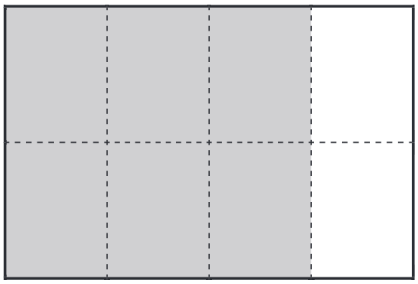
Discuss

Common fractions: Reviewing equivalent fractions (related denominators)

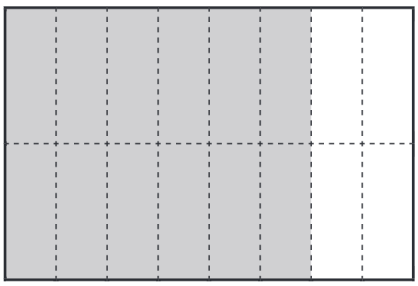
This rectangular garden bed is split into equal parts. The shaded part of this diagram shows how much of the garden has been planted.



Write the fraction of the garden that has been planted.

$\frac{\quad}{\quad}$

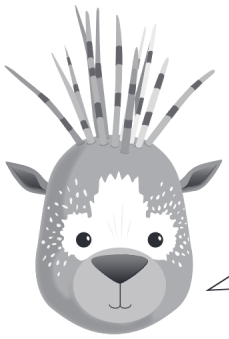
The same garden is now split into a different number of equal parts and the same amount of the garden has been planted.



Write the fraction of the garden that has been planted.

$\frac{\quad}{\quad}$

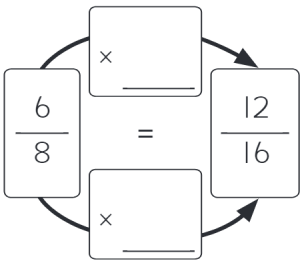
Look at the two fractions you wrote. What do you notice?



I can see that the value of the denominator in the second fraction is double the value of the denominator in the first fraction. The value of the numerator is also double.

Fractions are **equivalent** if they cover the same area of each shape.

Complete this diagram to show how the fractions are related.



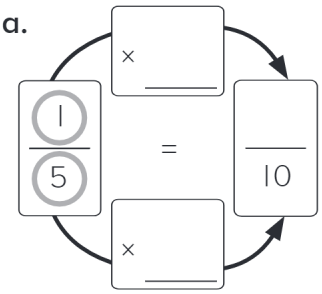
This activity reviews the relationship between the numerators and denominators of equivalent fractions.

Practice

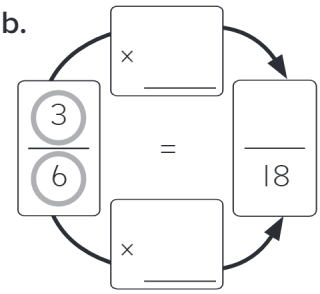
Common fractions: Reviewing equivalent fractions (related denominators)

1. Complete these to show equivalent fractions.

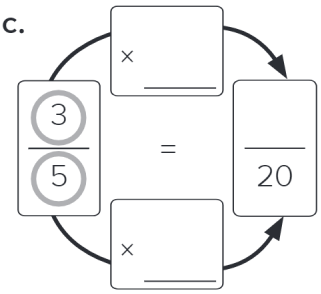
a.



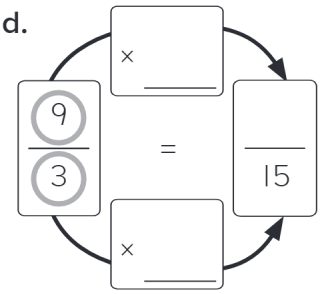
b.



c.



d.

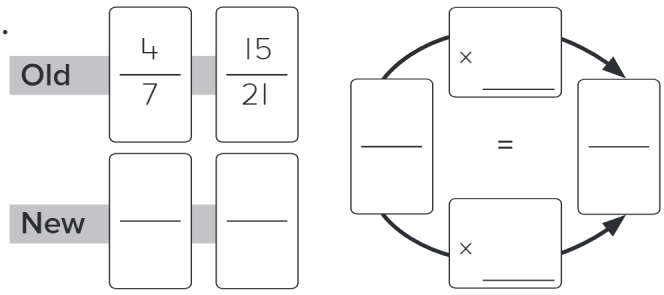


2. For each of these, write the fraction and then write four fractions that are equivalent.

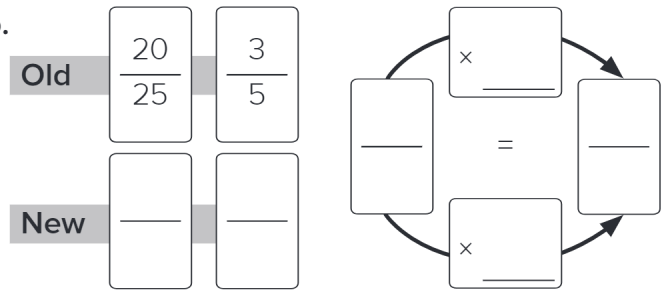
a. four-sixths	___	___	___	___	___
b. seven-fourths	___	___	___	___	___
c. twenty-eighths	___	___	___	___	___

3. Change one fraction in each pair so that they have the same denominator. Then rewrite the fractions.

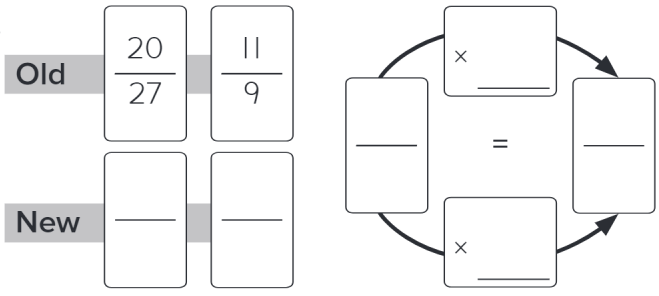
a.



