School-Home Letter

Vocabulary

mixed number A number represented by a whole number and a fraction

multiple A number that is the product of a given number and a counting number

unit fraction A fraction that has 1 as its top number or numerator

Dear Family,

During the next few weeks, our math class will be learning how to multiply fractions and mixed numbers by whole numbers. We will learn to write a fraction as a product of a whole number and a unit fraction, and to find multiples of unit fractions.

You can expect to see homework that provides practice multiplying fractions and whole numbers with and without using models.
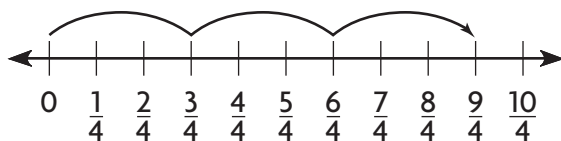
Here is a sample of how your child will be taught to use a number line to find multiples of a fraction.

🔒 MODEL Use a Number Line to Write Multiples of Fractions

Write $3 \times \frac{3}{4}$ as the product of a whole number and a unit fraction.

STEP 1

Start at 0. Draw jumps to find multiples of $\frac{3}{4}$: $\frac{3}{4}, \frac{6}{4}, \frac{9}{4}$.

STEP 2

Write the multiple as a product of a whole number and a unit fraction.

So, $3 \times \frac{3}{4} = \frac{9}{4} = 9 \times \frac{1}{4}$.

Tips

Renaming as a Mixed Number

When the numerator is greater than the denominator, the fraction can be renamed as a mixed number.

$$\frac{9}{4} = \frac{4}{4} + \frac{4}{4} + \frac{1}{4}$$
$$= 2 + \frac{1}{4}$$
$$= 2\frac{1}{4}$$

Activity

Use everyday situations, such as cooking and measures to help your child practice fraction multiplication.

Carta
para la casa

Querida familia,

Durante las próximas semanas, en la clase de matemáticas aprenderemos a multiplicar fracciones y números mixtos por números enteros. También aprenderemos a escribir fracciones como el producto de un número entero y una fracción unitaria y a hallar múltiplos de fracciones unitarias.

Llevaré a casa tareas para practicar la multiplicación de fracciones y números enteros usando modelos y sin modelos.

Este es un ejemplo de cómo vamos a usar una recta numérica para hallar los múltiplos de una fracción.

🔑 MODELO Usar una recta numérica para escribir múltiplos de fracciones

Escribe $3 \times \frac{3}{4}$ como el producto de un número entero y una fracción unitaria.

PASO 1

Comienza en 0. Dibuja saltos para hallar los múltiplos de $\frac{3}{4}$: $\frac{3}{4}, \frac{6}{4}, \frac{9}{4}$

| 0 | $\frac{1}{4}$ | $\frac{2}{4}$ | $\frac{3}{4}$ | $\frac{4}{4}$ | $\frac{5}{4}$ | $\frac{6}{4}$ | $\frac{7}{4}$ | $\frac{8}{4}$ | $\frac{9}{4}$ | $\frac{10}{4}$ |
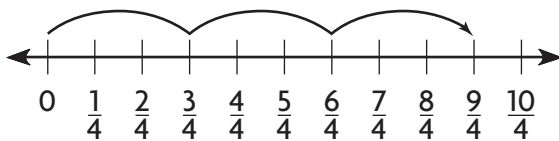
PASO 2

Escribe el múltiplo como el producto de un número entero y una fracción unitaria.

Por lo tanto, $3 \times \frac{3}{4} = \frac{9}{4} = 9 \times \frac{1}{4}$.

Pistas

Expresarlo como un número mixto

Cuando el numerador es mayor que el denominador, la fracción se puede expresar como un número mixto.

$$\frac{9}{4} = \frac{4}{4} + \frac{4}{4} + \frac{1}{4}$$
$$= 2 + \frac{1}{4}$$
$$= 2\frac{1}{4}$$

Actividad

Use situaciones de la vida diaria, como cocinar y medir para ayudar a su hijo o hija a practicar la multiplicación con fracciones.

Name _____

Multiples of Unit Fractions

Write the fraction as a product of a whole number and a unit fraction.

