



Stepping Into 6th Grade Math



Multiplying by 2-Digit Numbers

Lesson Objective

- Multiply a 2-, 3-, or 4-digit number by a 2-digit number.

Learn

Multiply a 2-digit number by tens.

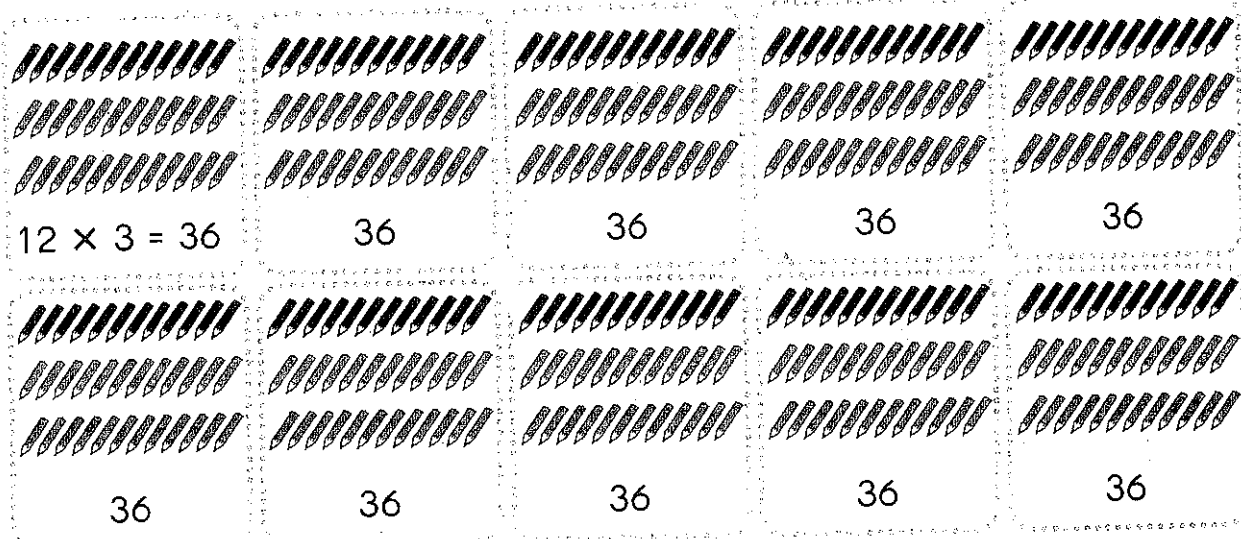
Multiply 12 by 30.

Method 1

$$\begin{aligned} 12 \times 30 &= (12 \times 3) \times 10 \\ &= 36 \times 10 \\ &= 360 \end{aligned}$$

12 × 30 is the same as 12 × 3 tens.

$$\begin{aligned} 12 \times 3 \text{ tens} &= 36 \text{ tens} \\ &= 36 \times 10 \\ &= 360 \end{aligned}$$



Method 2

$$\begin{array}{r} 12 \\ \times 30 \\ \hline 360 \end{array} \leftarrow \text{multiply 12 by 3 tens}$$

$$\begin{array}{r} 12 \\ \times 3 \\ \hline 36 \end{array} \leftarrow \text{multiply 12 by 3}$$



Multiply 60 by 20.

Method 1

$$\begin{aligned} 60 \times 20 &= (60 \times 2) \times 10 \\ &= 120 \times 10 \\ &= 1,200 \end{aligned}$$

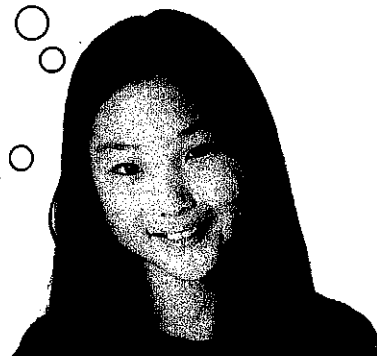
60×20 is the same as 60×2 tens.

$$\begin{aligned} 60 \times 2 \text{ tens} &= 120 \text{ tens} \\ &= 120 \times 10 \\ &= 1,200 \end{aligned}$$

Method 2

$$\begin{array}{r} 60 \\ \times 20 \\ \hline 1,200 \end{array}$$

$$\begin{array}{r} 60 \\ \times 2 \\ \hline 120 \end{array}$$



Multiply a 2-digit number by a 2-digit number.

Multiply 63 by 28.

$$\begin{array}{r} 63 \\ \times 28 \\ \hline 504 \\ 1,260 \\ \hline 1,764 \end{array}$$

← multiply 63 by 8 ones
← multiply 63 by 2 tens
← add

Check!

Estimate the value of 63×28 .
63 rounds to 60, and 28 rounds to 30.
 $60 \times 30 = 1,800$
The estimate shows the answer 1,764 is reasonable.

Guided Practice

Multiply. Show your work.

①

$$\begin{array}{r} 97 \\ \times 53 \\ \hline \end{array}$$

← multiply 97 by ones
← multiply 97 by tens
← add

Check!

Estimate the value of 97×53 .
97 rounds to _____, and
53 rounds to _____
 $\times =$
The estimate shows the answer is _____

Multiply. Estimate to check if your answers are reasonable.

2 72×90

3 25×40

4 34×70

5 19×12

6 65×44

7 38×72

8 99×95

9 91×85

Learn

Multiply a 3-digit number by tens.

Multiply 520 by 30.