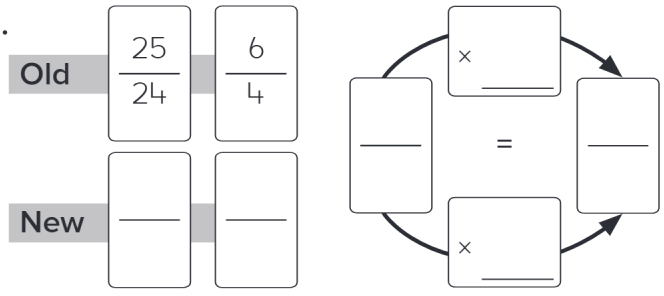
b.



c.



d.



This activity reviews the relationship between the numerators and denominators of equivalent fractions.

Discuss

Common fractions: Reviewing equivalent fractions (related and unrelated denominators)

These two strips are from a multiplication chart.

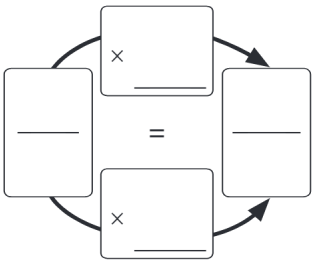
4	8	12	16	20	24	28	32	36	40
6	12	18	24	30	36	42	48	54	60

Look at the first number in each strip.
Together, these numbers form the fraction $\frac{4}{6}$.

Write two other fractions that the two strips show. ____ ____

Look at the two fractions you wrote. What do you notice?

The fractions are related because the denominators are both multiples of 6. Complete this diagram to show how $\frac{4}{6}$ and $\frac{36}{54}$ are related.



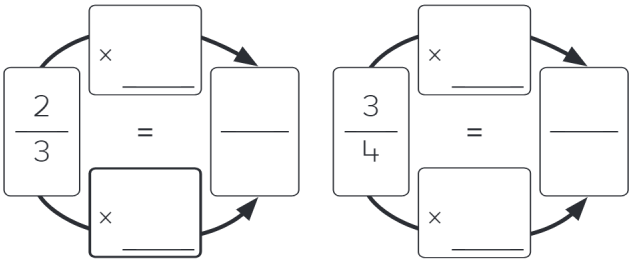
Think about the fractions $\frac{2}{3}$ and $\frac{3}{4}$.

What is a denominator they have in common?

Try multiplying the denominators together.

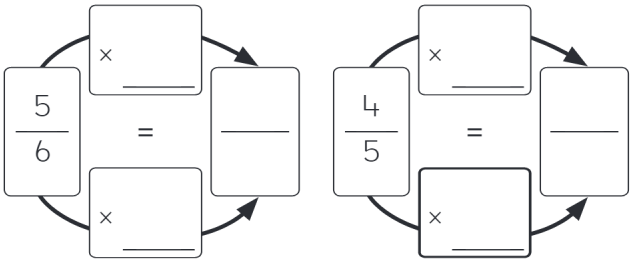
Complete the diagram.

Circle the fraction that is greater.



Complete the diagram to compare the fractions $\frac{5}{6}$ and $\frac{4}{5}$.

Circle the fraction that is greater.



This activity reinforces the relationship between the numerators and denominators of equivalent fractions by using rows of a multiplication chart. It also shows that the denominators of two unrelated fractions can be multiplied together to find a denominator they have in common.

Practice

Common fractions: Reviewing equivalent fractions (related and unrelated denominators)

1. For each pair of fractions, write equivalent fractions that have denominators the same. Write the missing factors to show your thinking.

a. $\frac{3}{8} = \frac{\square}{24}$ $\quad \frac{4}{6} = \frac{\square}{24}$

b. $\frac{4}{5} = \frac{\square}{35}$ $\quad \frac{5}{7} = \frac{\square}{35}$

c. $\frac{3}{4} = \frac{\square}{16}$ $\quad \frac{2}{8} = \frac{\square}{16}$

d. $\frac{3}{9} = \frac{\square}{45}$ $\quad \frac{4}{5} = \frac{\square}{45}$

e. $\frac{2}{3} = \frac{\square}{\square}$ $\quad \frac{4}{7} = \frac{\square}{\square}$

f. $\frac{4}{6} = \frac{\square}{\square}$ $\quad \frac{3}{4} = \frac{\square}{\square}$

2. Change both fractions so the denominators are the same.

a. $\frac{1}{3} = \frac{\square}{\square}$ $\quad \frac{1}{2} = \frac{\square}{\square}$

b. $\frac{2}{3} = \frac{\square}{\square}$ $\quad \frac{1}{4} = \frac{\square}{\square}$

c. $\frac{4}{3} = \frac{\square}{\square}$ $\quad \frac{2}{6} = \frac{\square}{\square}$

d. $\frac{4}{5} = \frac{\square}{\square}$ $\quad \frac{6}{12} = \frac{\square}{\square}$

e. $\frac{6}{7} = \frac{\square}{\square}$ $\quad \frac{5}{6} = \frac{\square}{\square}$

f. $\frac{9}{5} = \frac{\square}{\square}$ $\quad \frac{9}{6} = \frac{\square}{\square}$

g. $\frac{5}{9} = \frac{\square}{\square}$ $\quad \frac{2}{3} = \frac{\square}{\square}$

h. $\frac{6}{4} = \frac{\square}{\square}$ $\quad \frac{7}{5} = \frac{\square}{\square}$

i. $\frac{8}{6} = \frac{\square}{\square}$ $\quad \frac{7}{4} = \frac{\square}{\square}$