1. $\frac{5}{6} = $ ___$\mathbf{5 \times \frac{1}{6}}$___

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

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

4. $\frac{9}{10} = $ _____

5. $\frac{3}{4} = $ _____

6. $\frac{11}{12} = $ _____

7. $\frac{4}{6} = $ _____

8. $\frac{8}{20} = $ _____

9. $\frac{13}{100} = $ _____

List the next four multiples of the unit fraction.

10. $\frac{1}{5}$, ____, ____, ____, ____

11. $\frac{1}{8}$, ____, ____, ____, ____

Problem Solving REAL WORLD

12. So far, Monica has read $\frac{5}{6}$ of a book. She has read the same number of pages each day for 5 days. What fraction of the book does Monica read each day?

_____

13. Nicholas buys $\frac{3}{8}$ pound of cheese. He puts the same amount of cheese on 3 sandwiches. How much cheese does Nicholas put on each sandwich?

_____

Lesson Check

1. Selena walks from home to school each morning and back home each afternoon. Altogether, she walks $\frac{2}{3}$ mile each day. How far does Selena live from school?

   Ⓐ $\frac{1}{3}$ mile

   Ⓑ $\frac{2}{3}$ mile

   Ⓒ $1\frac{1}{3}$ miles

   Ⓓ 2 miles

2. Will uses $\frac{3}{4}$ cup of olive oil to make 3 batches of salad dressing. How much oil does Will use for one batch of salad dressing?

   Ⓐ $\frac{1}{4}$ cup

   Ⓑ $\frac{1}{3}$ cup

   Ⓒ $2\frac{1}{4}$ cups

   Ⓓ 3 cups

Spiral Review

3. Liza bought $\frac{5}{8}$ pound of trail mix. She gives $\frac{1}{8}$ pound of trail mix to Michael. How much trail mix does Liza have left? (Lesson 7.5)

   Ⓐ $\frac{1}{8}$ pound

   Ⓑ $\frac{2}{8}$ pound

   Ⓒ $\frac{3}{8}$ pound

   Ⓓ $\frac{4}{8}$ pound

4. Leigh has a piece of rope that is $6\frac{2}{3}$ feet long. How do you write $6\frac{2}{3}$ as a fraction greater than 1? (Lesson 7.6)

   Ⓐ $\frac{11}{3}$

   Ⓑ $\frac{15}{3}$

   Ⓒ $\frac{20}{3}$

   Ⓓ $\frac{62}{3}$

5. Randy's house number is a composite number. Which of the following could be Randy's house number? (Lesson 5.5)

   Ⓐ 29

   Ⓑ 39

   Ⓒ 59

   Ⓓ 79

6. Mindy buys 12 cupcakes. Nine of the cupcakes have chocolate frosting and the rest have vanilla frosting. What fraction of the cupcakes have vanilla frosting? (Lesson 6.3)

   Ⓐ $\frac{1}{4}$

   Ⓑ $\frac{1}{3}$

   Ⓒ $\frac{2}{3}$

   Ⓓ $\frac{3}{4}$

Name _____

Multiples of Fractions

List the next four multiples of the fraction.
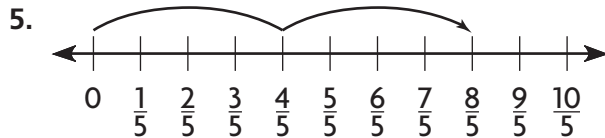
1. $\frac{3}{5}$, ____, ____, ____, ____

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

3. $\frac{4}{8}$, ____, ____, ____, ____

4. $\frac{5}{10}$, ____, ____, ____, ____

Write the product as the product of a whole number and a unit fraction.