Method 1

$$\begin{aligned} 520 \times 30 &= (520 \times 3) \times 10 \\ &= 1,560 \times 10 \\ &= 15,600 \end{aligned}$$

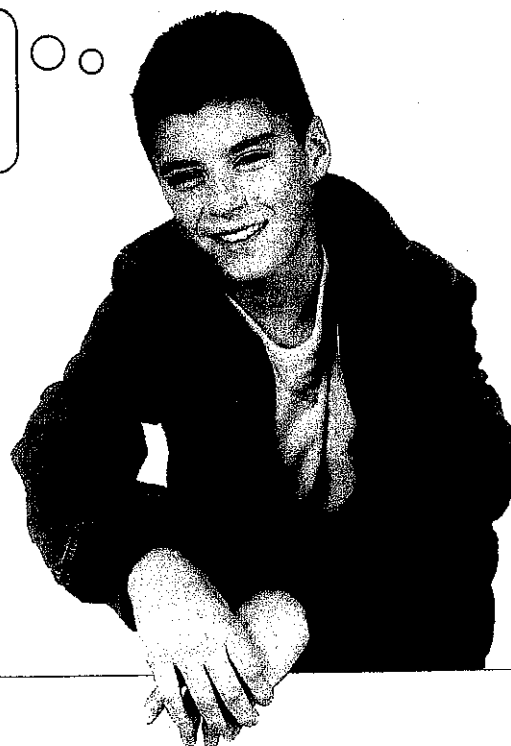
520×30 is the same as 520×3 tens.

$$\begin{aligned} 520 \times 3 \text{ tens} &= 1,560 \text{ tens} \\ &= 1,560 \times 10 \\ &= 15,600 \end{aligned}$$

Method 2

$$\begin{array}{r} 520 \\ \times 30 \\ \hline 15,600 \end{array}$$

$$\begin{array}{r} 520 \\ \times 3 \\ \hline 1,560 \end{array}$$



Multiply a 3-digit number by a 2-digit number.

Multiply 623 by 32.

$$\begin{array}{r}
 623 \\
 \times 32 \\
 \hline
 1,246 \leftarrow \text{multiply 623 by 2 ones} \\
 18,690 \leftarrow \text{multiply 623 by 3 tens} \\
 \hline
 19,936 \leftarrow \text{add}
 \end{array}$$

When both factors are **rounded down**, the estimate will be **less** than the actual product.

When both factors are **rounded up**, the estimate will be **greater** than the actual product.

Check!

Estimate the value of 623×23 .

Using front-end estimation:

$$623 \rightarrow 600$$

$$32 \rightarrow 30$$

$$600 \times 30 = 18,000$$

The estimate shows the answer 19,936 is reasonable.

What happens when one factor is rounded up and the other is rounded down?

Guided Practice

Multiply. Show your work.

10

$$\begin{array}{r}
 514 \\
 \times 72 \\
 \hline
 \end{array}$$

\leftarrow multiply 514 by ones
 \leftarrow multiply 514 by tens
 \leftarrow add

Check!

Estimate the value of 514×72 .

Using front-end estimation:

$$514 \rightarrow 500$$

$$72 \rightarrow 70$$

$$\times =$$

The estimate shows the answer is .

Multiply. Estimate to check if your answers are reasonable.

11 681×60

12 210×80

13 651×70

14 413×12

15 516×21

16 294×48

Learn

Multiply a 4-digit number by tens.

Multiply 7,360 by 20.

Method 1

$$\begin{aligned} 7,360 \times 20 &= (7,360 \times 2) \times 10 \\ &= 14,720 \times 10 \\ &= 147,200 \end{aligned}$$

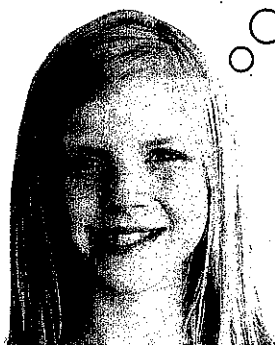
$7,360 \times 20$ is the same as $7,360 \times 2$ tens.

$$\begin{aligned} 7,360 \times 2 \text{ tens} &= 14,720 \text{ tens} \\ &= 14,720 \times 10 \\ &= 147,200 \end{aligned}$$

Method 2

$$\begin{array}{r} 7,360 \\ \times 20 \\ \hline 147,200 \end{array}$$

$$\begin{array}{r} 7,360 \\ \times 2 \\ \hline 14,720 \end{array}$$



Learn

Multiply a 4-digit number by a 2-digit number.

Multiply 5,362 by 76.

$$\begin{array}{r} 2 4 1 \\ 2 3 1 \\ 5,362 \\ \times 76 \\ \hline 32,172 \leftarrow \text{multiply 5,362 by 6 ones} \\ 375,340 \leftarrow \text{multiply 5,362 by 7 tens} \\ \hline 407,512 \leftarrow \text{add} \end{array}$$

Check!

Estimate the value of

$5,362 \times 76$.

5,362 rounds to 5,000.

76 rounds to 80.

$5,000 \times 80 = 400,000$

The estimate shows the answer 407,512 is reasonable.

Guided Practice

Multiply. Show your work.

$$\begin{array}{r} 9205 \\ \times \quad 24 \\ \hline \end{array}$$

← multiply 9,205 by

ones

← multiply 9,205 by

tens

← add

Check!

Estimate the value of $9,205 \times 24$.

9,205 rounds to _____, and

24 rounds to _____

$\times =$

The estimate shows the answer

is _____

Multiply. Estimate to check if your answers are reasonable.

18 $1,246 \times 50$

19 $5,913 \times 60$

20 $3,352 \times 14$

21 $9,540 \times 36$

22 $1,598 \times 72$

23 $2,535 \times 47$

Let's Practice

Multiply. Estimate to check if your answers are reasonable.

1 20×30

2 41×70

3 300×50

4 430×80

5 413×90

6 $2,000 \times 70$

7 $3,700 \times 40$

8 $2,550 \times 60$

9 56×32

10 26×76

11 589×77

12 817×69

13 $3,438 \times 81$

14 $1,256 \times 45$

**Go to Workbook A:
Practice 3, pages 37–42**

Name: _____

Date: _____

Chapter

8

Decimals

Practice 1 Understanding Thousandths

Write the decimal shown in each place-value chart.