3. Look at the fractions in Questions 1 and 2 above. Circle the greater fraction in each pair.

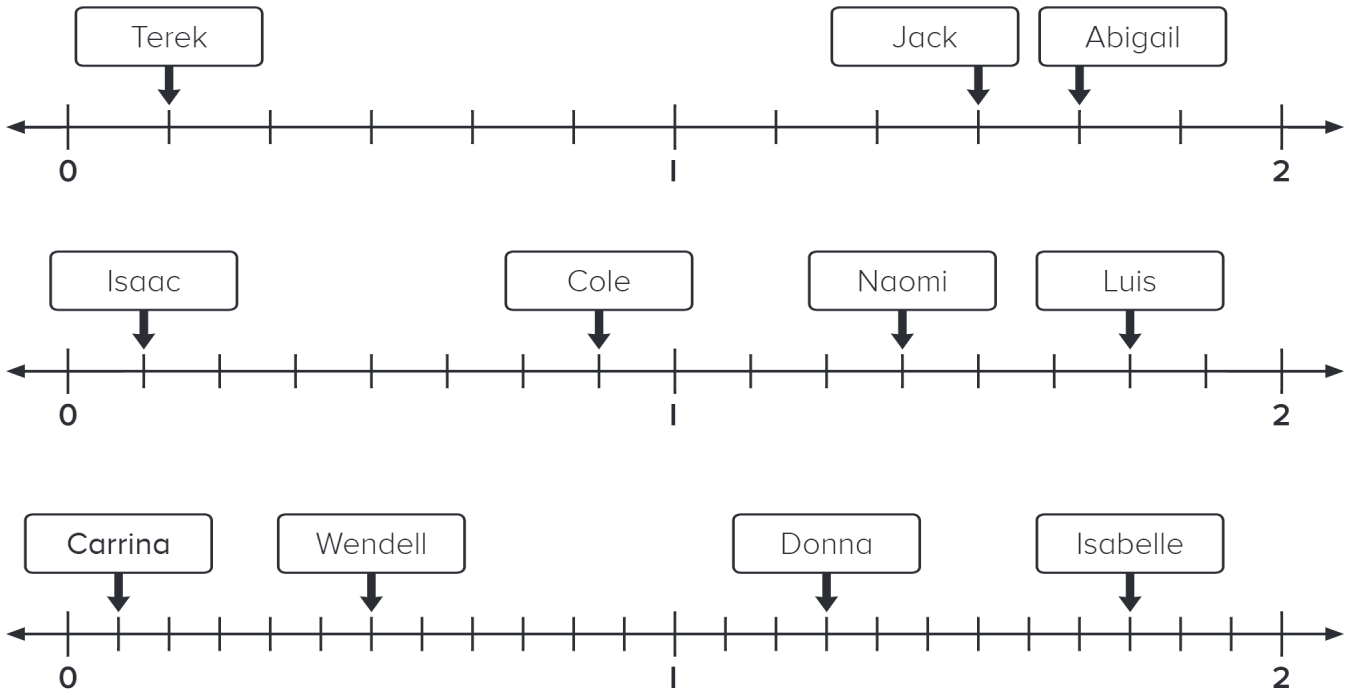
This activity reinforces the relationship between the numerators and denominators of equivalent fractions and shows that the denominators of two unrelated fractions can be multiplied together to find a denominator they have in common.

Discuss

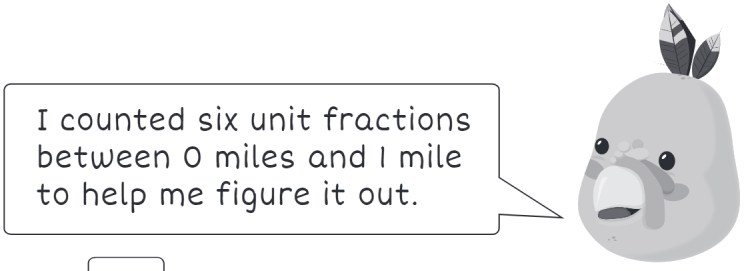
Common fractions: Reviewing the relationship with mixed numbers

On each number line, the distance from 0 to 1 represents one mile.

These students each marked the distance they live from school on the number lines below.



What distance did Terek record? ___ mile



Write the distance that Cole recorded as a fraction. ___ mile

Write the names of the 3 students who live the closest to the school.

_____ _____ _____

Look at the distance Donna lives from school.

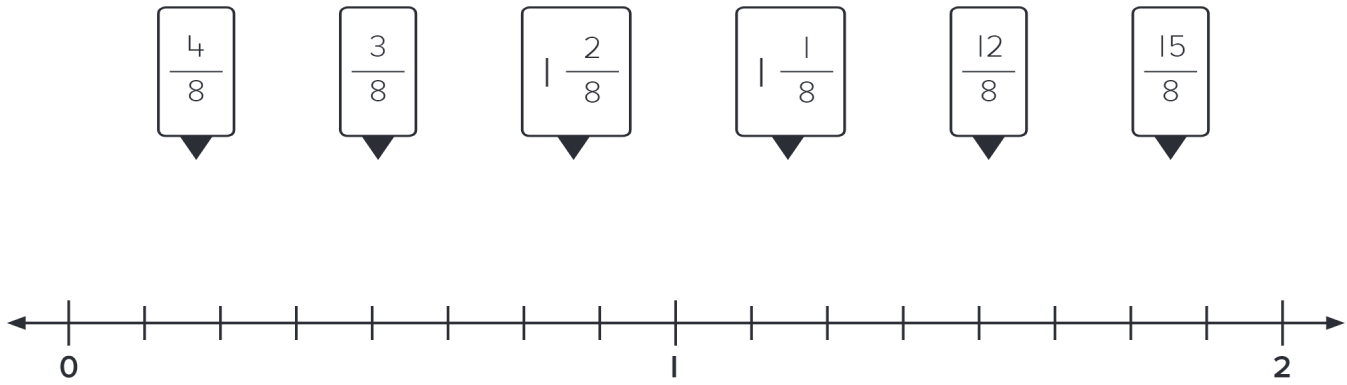
Write this distance as a mixed number. ____ miles

This activity reviews common fractions and mixed numbers by interpreting distance on a number line. It is very important that new ideas in mathematics are linked to real-world contexts, in this case, distance.

