Term 1

Math Exam Coverage

5 Advanced



NAME :

GRADE :

T. Asmaa Abohatem

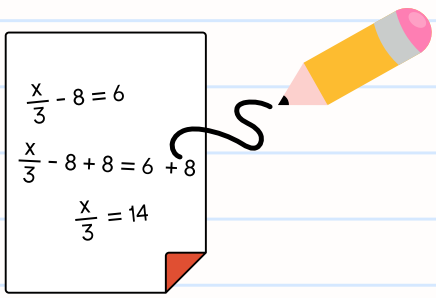
Al-Salamah Girls' school

Unit 2 : Volume



MCQs

1	Describe volume as an attribute of solid figures	2-7	35
2	Determine volume by multiplying the number of unit cubes in one layer by the number of layers that fill a solid with no gaps or overlaps	Learn, work Together 8-9	38 40
3	Find the volume of rectangular prisms using formulas	1-7	43



FRQs

21	Find the volume of composite figures	1-5 6-9	49 50

1	Describe volume as an attribute of solid figures	2-7	35

A B C

For the situation, would you measure the *length*, *area*, or *volume*? Explain.

2. the amount of soil needed to fill a flower pot

3. the distance of a bike ride

4. the amount of wall space covered by a poster

5. the amount of concrete needed to fill a patio

6. the space inside a moving truck

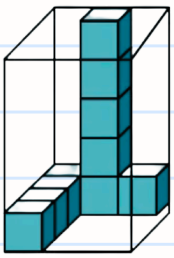
7. the distance around a building

2	Determine volume by multiplying the number of unit cubes in one layer by the number of layers that fill a solid with no gaps or overlaps	Learn, work Together 8-9	38 40

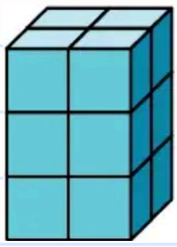
A B C

Work Together

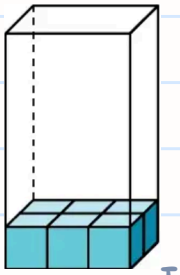
How can you determine the volume of this box?



8. What equations could you write to determine the volume of this figure?



9. The volume of this box is 36 cubic units. How many layers of unit cubes are in the box? Explain your thinking.

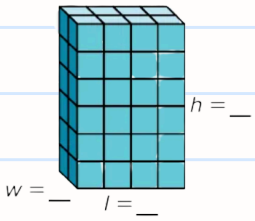


3	Find the volume of rectangular prisms using formulas	1-7	43



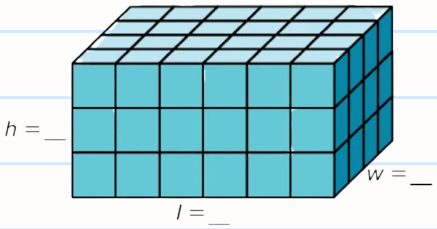
Label the dimensions and then determine the volume of the figure.

1.



$V =$ _____ cubic units

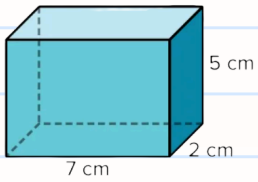
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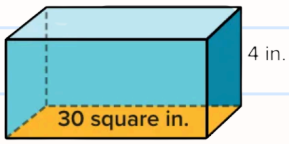
$V =$ _____ cubic units

What is the volume of the figure? Tell which volume formula you used and why.

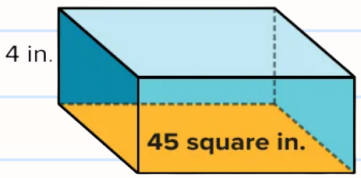
3.



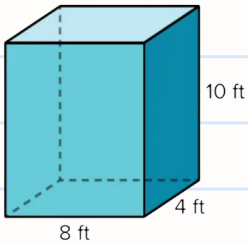
4.



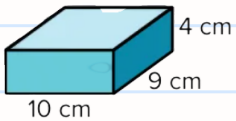
5.



6.