5.

```
  0   1   2   3   4   5   6   7   8   9   10
      5   5   5   5   5   5   5   5   5
```

$2 \times \frac{4}{5} =$ _____

6.

```
  0   1   2   3   4   5   6   7   8   9   10
      3   3   3   3   3   3   3   3   3
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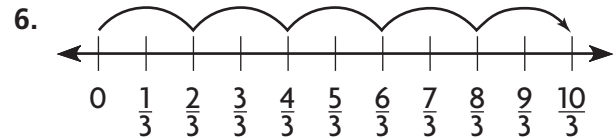
$5 \times \frac{2}{3} =$ _____

Problem Solving REAL WORLD

7. Jessica is making 2 loaves of banana bread. She needs $\frac{3}{4}$ cup of sugar for each loaf. Her measuring cup can only hold $\frac{1}{4}$ cup of sugar. How many times will Jessica need to fill the measuring cup in order to get enough sugar for both loaves of bread?

_____

8. A group of four students is performing an experiment with salt. Each student must add $\frac{3}{8}$ teaspoon of salt to a solution. The group only has a $\frac{1}{8}$-teaspoon measuring spoon. How many times will the group need to fill the measuring spoon in order to perform the experiment?

_____

Lesson Check

1. Eloise made a list of some multiples of $\frac{5}{8}$. Which of the following lists could be Eloise's list?

(A) $\frac{5}{8}, \frac{10}{16}, \frac{15}{24}, \frac{20}{32}, \frac{25}{40}$

(B) $\frac{5}{8}, \frac{10}{8}, \frac{15}{8}, \frac{20}{8}, \frac{25}{8}$

(C) $\frac{5}{8}, \frac{6}{8}, \frac{7}{8}, \frac{8}{8}, \frac{9}{8}$

(D) $\frac{1}{8}, \frac{2}{8}, \frac{3}{8}, \frac{4}{8}, \frac{5}{8}$

2. David is filling five $\frac{3}{4}$-quart bottles with a sports drink. His measuring cup only holds $\frac{1}{4}$ quart. How many times will David need to fill the measuring cup in order to fill the 5 bottles?

(A) 5

(B) 10

(C) 15

(D) 20

Spiral Review

3. Ira has 128 stamps in his stamp album. He has the same number of stamps on each of the 8 pages. How many stamps are on each page? **(Lesson 4.11)**

(A) 12

(B) 14

(C) 16

(D) 18

4. Ryan is saving up for a bike that costs $198. So far, he has saved $15 per week for the last 12 weeks. How much more money does Ryan need in order to be able to buy the bike? **(Lesson 3.7)**

(A) $8

(B) $18

(C) $48

(D) $180

5. Tina buys $3\frac{7}{8}$ yards of material at the fabric store. She uses it to make a skirt. Afterward, she has $1\frac{3}{8}$ yards of the fabric leftover. How many yards of material did Tina use? **(Lesson 7.7)**

(A) $1\frac{4}{8}$ yards

(B) $2\frac{1}{8}$ yards

(C) $2\frac{4}{8}$ yards

(D) $5\frac{2}{8}$ yards

6. Which list shows the fractions in order from **least** to **greatest**? **(Lesson 6.8)**

(A) $\frac{2}{3}, \frac{3}{4}, \frac{7}{12}$

(B) $\frac{7}{12}, \frac{3}{4}, \frac{2}{3}$

(C) $\frac{3}{4}, \frac{2}{3}, \frac{7}{12}$

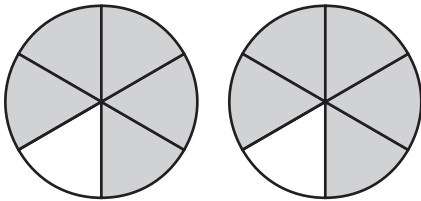(D) $\frac{7}{12}, \frac{2}{3}, \frac{3}{4}$

Name _____

Multiply a Fraction by a Whole Number Using Models

Multiply.

1. $2 \times \frac{5}{6} = \underline{\frac{10}{6}}$

2. $3 \times \frac{2}{5} = \underline{\hspace{2cm}}$