Practice

Common fractions: Reviewing the relationship with mixed numbers

1. Draw a line to join each fraction and mixed number to its position on the number line.



2. Compare the fractions in each pair. Then circle the fraction that is greater.
Use the number lines above each set to help your thinking.

a. $\frac{4}{3}$ or $1\frac{2}{3}$

b. $1\frac{1}{3}$ or $\frac{6}{3}$

c. $\frac{10}{3}$ or $2\frac{2}{3}$

d. $\frac{9}{8}$ or $1\frac{2}{8}$

e. $1\frac{1}{8}$ or $\frac{11}{8}$

f. $\frac{16}{8}$ or $1\frac{7}{8}$

This activity reviews common fractions and mixed numbers by interpreting distance on a number line.

Discuss

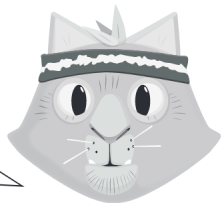
Common fractions: Converting improper fractions to mixed numbers

A cornbread recipe needs $\frac{3}{4}$ cup of flour for one batch.

Seven batches will need $7 \times \frac{3}{4}$ cup or $\frac{21}{4}$ cups.

How can you figure out the number of whole cups of flour needed for seven batches?

I know that 4 one-fourths makes one whole, and 8 one-fourths makes two wholes. I need to find out how many wholes I can make with 21 one-fourths.



Write $\frac{21}{4}$ as a mixed number. $\frac{21}{4}$ **is equivalent to** ☐

A carrot cake recipe needs $\frac{2}{3}$ cup of chopped walnuts.

Figure out how many cups of walnuts are needed for 7 cakes.

Write the answer in the diagram as an improper fraction and then as a mixed number.

☐ **is equivalent to** ☐ cups

Write this improper fraction as a mixed number. Show your thinking.

$\frac{45}{8}$ **is equivalent to** ☐

This activity reviews how to convert improper fractions to mixed numbers. An improper fraction has a numerator that is greater than its denominator. In this activity, cooking is used as the context to reinforce the importance of fractions and their use in the real world.

Practice

Common fractions: Converting improper fractions to mixed numbers

1. Write each improper fraction as a mixed number. Show your thinking.

a. $\frac{8}{3}$ is equivalent to ☐

b. $\frac{7}{2}$ is equivalent to ☐

c. $\frac{10}{3}$ is equivalent to ☐

d. $\frac{20}{9}$ is equivalent to ☐

e. $\frac{18}{5}$ is equivalent to ☐

f. $\frac{25}{7}$ is equivalent to ☐

g. $\frac{33}{6}$ is equivalent to ☐

h. $\frac{47}{11}$ is equivalent to ☐

2. Read each problem and write the total as a **mixed number**. Show your thinking.

a. One box weighs $\frac{3}{4}$ pound. Five of those boxes weigh $\frac{15}{4}$ pounds in total.

☐ lb

b. One hair ribbon is $\frac{5}{6}$ of a yard long. To make 8 ribbons, $\frac{40}{6}$ yd of ribbon is needed.

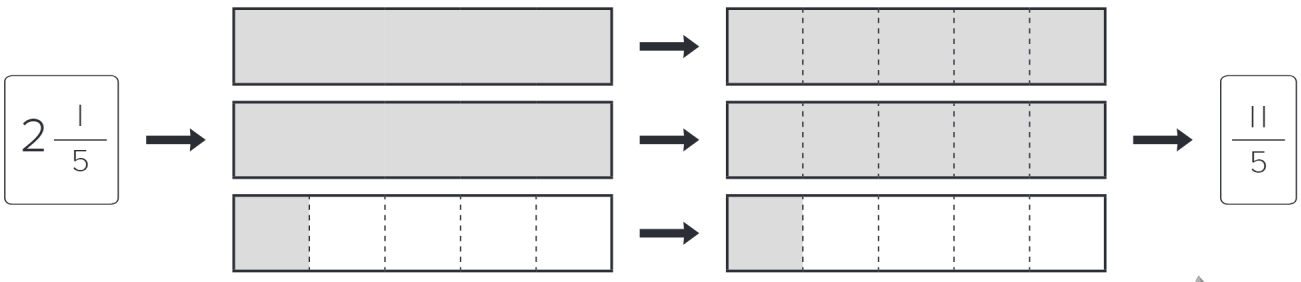
☐ yd

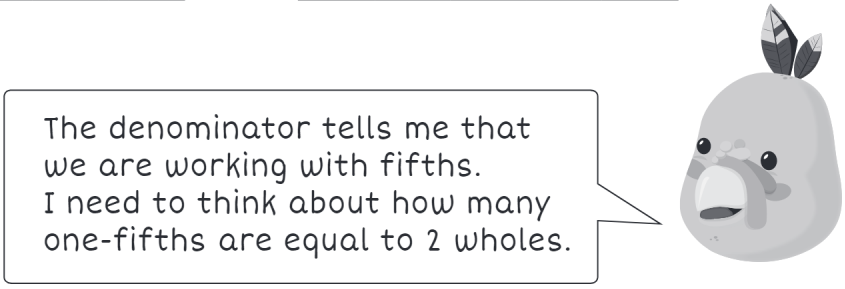
This activity focuses on converting improper fractions to mixed numbers. An improper fraction has a numerator that is greater than its denominator.