Example

Ones	Tenths	Hundredths	Thousandths
	● ●	● ● ●	● ● ● ● ● ● ●

0.237

1.

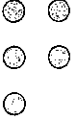


Ones	Tenths	Hundredths	Thousandths
● ● ● ●		● ● ● ● ●	● ● ● ● ●

2.

Ones	Tenths	Hundredths	Thousandths
● ● ● ● ● ●			● ● ● ● ● ● ● ● ●

Write the decimal shown in the place-value chart.

3.

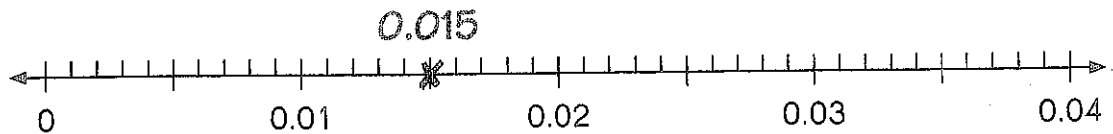
Ones	Tenths	Hundredths	Thousandths
			

Mark X to show where each decimal is located.

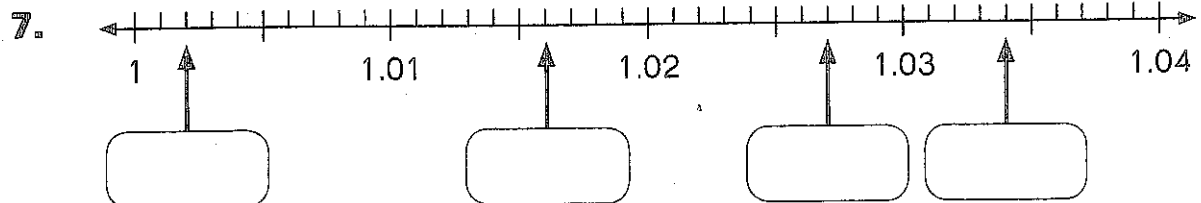
4. 0.006

5. 0.024

6. 0.033



Write the decimal shown by each arrow.



Complete.

8. 4 hundredths = _____ thousandths

9. 8 tenths 5 hundredths = _____ thousandths

10. 20 thousandths = _____ hundredths

11. 125 thousandths = 1 tenth _____ thousandths

Name: _____

Date: _____

Complete.

12. $0.126 = 1 \text{ tenth } 2 \text{ hundredths } \underline{\hspace{2cm}} \text{ thousandths}$

13. $0.352 = 3 \text{ tenths } \underline{\hspace{2cm}} \text{ hundredths } 2 \text{ thousandths}$

Write the equivalent decimal.

14. $7 \text{ thousandths} = \underline{\hspace{2cm}}$

15. $19 \text{ thousandths} = \underline{\hspace{2cm}}$

16. $235 \text{ thousandths} = \underline{\hspace{2cm}}$

17. $300 \text{ thousandths} = \underline{\hspace{2cm}}$

Write each fraction as a decimal.

18. $\frac{13}{1000} = \underline{\hspace{2cm}}$

19. $\frac{55}{1000} = \underline{\hspace{2cm}}$

20. $\frac{228}{1000} = \underline{\hspace{2cm}}$

21. $\frac{430}{1000} = \underline{\hspace{2cm}}$

Write each mixed number as a decimal.

22. $2\frac{3}{1000} = \underline{\hspace{2cm}}$

23. $6\frac{61}{1000} = \underline{\hspace{2cm}}$

24. $7\frac{107}{1000} = \underline{\hspace{2cm}}$

25. $8\frac{240}{1000} = \underline{\hspace{2cm}}$

Write each improper fraction as a decimal.

26. $\frac{1005}{1000} = \underline{\hspace{2cm}}$

27. $\frac{1013}{1000} = \underline{\hspace{2cm}}$

28. $\frac{2341}{1000} = \underline{\hspace{2cm}}$

29. $\frac{3450}{1000} = \underline{\hspace{2cm}}$

Complete.

30. $0.014 =$ _____ thousandths

31. $0.178 =$ _____ thousandths

32. $0.76 =$ _____ thousandths

33. $1.035 = 1$ one and _____ thousandths

**1.234 can be written in expanded form as $1 + \frac{2}{10} + \frac{3}{100} + \frac{4}{1000}$.
Write each decimal in expanded notation.**

34. $4.153 =$ + + +

35. $8.381 =$ + + +

**9.876 can be written in expanded form as $9 + 0.8 + 0.07 + 0.006$.
Write each decimal in expanded notation.**

36. $6.426 =$ _____ + _____ + _____ + _____

37. $3.642 =$ _____ + _____ + _____ + _____

Complete.

In 5.074,

38. the digit 4 is in the _____ place.

39. the value of the digit 7 is _____.

40. the digit 0 is in the _____ place.

41. the digit 5 stands for _____.

Practice 2 Comparing and Rounding Decimals

Compare the decimals in each place-value chart.

Fill in the blanks. Write $>$ or $<$ in the \bigcirc .

Example

Ones	Tenths	Hundredths	Thousandths
0	0	2	
0	0	1	5

0.02 is greater than 0.015.

0.02 \bigcirc 0.015

1.

Ones	Tenths	Hundredths	Thousandths
0	3	0	8
0	2	9	

_____ is less than _____.

_____ \bigcirc _____

2.

Ones	Tenths	Hundredths	Thousandths
4	0	9	1
4	1	9	

_____ is less than _____.

_____ \bigcirc _____

Write the greater decimal.