3. $7 \times \frac{3}{10} = \underline{\hspace{2cm}}$

4. $3 \times \frac{5}{12} = \underline{\hspace{2cm}}$

5. $6 \times \frac{3}{4} = \underline{\hspace{2cm}}$

6. $4 \times \frac{2}{8} = \underline{\hspace{2cm}}$

7. $5 \times \frac{2}{3} = \underline{\hspace{2cm}}$

8. $2 \times \frac{7}{8} = \underline{\hspace{2cm}}$

9. $6 \times \frac{4}{5} = \underline{\hspace{2cm}}$

Problem Solving REAL WORLD

10. Matthew walks $\frac{5}{8}$ mile to the bus stop each morning. How far will he walk in 5 days?

11. Emily uses $\frac{2}{3}$ cup of milk to make one batch of muffins. How many cups of milk will Emily use if she makes 3 batches of muffins?

Lesson Check

1. Aleta's puppy gained $\frac{3}{8}$ pound each week for 4 weeks. Altogether, how much weight did the puppy gain during the 4 weeks?

Ⓐ $\frac{8}{12}$ pound

Ⓑ $1\frac{2}{8}$ pounds

Ⓒ $\frac{12}{8}$ pounds

Ⓓ $4\frac{3}{8}$ pounds

2. Pedro mixes $\frac{3}{4}$ teaspoon of plant food into each gallon of water. How many teaspoons of plant food should Pedro mix into 5 gallons of water?

Ⓐ $\frac{3}{20}$ teaspoon

Ⓑ $\frac{4}{15}$ teaspoon

Ⓒ $\frac{8}{4}$ teaspoons

Ⓓ $\frac{15}{4}$ teaspoons

Spiral Review

3. Ivana has $\frac{3}{4}$ pound of hamburger meat. She makes 3 hamburger patties. Each patty weighs the same amount. How much does each hamburger patty weigh? **(Lesson 8.1)**

Ⓐ $\frac{1}{4}$ pound

Ⓑ $\frac{1}{3}$ pound

Ⓒ $2\frac{1}{4}$ pounds

Ⓓ 3 pounds

4. Which of the following expressions is NOT equal to $\frac{7}{10}$? **(Lesson 7.2)**

Ⓐ $\frac{5}{10} + \frac{1}{10} + \frac{1}{10}$

Ⓑ $\frac{2}{10} + \frac{2}{10} + \frac{3}{10}$

Ⓒ $\frac{3}{10} + \frac{3}{10} + \frac{2}{10}$

Ⓓ $\frac{4}{10} + \frac{2}{10} + \frac{1}{10}$

5. Lance wants to find the total length of 3 boards. He uses the expression $3\frac{1}{2} + \left(2 + 4\frac{1}{2}\right)$. How can Lance rewrite the expression using both the Associative and Commutative Properties of Addition? **(Lesson 7.9)**

Ⓐ $5 + 4\frac{1}{2}$

Ⓑ $\left(3\frac{1}{2} + 2\right) + 4\frac{1}{2}$

Ⓒ $2 + \left(3\frac{1}{2} + 4\frac{1}{2}\right)$

Ⓓ $3\frac{1}{2} + \left(4\frac{1}{2} + 2\right)$

6. Which of the following statements is true? **(Lesson 6.6)**

Ⓐ $\frac{5}{8} > \frac{9}{10}$

Ⓑ $\frac{5}{12} > \frac{1}{3}$

Ⓒ $\frac{3}{6} > \frac{4}{5}$

Ⓓ $\frac{1}{2} > \frac{3}{4}$

Name _____

Multiply a Fraction or Mixed Number by a Whole Number

Multiply. Write the product as a mixed number.

1. $5 \times \dfrac{3}{10} = \underline{\quad 1\dfrac{5}{10} \quad}$

2. $3 \times \dfrac{3}{5} = \underline{\qquad}$

3. $5 \times \dfrac{3}{4} = \underline{\qquad}$

4. $4 \times 1\dfrac{1}{5} = \underline{\qquad}$

5. $2 \times 2\dfrac{1}{3} = \underline{\qquad}$

6. $5 \times 1\dfrac{1}{6} = \underline{\qquad}$

7. $2 \times 2\dfrac{7}{8} = \underline{\qquad}$

8. $7 \times 1\dfrac{3}{4} = \underline{\qquad}$