Discuss

Common fractions: Converting mixed numbers to improper fractions

Andre used a diagram to show how to change $2\frac{1}{5}$ to an improper fraction.





Luke showed his thinking like this.

$2\frac{1}{5} \rightarrow 2+\frac{1}{5} \rightarrow 1+1+\frac{1}{5} \rightarrow \frac{5}{5}+\frac{5}{5}+\frac{1}{5} \rightarrow \frac{10}{5}+\frac{1}{5} \rightarrow \frac{11}{5}$

Giselle showed her thinking like this.

$2\frac{1}{5} \rightarrow 2+\frac{1}{5} \rightarrow \frac{2\times 5}{5}+\frac{1}{5} \rightarrow \frac{10}{5}+\frac{1}{5} \rightarrow \frac{11}{5}$

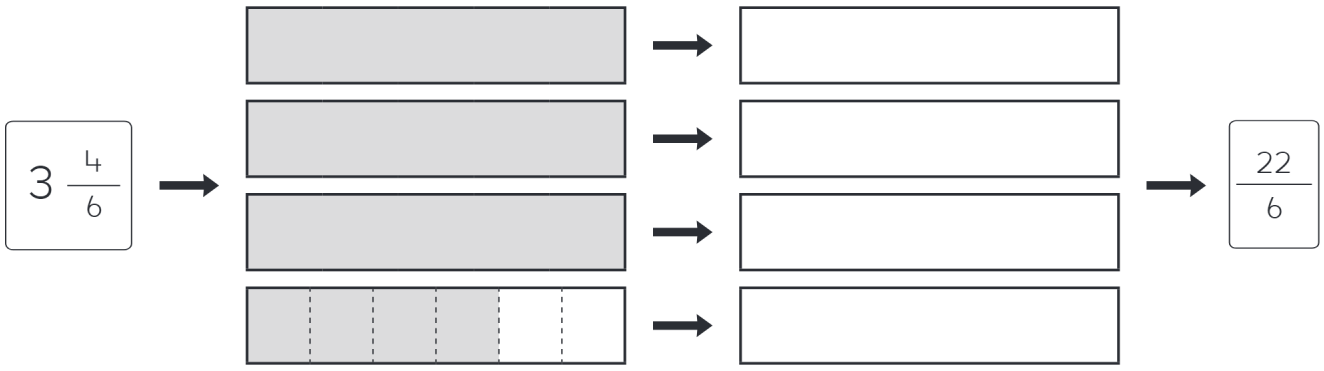
Use Luke's or Giselle's method to change $3\frac{3}{4}$ to an improper fraction. Show your thinking.

Fractions strips are used in this activity to show how mixed numbers can be converted to improper fractions. The relationship between whole numbers and fractions is also reinforced.

Practice

Common fractions: Converting mixed numbers to improper fractions

1. Adjust this picture to show how $3\frac{4}{6}$ is equivalent to $\frac{22}{6}$.



2. Write each mixed number as an improper fraction. Show your thinking.

a. $6\frac{3}{5}$ is equivalent to ____

b. $5\frac{2}{3}$ is equivalent to ____

c. $3\frac{4}{9}$ is equivalent to ____

d. $7\frac{4}{6}$ is equivalent to ____

e. $3\frac{2}{8}$ is equivalent to ____

Fractions strips are used in this activity to show how mixed numbers can be converted to improper fractions. The relationship between whole numbers and fractions is also reinforced.

Discuss

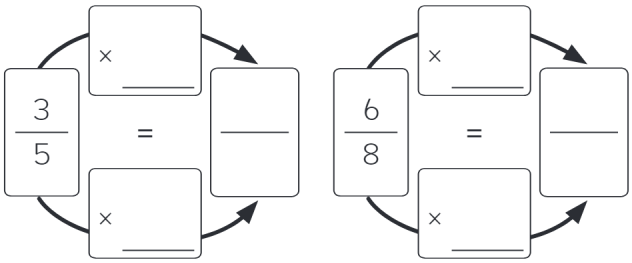
Common fractions: Solving word problems

Two students compare the distance they run each day.
Deana runs $\frac{3}{5}$ of a mile every day. Richard runs $\frac{6}{8}$ of a mile each day.
Who runs the greater distance?

To compare the two fractions, I need to find a denominator that they each share.

Write the denominator the two fractions have in common. ____

Complete the diagram below to help compare the two fractions.



Who ran farther each day? ____

Solve each problem. Show your thinking.

a. In one day, Hailey drinks $\frac{5}{6}$ of a quart of water and Marcos drinks $\frac{6}{8}$ of a quart. Who drinks less water?

____

b. Box A contains 5 books which weigh $\frac{1}{3}$ lb each. Box B weighs 1 $\frac{3}{4}$ lb. Which box is heavier?

____

This activity practices interpreting and solving word problems, involving the comparison of two or more common fractions. Encourage your child to use a range of strategies to make their comparisons.

Practice

Common fractions: Solving word problems

1. Solve each problem. Show your thinking.

a. Katherine wins some money. She gives $\frac{4}{7}$ of it to her brother, and $\frac{1}{3}$ to a friend. Who received more money?

b. Two cars start with a full tank of gas. After two days, Car A has used $\frac{4}{7}$ of its tank and Car B has used $\frac{3}{8}$ of its tank. Which car used less gas?

c. Samuel uses a total of $\frac{11}{4}$ cups of milk in his daily cups of coffee. Sara uses $\frac{1}{5}$ cup of milk in each cup. She drinks 5 cups of coffee. Who uses more milk each day?

d. Two students are at swimming practice 4 days each week. Mana swims $\frac{7}{3}$ miles in total. Cooper swims $\frac{3}{5}$ mile each day. Who swims the shorter distance?