3. 11.6 or 21.8 _____
4. 10.55 or 10.05 _____
5. 20.07 or 20.01 _____
6. 100.202 or 100.212 _____

Write $>$, $<$, or $=$ in each \bigcirc .

7. 3.7 \bigcirc 0.370
8. 0.150 \bigcirc 0.51
9. 0.205 \bigcirc 2.05
10. 2.3 \bigcirc 2.30

Circle the greatest decimal and underline the least.

11. 1.03, 1.3, 0.13
12. 0.5, 0.53, 0.503
13. 2.35, 2.305, 2.035
14. 8.7, 8.07, 8.701

Order the decimals from least to greatest.

Example

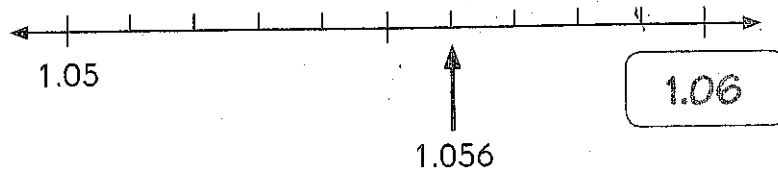
3.33, 3.03, 3.303

3.03, 3.303, 3.33

15. 5.51, 5.051, 5.501 _____
16. 4, 4.01, 4.001 _____
17. 0.023, 0.203, 0.230 _____

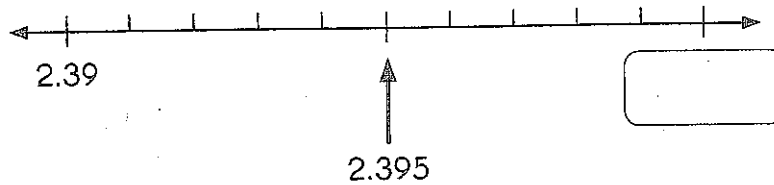
Write the missing decimal in each box. Round the given decimal to the nearest hundredth.

18.



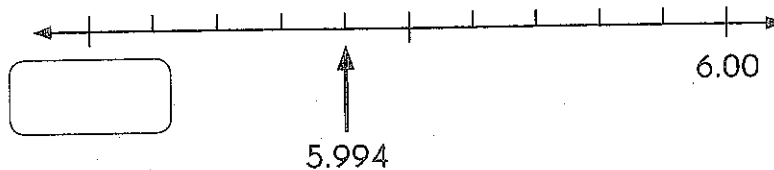
1.056 rounded to the nearest hundredth is _____.

19.



2.395 rounded to the nearest hundredth is _____.

20.



5.994 rounded to the nearest hundredth is _____.

Fill in the blanks.

21.

The mass of a sewing needle is 0.585 gram.
Round the mass to the nearest hundredth of a gram.

0.585 g rounds to _____.

22.

The width of a pinhead is 0.098 centimeter.
Round the width to two decimal places.

_____ rounds to _____.

23.

1 centimeter is equal to 0.394 inches.
Round 0.394 inches to the nearest hundredth of an inch.

_____ rounds to _____.

Round each decimal to the nearest whole number, nearest tenth, and nearest hundredth.

24.

Decimal	Rounded to the Nearest		
	Whole Number	Tenth	Hundredth
1.049			
3.753			
2.199			

Fill in the blanks.

- 25.** A decimal rounded to the nearest tenth is 2.5.
Write two decimals that can be rounded to 2.5.

_____ and _____

- 26.** A decimal rounded to the nearest hundredth is 4.09.
Write two decimals that can be rounded to 4.09.

_____ and _____

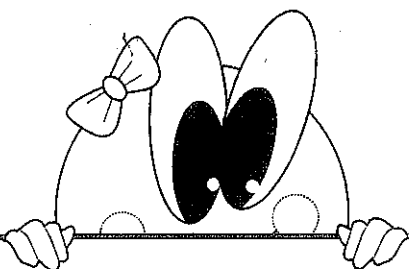
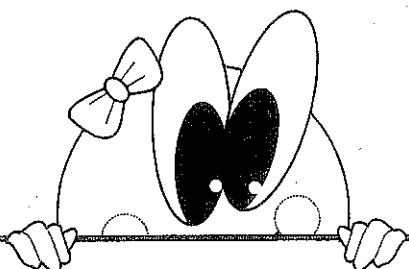
- 27.** A decimal rounded to the nearest hundredth is 6.32.
This decimal is greater than 6.32.

What could this decimal be? _____

- 28.** A decimal rounded to the nearest hundredth is 7.01.
This decimal is less than 7.01.

What could this decimal be? _____

Pairs Check Sums and Differences



(A) Name _____	(B) Name _____
1) $234.65 + 581.54$	2) $92.84 + 73.28$
3) $59.245 - 32.482$	4) $837.26 - 126.47$
5) $93.4 + 6.57$	6) $5.643 + 27.9$
7) $705.46 - 43.8$	8) $25.351 + 7.08$
9) $39.7 + 4.893$	10) $437.45 - 291.8$
11) $27.9 - 15.345$	12) $56 + 37.84$

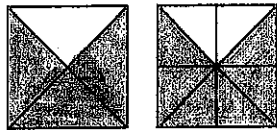
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Name: _____

Equivalent Fractions

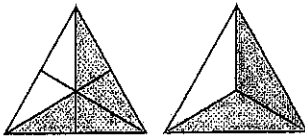
Fill in the missing fraction parts.

a.