9. $8 \times 1\dfrac{3}{5} = \underline{\qquad}$

Problem Solving REAL WORLD

10. Brielle exercises for $\dfrac{3}{4}$ hour each day for 6 days in a row. Altogether, how many hours does she exercise during the 6 days?

11. A recipe for quinoa calls for $2\dfrac{2}{3}$ cups of milk. Conner wants to make 4 batches of quinoa. How much milk does he need?

_____

_____

Lesson Check

1. A mother is $1\frac{3}{4}$ times as tall as her son. Her son is 3 feet tall. How tall is the mother?

Ⓐ $4\frac{3}{4}$ feet

Ⓑ $5\frac{1}{4}$ feet

Ⓒ $5\frac{1}{2}$ feet

Ⓓ $5\frac{3}{4}$ feet

2. The cheerleaders are making a banner that is 8 feet wide. The length of the banner is $1\frac{1}{3}$ times the width of the banner. How long is the banner?

Ⓐ $8\frac{1}{3}$ feet

Ⓑ $8\frac{3}{8}$ feet

Ⓒ $10\frac{1}{3}$ feet

Ⓓ $10\frac{2}{3}$ feet

Spiral Review

3. Karleigh walks $\frac{5}{8}$ mile to school every day. How far does she walk to school in 5 days? **(Lesson 8.3)**

Ⓐ $\frac{5}{40}$ mile

Ⓑ $\frac{25}{40}$ mile

Ⓒ $\frac{10}{8}$ miles

Ⓓ $\frac{25}{8}$ miles

4. Which number is a multiple of $\frac{4}{5}$? **(Lesson 8.2)**

Ⓐ $\frac{8}{10}$

Ⓑ $\frac{12}{15}$

Ⓒ $\frac{16}{20}$

Ⓓ $\frac{12}{5}$

5. Jo cut a key lime pie into 8 equal-size slices. The next day, $\frac{7}{8}$ of the pie is left. Jo puts each slice on its own plate. How many plates does she need? **(Lesson 8.1)**

Ⓐ 5

Ⓑ 6

Ⓒ 7

Ⓓ 8

6. Over the weekend, Ed spent $1\frac{1}{4}$ hours doing his math homework and $1\frac{3}{4}$ hours doing his science project. Altogether, how much time did Ed spend doing homework over the weekend? **(Lesson 7.7)**

Ⓐ 3 hours

Ⓑ $2\frac{3}{4}$ hours

Ⓒ $2\frac{1}{2}$ hours

Ⓓ 2 hours

Name _____

Problem Solving • Comparison Problems with Fractions

Read each problem and solve.

1. A shrub is $1\frac{2}{3}$ feet tall. A small tree is 3 times as tall as the shrub. How tall is the tree?

t is the height of the tree, in feet.

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

$t = 3 \times \frac{5}{3}$

$t = \frac{15}{3}$

$t = 5$

So, the tree is 5 feet tall.

shrub	$1\frac{2}{3}$		
tree	$1\frac{2}{3}$	$1\frac{2}{3}$	$1\frac{2}{3}$

__**5 feet**__

2. You run $1\frac{3}{4}$ miles each day. Your friend runs 4 times as far as you do. How far does your friend run each day?

_____

3. At the grocery store, Ayla buys $1\frac{1}{3}$ pounds of ground turkey. Tasha buys 2 times as much ground turkey as Ayla. How much ground turkey does Tasha buy?

_____

4. When Nathan's mother drives him to school, it takes $\frac{1}{5}$ hour. When Nathan walks to school, it takes him 4 times as long to get to school. How long does it take Nathan to walk to school?

_____

Lesson Check

1. A Wilson's Storm Petrel is a small bird with a wingspan of $1\frac{1}{3}$ feet. A California Condor is a larger bird with a wingspan almost 7 times as wide as the wingspan of the petrel. About how wide is the wingspan of the California Condor?