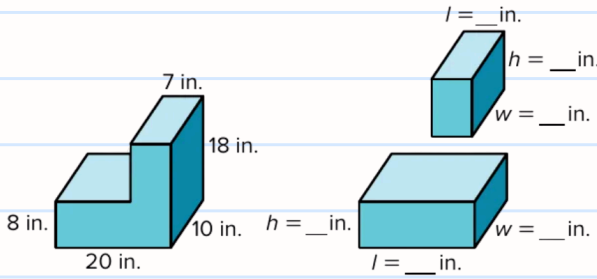


7. Explain how the Associative Property can be used to mentally find the volume of this figure.



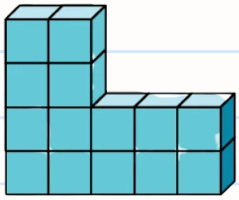
21	Find the volume of composite figures	1-5	49
		6-9	50

1. Label the unknown dimensions of the decomposed figure and then find the volume of the composite solid figure.



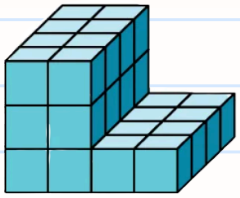
What is the volume of the figure?

2.



$V =$ _____ cubic units

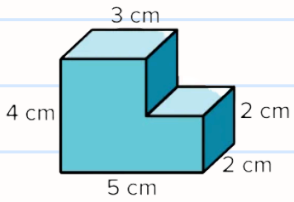
3.



$V =$ _____ cubic units

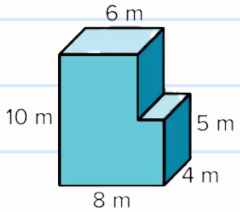
Draw line(s) to show how you decomposed the figure.
What is the volume of the figure?

4.



$V =$ _____

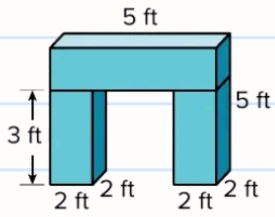
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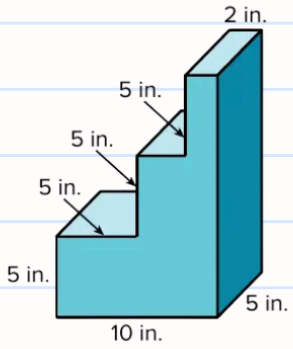
$V =$ _____

Draw line(s) to show how you decomposed the figure.
What is the volume of the figure?

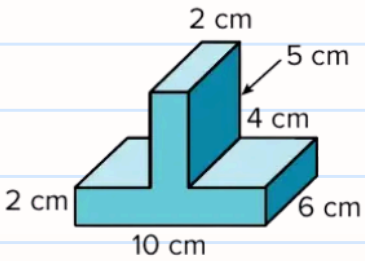
6.



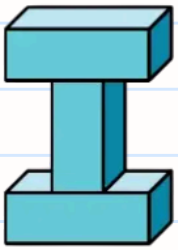
7.



8. STEM Connection An ocean engineer is designing an underwater robot. The robot will have two pieces like the one shown. What is the volume of the robot?



9. A sign company made this letter using rectangular prisms. Each prism is 12 inches by 4 inches by 4 inches. What is the volume of the letter? Explain.



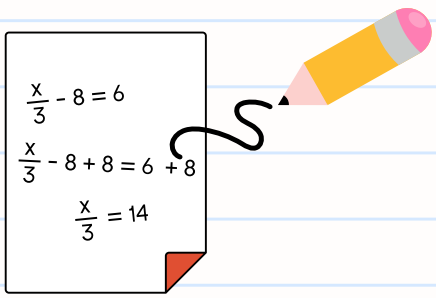
Unit 3: Place value and Number relationship



MCQs

4	Compare two decimals to the thousandths place using place value	1-9 10-12	77 78

5	Read and write decimals to thousandths using standard form, expanded form, and word form	1-12	73



FRQs

4	Compare two decimals to the thousandths place using place value	1-9	77
		10-12	78



Write >, <, or = in each ◯ to make a true comparison. You can use a place-value chart to help.

1. 7.790 ◯ 8.7 **2.** 1.021 ◯ 1.095 **3.** 6.55 ◯ 5.66 **4.** 9.9 ◯ 0.99

5. 3.41 ◯ 3.41 **6.** 2.563 ◯ 2.573

For exercises 7–9, use the cost of each school supply.