2. Write a comparison word problem using different denominators. Then solve the problem. Show your thinking.

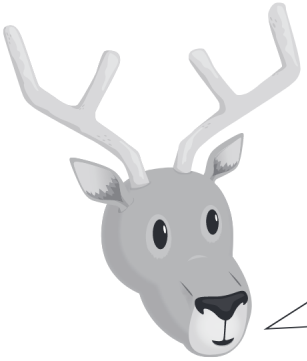
This activity practices interpreting and solving word problems, involving the comparison of two or more common fractions. Encourage your child to use a range of strategies to make their comparisons.

Discuss

Length: Converting between inches and feet

Four friends marked their heights on a wall.

How could you convert each of these heights into inches?



It is difficult to convert lengths like 4.8 feet to inches. I would need to use a calculator for that.

Gemma	4.8 feet
Richardo	4.5 feet
Jessica	4.25 feet
James	4 feet

Write numbers in this table to show equivalent lengths. The first one has been done for you.

Inches	Feet (Mixed Number)	Feet (Decimal Fraction)
18	$1\frac{1}{2}$	1.5
27		
	$3\frac{3}{4}$	
68		
	$5\frac{5}{6}$	
100		

Convert inches to feet and inches to complete these.

a.

31 inches = _____ ft _____ in

b.

41 inches = _____ ft _____ in

This activity reinforces the relationship between feet and inches by converting between the units. Lengths are recorded in feet using mixed numbers and decimal fractions, in inches, and in feet and inches.

Practice

Length: Converting between inches and feet

1. Convert inches into feet to complete these.

a. 36 inches = ____ ft ____ in	**b.** 22 inches = ____ ft ____ in
c. 30 inches = ____ ft ____ in	**d.** 15 inches = ____ ft ____ in
e. 25 inches = ____ ft ____ in	**f.** 50 inches = ____ ft ____ in

2. Convert feet to inches to complete these. Show your thinking.

a. 2.75 ft = ____ in	**b.** 5.25 ft = ____ in	**c.** 3.5 ft = ____ in
d. $6\frac{1}{4}$ ft = ____ in	**e.** $5\frac{2}{4}$ ft = ____ in	**f.** $8\frac{4}{8}$ ft = ____ in

3. Solve each problem. Show your thinking.

a. Mary has grown 5 inches during the past year and she is now 59 inches tall. How tall was Mary last year? ____ feet ____ inches	**b.** A tree was 3.25 feet tall and has grown 7.25 feet. How tall is the tree now? ____ feet ____ inches

This activity reinforces the relationship between feet and inches by converting between the units. Lengths are recorded in feet using mixed numbers and decimal fractions, in inches, and in feet and inches.

Discuss

Length: Converting customary units

In a game of football, one team made 5 yards on the first down, 12 feet on the second down, and $3\frac{1}{3}$ yards on the third down.

How would you figure out whether more ground was made on the first or second down?

Write the missing numbers in this table.

Yards	Feet
3	
	18
	25

What do you know about the relationship between yards and miles?

1,760 yards is equivalent to 1 mile.

How many yards are equivalent to a quarter of a mile?
How do you know?

How could you calculate the number of yards that are equivalent to $1\frac{1}{2}$ miles?

Write the missing numbers in this table.

Miles	Yards
2	
	17,600
	5,280

This activity reinforces the relationship between yards, feet, and inches by converting between the units. Lengths are recorded as whole or mixed numbers.

Practice

Length: Converting customary units

1. Write the missing lengths in these tables.

a.

Feet	3		6.5		12	
Inches		6		93		180

b.

Yards	7		15		22	
Feet		36		57		76

2. Solve each problem. Show your thinking.

a. Chang's SUV is $5\frac{1}{3}$ yards long. The difference between the length and width is 7 feet. How wide is his SUV?

_____ yards

b. The width of a small car is equivalent to its height. The length is equal to the total of the width and height. If the width is 48 inches, what is its length?

_____ feet

c. Valentina pole vaulted 5.5 yards. Noah vaulted 18 feet and won the event. By how much did he win?

_____ feet

d. Ryan threw his javelin 207 feet. Arianna threw her javelin 67.5 yards. Who won the event?

_____

This activity reinforces the relationship between yards, feet, and inches by converting between the units. Lengths are recorded as whole or mixed numbers.

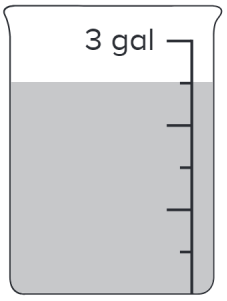
Discuss

Capacity: Converting customary units

How much liquid is in this container?

How could you write the amount in quarts?

There are 4 quarts in 1 gallon. So the amount in quarts is equal to $4 \times 2\frac{1}{2}$.



Complete these statements.

2	quarts	is equivalent to	___	gallon	or	0.5 gallon.
1	quarts	is equivalent to	___	gallon	or	_____ gallon.
_____	quarts	is equivalent to	___	gallon	or	0.75 gallon.
7	quarts	is equivalent to		gallon	or	_____ gallon.

How many fluid ounces would you add to fill the container up to 3 gallons?

There are 32 fluid ounces in 1 quart. I would need 2 more quarts to fill the container, which is equal to 64 fluid ounces.

16	fluid ounces	is equivalent to	___	quart	or	0.5 quart.
_____	fluid ounces	is equivalent to	$\frac{1}{4}$	quart	or	_____ quart.
_____	fluid ounces	is equivalent to	___	quart	or	0.75 quart.

This activity reinforces converting between fluid ounces, quarts, and gallons.