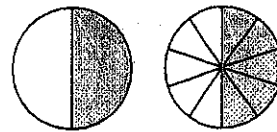
$$\frac{3}{4} = \frac{\quad}{8}$$

b.



$$\frac{4}{6} = \frac{\quad}{3}$$

c.



$$\frac{1}{2} = \frac{\quad}{10}$$

d.

$$\frac{6}{12} = \frac{\quad}{6}$$

e.

$$\frac{1}{3} = \frac{\quad}{6}$$

f.

$$\frac{1}{6} = \frac{\quad}{12}$$

g.

$$\frac{5}{10} = \frac{\quad}{6}$$

h.

$$\frac{2}{3} = \frac{\quad}{9}$$

i.

$$\frac{2}{4} = \frac{\quad}{6}$$

j.

$$\frac{1}{4} = \frac{\quad}{12}$$

k.

$$\frac{6}{9} = \frac{\quad}{3}$$

l.

$$\frac{2}{5} = \frac{\quad}{10}$$

m.

$$\frac{6}{8} = \frac{\quad}{12}$$

n.

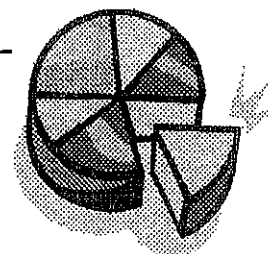
$$\frac{5}{7} = \frac{\quad}{14}$$

o.

$$\frac{14}{16} = \frac{\quad}{8}$$

Name: _____

Simplifying Fractions



Simplify each fraction.

a. $\frac{2}{8} =$

b. $\frac{4}{10} =$

c. $\frac{3}{6} =$

d. $\frac{4}{12} =$

e. $\frac{7}{14} =$

f. $\frac{2}{20} =$

g. $\frac{3}{9} =$

h. $\frac{6}{9} =$

i. $\frac{8}{10} =$

j. $\frac{5}{15} =$

k. $\frac{8}{72} =$

l. $\frac{5}{20} =$

m. $\frac{4}{6} =$

n. $\frac{21}{28} =$

o. $\frac{4}{18} =$

p. $\frac{33}{55} =$

q. What is $\frac{3}{18}$ written in simplest form? Explain how you found your answer.

3.9

Adding Unlike Fractions

Lesson Objectives

- Add two unlike fractions where one denominator is not a multiple of the other.
- Estimate sums of fractions.

Vocabulary

multiple

least common multiple

equivalent fractions

least common denominator

benchmarks

Let's

Find common denominators to add unlike fractions.

A plank is painted $\frac{1}{2}$ red and $\frac{1}{3}$ green. The rest is painted yellow.

What fraction of the plank is painted red and green?

$$\frac{1}{2} + \frac{1}{3} = ?$$

$\frac{1}{2}$ and $\frac{1}{3}$ are unlike fractions. To add, rewrite $\frac{1}{2}$ and $\frac{1}{3}$ as like fractions.

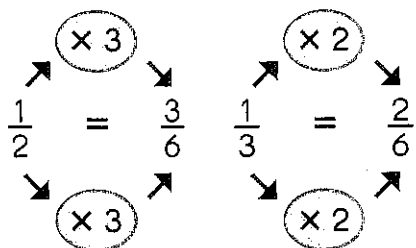


List the **multiples** of the denominators, 2 and 3.

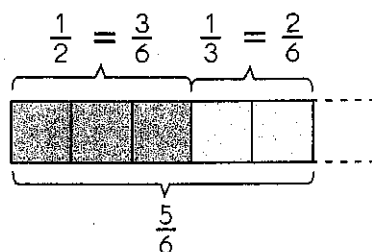
Multiples of 2: 2, 4, 6, 8, ... Multiples of 3: 3, 6, 9, 12, ...

The **least common multiple** of 2 and 3 is 6.

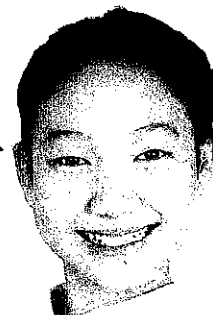
So, 6 is the **least common denominator** of $\frac{1}{2}$ and $\frac{1}{3}$. Use it to rewrite $\frac{1}{2}$ and $\frac{1}{3}$ as like fractions.



$\frac{1}{2}$ and $\frac{3}{6}$, and $\frac{1}{3}$ and $\frac{2}{6}$ are **equivalent fractions**.



Since 6 is the least common multiple, I draw a model with 6 units.



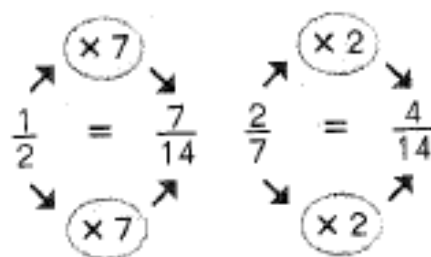
$$\begin{aligned} \frac{1}{2} + \frac{1}{3} &= \frac{3}{6} + \frac{2}{6} \\ &= \frac{5}{6} \end{aligned}$$

$\frac{5}{6}$ of the plank is painted red and green.

Guided Practice

Add the fractions.

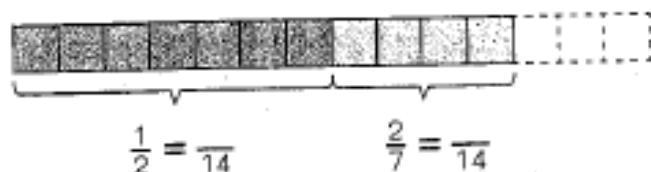
① $\frac{1}{2} + \frac{2}{7}$



$$\frac{1}{2} + \frac{2}{7} = \frac{\quad}{14} + \frac{\quad}{14}$$

= —

The least common multiple of 2 and 7 is 14.

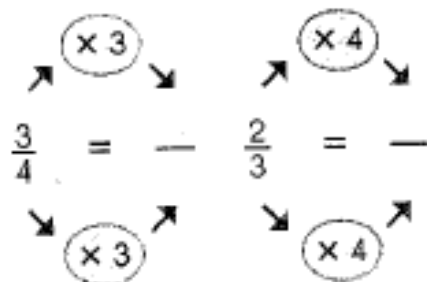


② $\frac{3}{4} + \frac{2}{3} = \text{—} + \text{—}$

= —

= — + —

=



Hands-On Activity



Use a computer drawing tool. Draw models that show the sum for each pair of fractions. Then find the sum.