  Ⓐ $\frac{4}{21}$ foot

  Ⓑ $2\frac{1}{3}$ feet

  Ⓒ $7\frac{1}{3}$ feet

  Ⓓ $9\frac{1}{3}$ feet

2. The walking distance from the Empire State Building in New York City to Times Square is about $\frac{9}{10}$ mile. The walking distance from the Empire State Building to Sue's hotel is about 8 times as far. About how far is Sue's hotel from the Empire State Building?

  Ⓐ $\frac{9}{80}$ mile

  Ⓑ $\frac{72}{80}$ mile

  Ⓒ $1\frac{7}{10}$ miles

  Ⓓ $7\frac{2}{10}$ miles

Spiral Review

3. Which of the following expressions is NOT equal to $3 \times 2\frac{1}{4}$? **(Lesson 8.4)**

  Ⓐ $3 \times \frac{9}{4}$

  Ⓑ $(3 \times 2) + \left(3 \times \frac{1}{4}\right)$

  Ⓒ $6\frac{3}{4}$

  Ⓓ $3 \times 2 + \frac{1}{4}$

4. At a bake sale, Ron sells $\frac{7}{8}$ of an apple pie and $\frac{5}{8}$ of a cherry pie. Altogether, how much pie does he sell at the bake sale? **(Lesson 7.5)**

  Ⓐ $\frac{2}{8}$

  Ⓑ $\frac{12}{16}$

  Ⓒ $\frac{12}{8}$

  Ⓓ $\frac{35}{8}$

5. On a ruler, which measurement is between $\frac{3}{16}$ inch and $\frac{7}{8}$ inch? **(Lesson 6.8)**

  Ⓐ $\frac{1}{16}$ inch   Ⓒ $\frac{11}{16}$ inch

  Ⓑ $\frac{1}{8}$ inch   Ⓓ $\frac{15}{16}$ inch

6. Which of the following numbers is composite? **(Lesson 5.5)**

  Ⓐ 4   Ⓒ 2

  Ⓑ 3   Ⓓ 1

Name _____

Chapter 8 Extra Practice

Lesson 8.1

Write the fraction as a product of a whole number and a unit fraction.

1. $\dfrac{5}{6} =$ _____

2. $\dfrac{7}{8} =$ _____

3. $\dfrac{3}{5} =$ _____

List the next four multiples of the unit fraction.

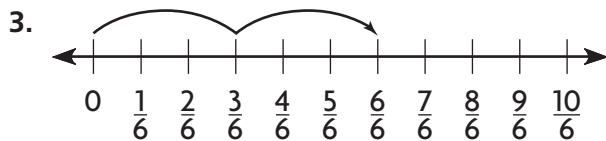**4.** $\dfrac{1}{2}$, ____, ____, ____, ____

5. $\dfrac{1}{6}$, ____, ____, ____, ____

Lesson 8.2

List the next four multiples of the fraction.

1. $\dfrac{3}{10}$, ____, ____, ____, ____

2. $\dfrac{7}{12}$, ____, ____, ____, ____

Write the product as the product of a whole number and a unit fraction.

3.

$2 \times \dfrac{3}{6} =$ _____

4.
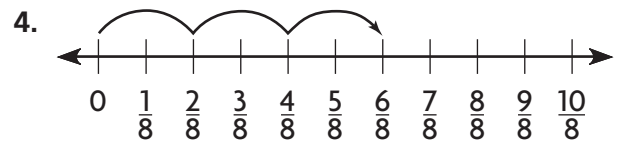
$3 \times \dfrac{2}{8} =$ _____

Lesson 8.3

Multiply.

1. $3 \times \dfrac{7}{10} =$ _____

2. $5 \times \dfrac{4}{8} =$ _____

3. $4 \times \dfrac{6}{12} =$ _____

4. $2 \times \dfrac{3}{4} =$ _____

5. $6 \times \dfrac{3}{5} =$ _____

6. $7 \times \dfrac{2}{10} =$ _____

Lesson 8.4

Multiply. Write the product as a mixed number.

1. $4 \times \dfrac{8}{10} =$ _____

2. $3 \times \dfrac{5}{6} =$ _____

3. $2 \times 3\dfrac{1}{3} =$ _____

4. $4 \times 2\dfrac{2}{5} =$ _____

5. $5 \times 1\dfrac{7}{8} =$ _____

6. $3 \times 3\dfrac{3}{4} =$ _____

Lesson 8.5

1. A shrub in Pam's back yard is about $1\dfrac{3}{8}$ feet tall. A small tree in her back yard is 7 times as tall as the shrub. About how tall is the tree?

_____

2. A puppy weighs $\dfrac{9}{10}$ pound. Its mother weighs 8 times as much. How much does the mother weigh?

_____