Practice

Capacity: Converting customary units

1. Convert each amount to quarts. Write equations to show your thinking.

a. 4 gal = _____ qt	**b.** 20 gal = _____ qt
c. 10.5 gal = _____ qt	**d.** 3.25 gal = _____ qt

2. Convert each amount to fluid ounces. Show your thinking.

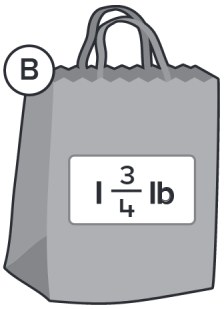
a. 3 qt = _____ fl oz	**b.** 4.25 qt = _____ fl oz
c. 7.75 qt = _____ fl oz	**d.** 9.5 qt = _____ fl oz

This activity reinforces converting between fluid ounces, quarts, and gallons.

Discuss

Mass: Converting customary units

Look at these bags of groceries. How could you figure out which bag is the heaviest?



I would convert the pounds into ounces.
I know there are 16 oz in 1 pound.

Convert the pounds to ounces.
Then write **H** on the heaviest bag above.

Working Space

Write the missing numbers in the table.

Pounds	$\frac{1}{2}$	6	$\frac{3}{4}$	11		3		5	
Ounces	8		12		4		128		160

This activity involves converting pounds to ounces (heavy to light) and ounces to pounds (light to heavy).

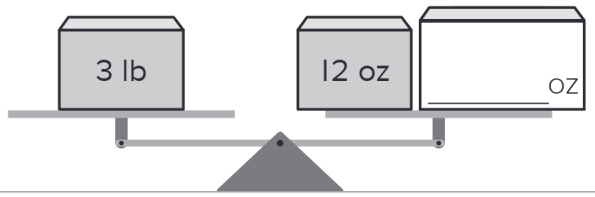
Practice

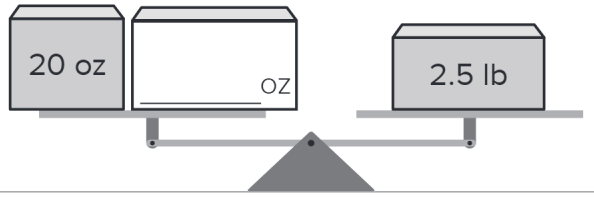
Mass: Converting customary units

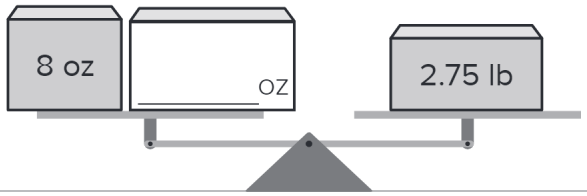
1. Convert pounds to ounces to complete these. Show your thinking.

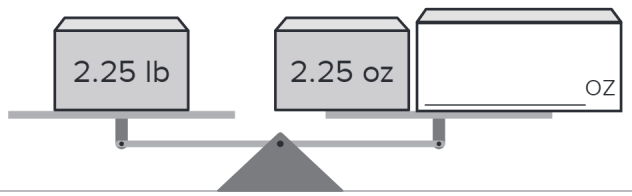
a. 2.5 lb = _____ oz	b. 4.75 lb = _____ oz	c. 3.25 lb = _____ oz
d. 10.5 lb = _____ oz	e. 6.75 lb = _____ oz	f. 5.25 lb = _____ oz
g. 3.75 lb = _____ oz	h. 10.25 lb = _____ oz	i. 4.5 lb = _____ oz

2. Write the missing mass to make each balance picture true.

a. 

b. 

c. 

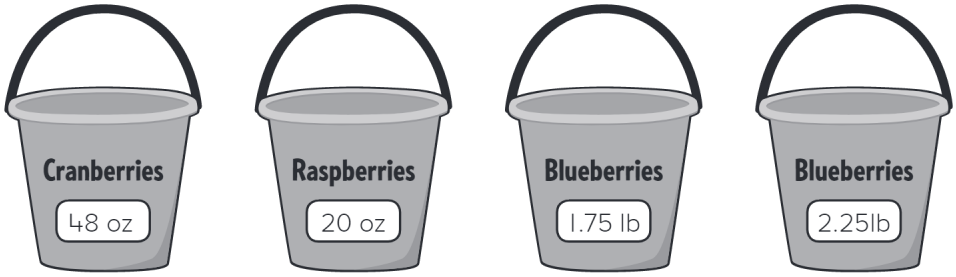
d. 

This activity involves converting pounds to ounces (heavy to light) and ounces to pounds (light to heavy).

Discuss

Mass/capacity: Solving word problems (customary units)

Janice picked these four buckets of berries at her family's farm.



Write the total mass of the blueberries. _____ oz

She also buys 1.5 gallons of milk.
She uses the milk to fill these smaller milk bottles.
How many bottles could she fill?

Write an equation to represent the problem. Use a letter for the unknown amount.

_____

Refer to the items above and write an equation to represent each problem. Use a letter for the unknown amount. Then solve the problems.

a. If all the blueberries and cranberries were packed together, what would be the total mass of the bag?

_____ oz

b. If 1.5 gallons of milk were poured into bottles that hold 16 fl oz, how many bottles could be filled?

_____

In this activity, solutions are found for one- and two-step word problems that involve converting customary units of mass and capacity. Symbols are used to represent the unknown value/s in each word problem. Some conversions are required between customary units.

Practice

Mass/capacity: Solving word problems (customary units)

Solve each problem. Show your thinking.

a. Gabriel buys 2.25lb of potatoes and 14 oz of apples. What is the total mass of his purchase?

_____ oz

b. There are 3.5 gallons in a water filter. At the end of the day, 6 quarts of water remains. How much water has been used?

_____ gal

c. Tama is lifting weights at the gym. He is lifting four 7.5 lb weights on a 15 lb bar. What is the total mass of the bar and weights?

_____ oz

d. 8 fl oz of liquid detergent is required for one load of washing. How many loads can be done from a half-gallon of detergent?