① $\frac{1}{2} + \frac{1}{4}$

② $\frac{1}{5} + \frac{3}{4}$

③ $\frac{1}{4} + \frac{2}{3}$

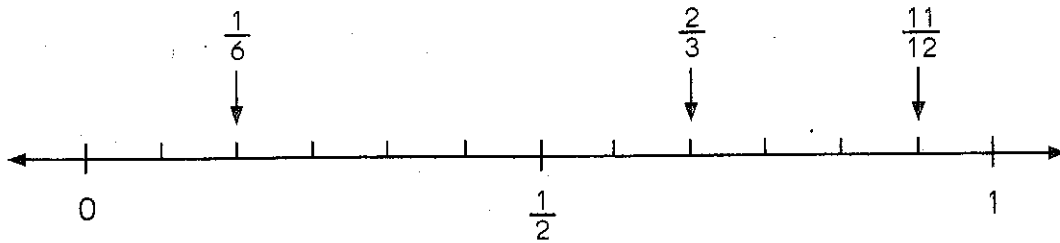
Use benchmarks to estimate sums of fractions.

Benchmarks are numbers that are easier to work with and to picture than others. They help compare numbers and estimate answers.



In estimating with fractions, you approximate each fraction to the closest benchmark. Common benchmarks for estimating with fractions are 0, $\frac{1}{2}$ and 1.

Estimate the sum of $\frac{11}{12}$, $\frac{2}{3}$ and $\frac{1}{6}$.



$\frac{11}{12}$ is about 1.

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

$\frac{1}{6}$ is about 0.

$$\begin{array}{ccccccc} \frac{11}{12} & + & \frac{2}{3} & + & \frac{1}{6} & & \\ \downarrow & & \downarrow & & \downarrow & & \\ 1 & + & \frac{1}{2} & + & 0 & = & 1\frac{1}{2} \end{array}$$

The sum of $\frac{11}{12}$, $\frac{2}{3}$ and $\frac{1}{6}$ is about $1\frac{1}{2}$.

Guided Practice

Use benchmarks to estimate each sum.

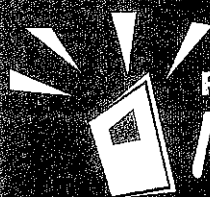
3 $\frac{1}{10} + \frac{2}{5}$

4 $\frac{8}{9} + \frac{9}{10}$

5 $\frac{1}{6} + \frac{7}{12} + \frac{5}{6}$

Let's Explore!

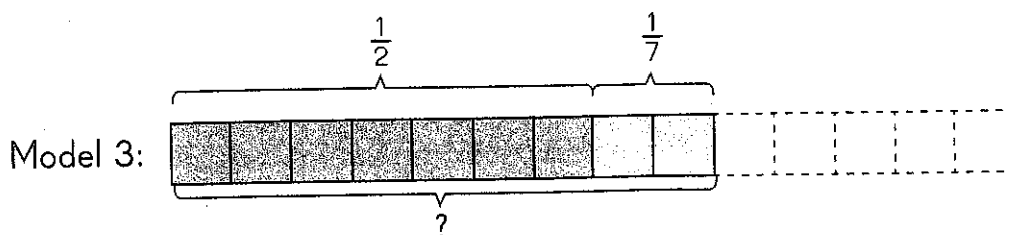
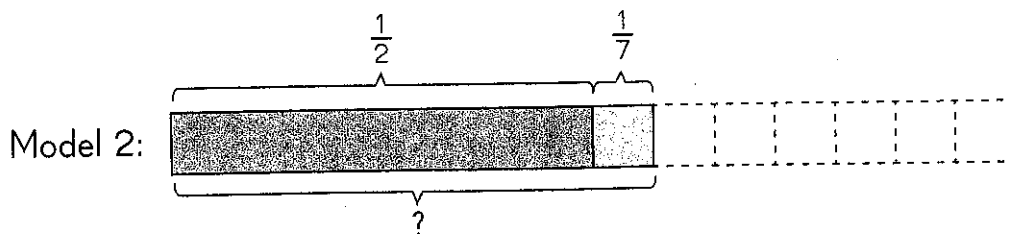
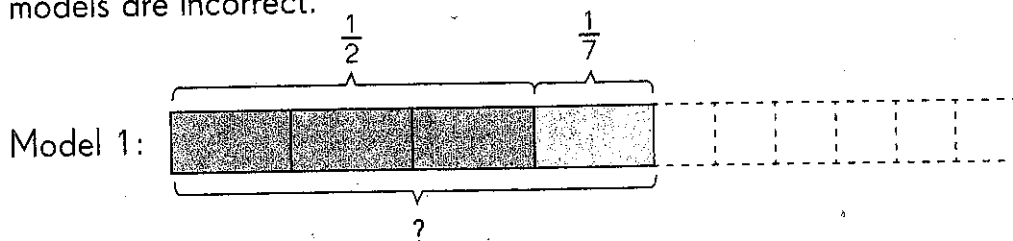
- ① Without solving, do you think the sum of $\frac{1}{3}$ and $\frac{3}{8}$ is less than 1? Explain your reasoning.
- ② Do you think the sum of $\frac{5}{9}$ and $\frac{6}{11}$ is greater than 1? Why do you think so?
- ③ Can you tell if the sum of $\frac{5}{11}$ and $\frac{4}{7}$ is greater than or less than 1? Why or why not?



READING AND WRITING MATH

Math Journal

One of the three models shows the sum of $\frac{1}{2}$ and $\frac{1}{7}$. The other two models are incorrect.

