 72 collector's flags. He is going to put 6 flags in each row. How many rows of flags will he have in his display?

6. Julian wrote this number pattern on the board:
3, 10, 17, 24, 31, 38.
Which of the numbers in Julian's pattern are composite numbers?

Name _____

Compare Fractions**COMMON CORE STANDARD—4.NF.2**
Extend understanding of fraction equivalence and ordering.**Compare.** Write $<$, $>$, or $=$.

1. $\frac{3}{4} \bigcirc \frac{5}{6}$

2. $\frac{1}{5} \bigcirc \frac{2}{10}$

3. $\frac{2}{4} \bigcirc \frac{2}{5}$

Think: 12 is a common denominator.

$$\frac{3}{4} = \frac{3 \times 3}{4 \times 3} = \frac{9}{12}$$

$$\frac{5}{6} = \frac{5 \times 2}{6 \times 2} = \frac{10}{12}$$

$$\frac{9}{12} < \frac{10}{12}$$

4. $\frac{3}{5} \bigcirc \frac{7}{10}$

5. $\frac{4}{12} \bigcirc \frac{1}{6}$

6. $\frac{2}{6} \bigcirc \frac{1}{3}$

7. $\frac{1}{3} \bigcirc \frac{2}{4}$

8. $\frac{2}{5} \bigcirc \frac{1}{2}$

9. $\frac{4}{8} \bigcirc \frac{2}{4}$

10. $\frac{7}{12} \bigcirc \frac{2}{4}$

11. $\frac{1}{8} \bigcirc \frac{3}{4}$

Problem Solving

12. A recipe uses $\frac{2}{3}$ cup of flour and $\frac{5}{8}$ cup of blueberries. Is there more flour or more blueberries in the recipe?

13. Peggy completed $\frac{5}{6}$ of the math homework and Al completed $\frac{4}{5}$ of the math homework. Did Peggy or Al complete more of the math homework?

Lesson Check (4.NF.2)

1. Pedro fills a glass $\frac{2}{4}$ full with orange juice. Write a fraction with a denominator of 6 that is greater than $\frac{2}{4}$.
2. Today Ian wants to run less than $\frac{7}{12}$ mile. Write a fraction with a denominator of 4 to represent a distance that is less than $\frac{7}{12}$ mile.

Spiral Review (4.OA.4, 4.NBT.1, 4.NBT.5, 4.NF.1)

3. Ms. Davis traveled 372,645 miles last year on business. What is the value of 6 in 372,645?
4. One section of an auditorium has 12 rows of seats. Each row has 13 seats. What is the total number of seats in that section?

5. Sam has 12 black-and-white photos and 18 color photos. He wants to put the photos in equal rows so each row has either black-and-white photos only or color photos only. In how many rows can Sam arrange the photos?
6. The teacher writes $\frac{10}{12}$ on the board. Write this fraction in simplest form.

Name _____

Compare and Order Fractions



COMMON CORE STANDARD—4.NF.2
Extend understanding of fraction equivalence and ordering.

Write the fractions in order from least to greatest.

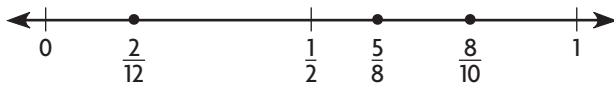
1. $\frac{5}{8}, \frac{2}{12}, \frac{8}{10}$

2. $\frac{1}{5}, \frac{2}{3}, \frac{5}{8}$

Use benchmarks and a number line.

Think: $\frac{5}{8}$ is close to $\frac{1}{2}$. $\frac{2}{12}$ is close to 0.

$\frac{8}{10}$ is close to 1.



$$\frac{2}{12} < \frac{5}{8} < \frac{8}{10}$$

3. $\frac{1}{2}, \frac{2}{5}, \frac{6}{10}$

4. $\frac{4}{6}, \frac{7}{12}, \frac{5}{10}$

5. $\frac{1}{4}, \frac{3}{6}, \frac{1}{8}$

6. $\frac{1}{8}, \frac{3}{6}, \frac{7}{12}$

7. $\frac{8}{100}, \frac{3}{5}, \frac{7}{10}$

8. $\frac{3}{4}, \frac{7}{8}, \frac{1}{5}$

Problem Solving

9. Amy's math notebook weighs $\frac{1}{2}$ pound, her science notebook weighs $\frac{7}{8}$ pound, and her history notebook weighs $\frac{3}{4}$ pound. What are the weights in order from lightest to heaviest?

10. Carl has three picture frames. The thicknesses of the frames are $\frac{4}{5}$ inch, $\frac{3}{12}$ inch, and $\frac{5}{6}$ inch. What are the thicknesses in order from least to greatest?

Lesson Check (4.NF.2)

1. Juan's three math quizzes this week took him $\frac{1}{3}$ hour, $\frac{4}{6}$ hour, and $\frac{1}{5}$ hour to complete. List the lengths of time in order from least to greatest.
2. On three days last week, Maria ran $\frac{3}{4}$ mile, $\frac{7}{8}$ mile, and $\frac{3}{5}$ mile. List the distances in order from least to greatest.

Spiral Review (4.OA.4, 4.NBT.5, 4.NBT.6, 4.NF.1)

3. Santiago collects 435 cents in nickels. How many nickels does he collect?
4. Lisa has three classes that each last 50 minutes. What is the total number of minutes of the three classes?
5. Alicia wrote these numbers: 2, 9, 15, 21. Which of Alicia's numbers is NOT a composite number?
6. Mrs. Carmel serves $\frac{6}{8}$ of a loaf of bread with dinner. Write a fraction with a denominator of 4 that is equivalent to $\frac{6}{8}$.