_____ loads

e. A pasta recipe that feeds 2 people requires $\frac{1}{4}$ lb of cheese. Ashley makes enough for 8 people. What is the total mass of cheese required?

_____ oz

f. Max buys three 1.5-quart bottles of juice, three half-gallon bottles of juice, and 2 bottles of juice that are each 8 fl oz. How much juice was purchased?

_____ gal

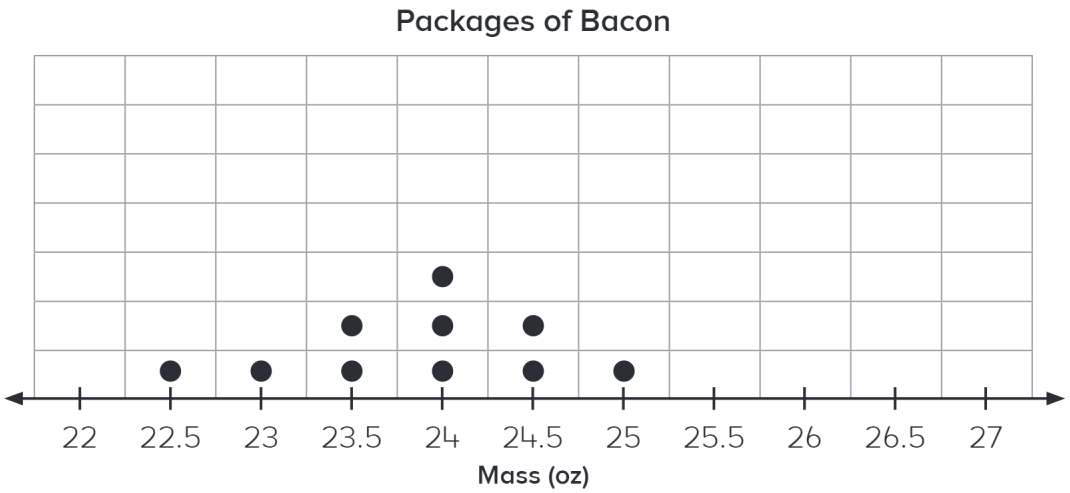
In this activity, solutions are found for one- and two-step word problems that involve converting customary units of mass and capacity. Symbols are used to represent the unknown value/s in each word problem. Some conversions are required between customary units.

Discuss

Mass: Solving real-world problems on a line plot

Victor works at a large supermarket. One of his duties on Tuesday is to slice and package bacon. The computer records the mass of each package as it is placed on the scales. Each package should weigh 24 oz.

After completing 10 packages of bacon, Victor decides to check his accuracy.
This line plot is displayed on the computer.



What does the shape of the line plot tell you about the packages of bacon?

What changes should Victor make to the amount of bacon he puts into each package?

The mass of the next 5 packages are listed below. Add them on the line plot above.

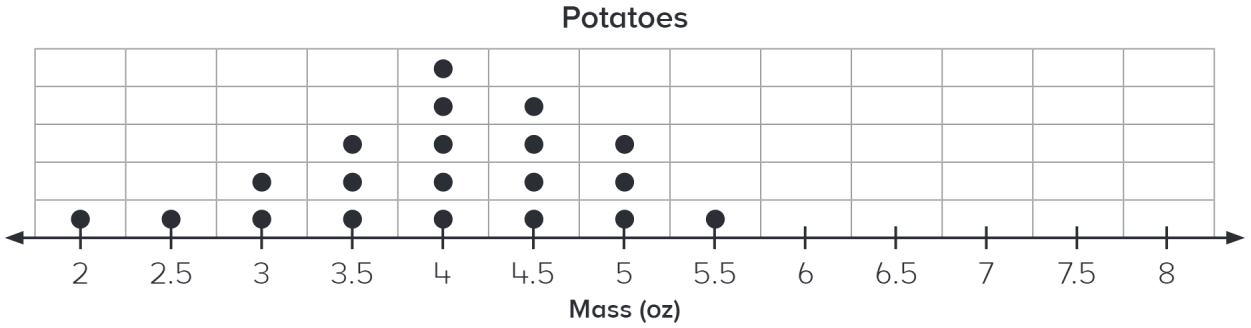
24 oz	24.5 oz	24 oz	24 oz	24 oz

This activity involves interpreting a line plot to solve real-world problems.
In this line plot, each dot represents one package of bacon.

Practice

Mass: Solving real-world problems on a line plot

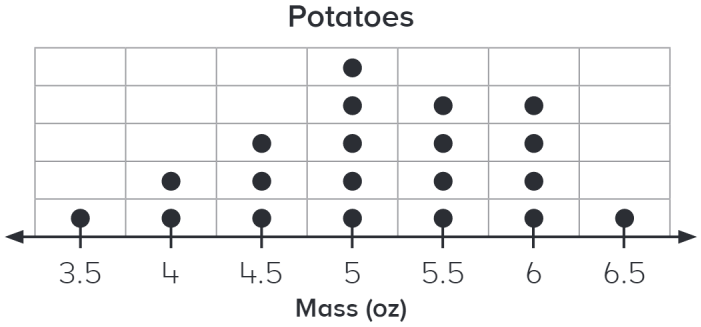
1. Layla lives on a farm that has a large potato crop. A healthy potato should weigh about 5 oz. The line plot below shows the mass of 20 potatoes taken from different sections of the crop.



a. What does the shape of the line plot tell you about the potatoes?

b. Imagine you randomly selected one potato. What do you think it would weigh? Explain your thinking.

2. Layla made some changes to the fertilizer she uses for the potato crop. At the next harvest, she recorded the mass of 20 potatoes. This line plot shows the masses.



What does the shape of the line plot tell you about the potatoes from this harvest?

This activity involves interpreting a line plot to solve real-world problems. In these line plots, each dot represents one potato.