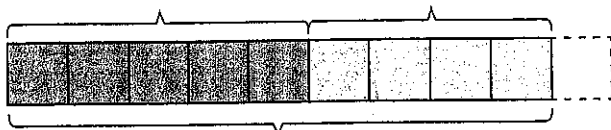


- a Identify the correct one of the three.
- b Explain why the other two are incorrect.

Let's Practice

Find the part of the model that shows the fractions $\frac{1}{2}$, $\frac{2}{5}$ and $\frac{9}{10}$.
Then write two addition sentences using the fractions.

1



Draw a model to find each sum.

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

3 $\frac{3}{5}$ and $\frac{1}{3}$

Add. Express each sum in simplest form.

4 $\frac{2}{3} + \frac{1}{8}$

5 $\frac{2}{3} + \frac{1}{12}$

6 $\frac{1}{5} + \frac{3}{10}$

7 $\frac{1}{4} + \frac{1}{6}$

8 $\frac{5}{9} + \frac{1}{2}$

9 $\frac{2}{5} + \frac{5}{6}$

10 $\frac{3}{4} + \frac{5}{12}$

11 $\frac{1}{6} + \frac{5}{8}$

Use benchmarks to estimate each sum.

12 $\frac{2}{5} + \frac{6}{7}$

13 $\frac{4}{9} + \frac{4}{10}$

14 $\frac{1}{8} + \frac{3}{5} + \frac{9}{10}$



Go to Workbook A:
Practice 1, pages 93–98

3.2 Subtracting Unlike Fractions

Lesson Objectives

- Subtract two unlike fractions where one denominator is not a multiple of the other.
- Estimate differences between fractions.

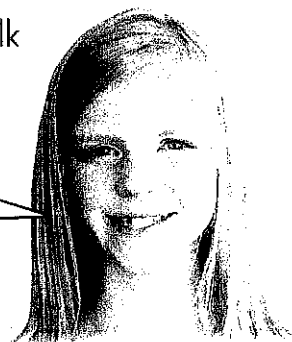
Learn

Find common denominators to subtract unlike fractions.

A carton contains $\frac{3}{4}$ quart of milk. Larry pours $\frac{1}{3}$ quart of the milk into a mug. How much milk is left in the carton?

$$\frac{3}{4} - \frac{1}{3} = ?$$

$\frac{1}{3}$ and $\frac{3}{4}$ are unlike fractions. To subtract, rewrite $\frac{1}{3}$ and $\frac{3}{4}$ as like fractions.

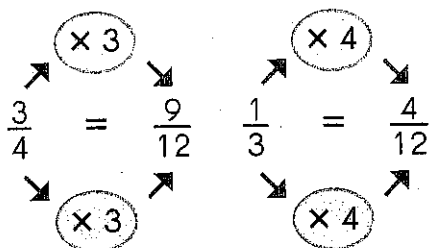


List the multiples of the denominators, 3 and 4.

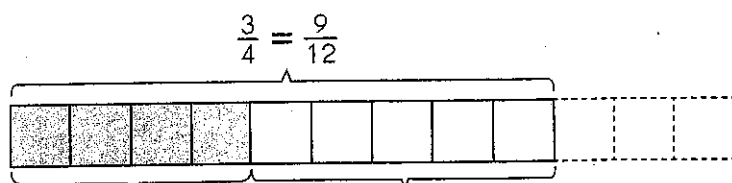
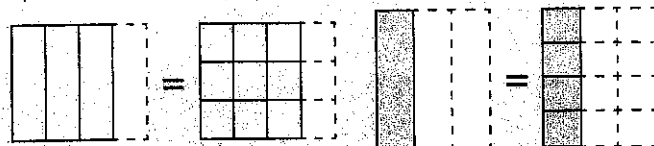
Multiples of 3: 3, 6, 9, 12, ... Multiples of 4: 4, 8, 12, 16, ...

The least common multiple of 3 and 4 is 12.

So, 12 is the least common denominator of $\frac{1}{3}$ and $\frac{3}{4}$. Use it to rewrite $\frac{3}{4}$ and $\frac{1}{3}$ as like fractions.



$\frac{3}{4}$ and $\frac{9}{12}$, and $\frac{1}{3}$ and $\frac{4}{12}$ are equivalent fractions.



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

$$\begin{aligned} \frac{3}{4} - \frac{1}{3} &= \frac{9}{12} - \frac{4}{12} \\ &= \frac{5}{12} \end{aligned}$$

$\frac{5}{12}$ quart of milk is left in the carton.

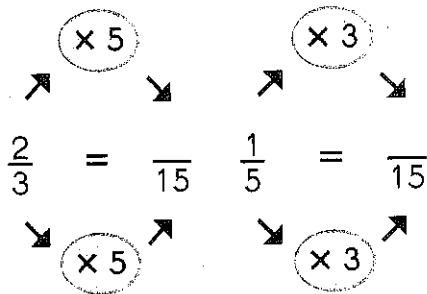
Since 12 is the least common multiple, I draw a model with 12 units.



Guided Practice

Subtract the fractions.

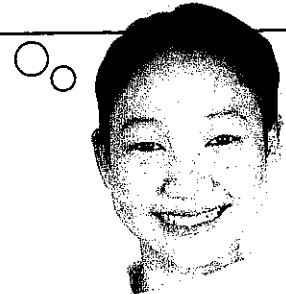
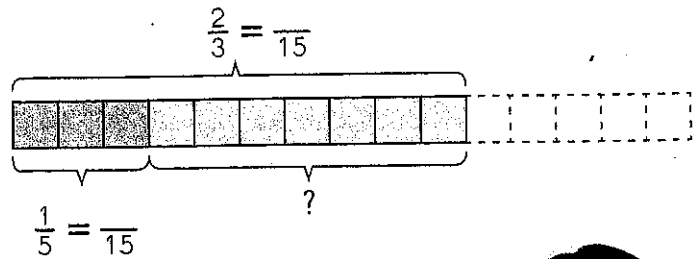
① $\frac{2}{3} - \frac{1}{5}$



$$\frac{2}{3} - \frac{1}{5} = \frac{10}{15} - \frac{3}{15}$$

$$= \frac{7}{15}$$

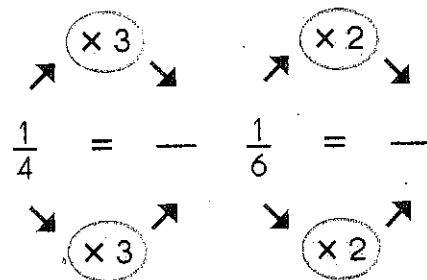
The least common multiple of 3 and 5 is 15.



② $1 - \frac{1}{4} - \frac{1}{6} = 1 - \frac{\quad}{\quad} - \frac{\quad}{\quad}$

$= \frac{\quad}{\quad} - \frac{\quad}{\quad}$

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



Hands-On Activity



Use a computer drawing tool. Draw models that show the difference for each pair of fractions. Then find the difference.

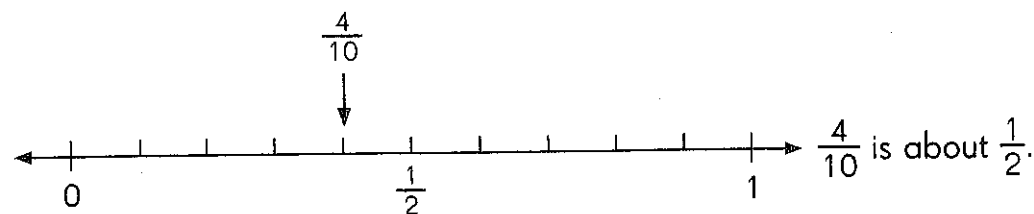
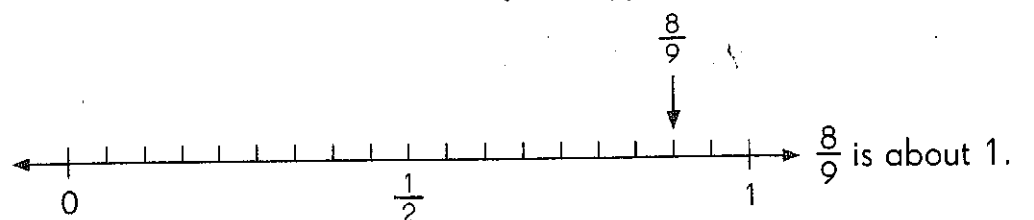
① $\frac{1}{2} - \frac{2}{7}$

② $\frac{5}{6} - \frac{4}{9}$

③ $\frac{3}{4} - \frac{3}{5}$

Use benchmarks to estimate differences between fractions.

Estimate the difference between $\frac{8}{9}$ and $\frac{4}{10}$.



$$\begin{array}{r} \frac{8}{9} \\ \downarrow \\ 1 \end{array} - \begin{array}{r} \frac{4}{10} \\ \downarrow \\ \frac{1}{2} \end{array} = \frac{1}{2}$$

The difference between $\frac{8}{9}$ and $\frac{4}{10}$ is about $\frac{1}{2}$.

Guided Practice

Use benchmarks to estimate each difference.

③ $\frac{5}{6} - \frac{2}{5}$

④ $\frac{9}{10} - \frac{1}{8}$

⑤ $\frac{7}{12} - \frac{4}{9}$



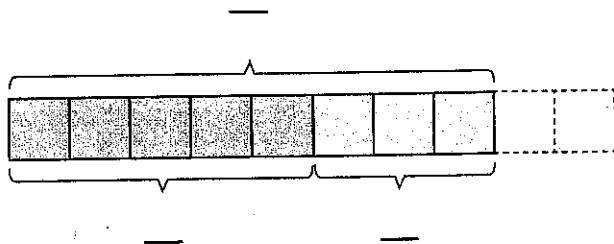
Let's Explore!

- ① Without solving, do you think the difference between 1 and $\frac{3}{7}$ is greater than $\frac{1}{2}$? Explaining your reasoning.
- ② Do you think the difference between 1 and $\frac{7}{12}$ is less than $\frac{1}{2}$? Why do you think so?
- ③ Can you tell if the difference between $\frac{11}{12}$ and $\frac{1}{4}$ is greater than or less than $\frac{1}{2}$? Why or why not?

Let's Practice

Find the part of the model that shows the fractions $\frac{1}{2}$, $\frac{3}{10}$ and $\frac{4}{5}$.
Then write two subtraction sentences using the fractions.

1



Draw a model to find each difference.

2 $\frac{5}{8} - \frac{1}{2}$

3 $\frac{4}{5} - \frac{1}{4}$

Subtract. Express each difference in simplest form.

4 $\frac{8}{9} - \frac{5}{6}$

5 $\frac{11}{12} - \frac{7}{8}$

6 $\frac{4}{5} - \frac{2}{7}$

7 $\frac{7}{9} - \frac{3}{4}$

8 $\frac{4}{7} - \frac{1}{6}$

9 $\frac{2}{3} - \frac{3}{8}$

10 $2 - \frac{1}{3} - \frac{9}{10}$

11 $4 - \frac{5}{6} - \frac{3}{8}$

Use benchmarks to estimate each difference.

12 $\frac{4}{5} - \frac{3}{7}$

13 $\frac{5}{8} - \frac{1}{9}$

14 $\frac{11}{12} - \frac{5}{6}$

Go to Workbook A:
Practice 2, pages 99–102