7. Do the pencils or the highlighters cost more?

8. Write a comparison statement for the cost of the pens and the pencils.

9. Which school supply is the most expensive? Which school supply is the least expensive? Explain how you know.

10. Error Analysis An astronomer calculated that a comet traveled 192.40 kilometers. The astronomer wrote 192.4 kilometers on a chart. How do you respond to the astronomer?

11. Write a comparison statement that compares the speed of a quarter horse to the speed of a lion.


88.5 km per hour


80.5 km per hour

12. Which of the following comparisons are *true*?

A. $0.773 > 1.773$

B. $101.020 = 101.02$

C. $0.04 < 0.4$

D. $0.321 < 0.0123$

5	Read and write decimals to thousandths using standard form, expanded form, and word form	1-12	73



What is the word form of the decimal?

1. 8.2

2. 8.02

3. 0.82

4. 0.082

What is the standard form of the decimal?

5. $0.9 + 0.03 + 0.007$

6. $20 + 0.7 + 0.08 + 0.006$

7. $5 + 0.01 + 0.009$

8. $7 + \frac{4}{10} + \frac{5}{1{,}000}$

What is each decimal in standard form?
What is each decimal in expanded form?

9. ninety-three and six thousandths

10. three and eight hundred forty-six thousandths

11. two hundred twelve and fifteen thousandths

12. seven hundred fifty-one thousandths

Unit 4 : Add and Subtract Decimals



MCQs

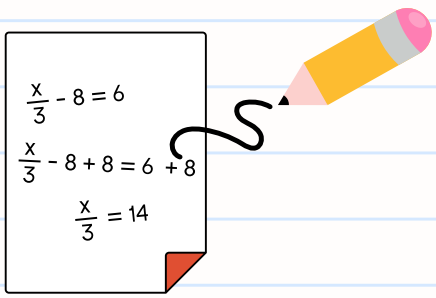
6	Estimate sums and differences of decimals	1-8	95

7	Represent addition of decimals using decimal grids	1-10	101
		11	102

8	Use strategies to add decimals	1-6	109
		10-12	110

9	Represent subtraction of decimals less than 1 containing tenths and hundredths	1-7	113

10	Use strategies to subtract decimals	1-8	121



FRQs

22	Add and subtract decimals to solve problems	7-8	125
		9-10	126

6	Estimate sums and differences of decimals	1-8	95

A B C

What is a reasonable estimate for the sum or difference?
Explain the strategy you used.

1. 9.86 + 4.30

____ + ____ = ____

2. 43.85 + 56.01

____ + ____ = ____

3. 3.92 + 6.14

____ + ____ = ____

4. 24.73 + 26.05

____ + ____ = ____

5. 8.32 − 5.9

____ − ____ = ____

6. 88.4 − 10.96

____ − ____ = ____

7. 16.28 − 5.9

____ − ____ = ____

8. 5.42 − 1.7

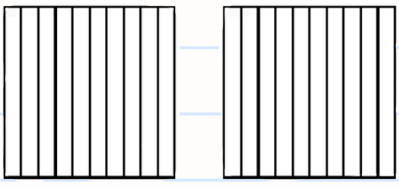
____ − ____ = ____

7	Represent addition of decimals using decimal grids	1-10 11	101 102

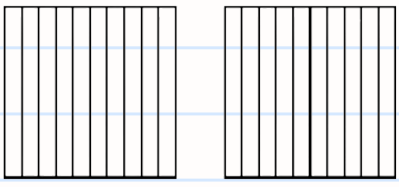
A B C

What is the sum? Use the decimal grids.

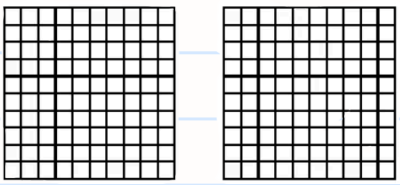
1. 0.7 + 0.1 = ____



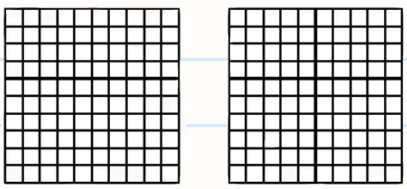
2. 0.5 + 0.8 = ____



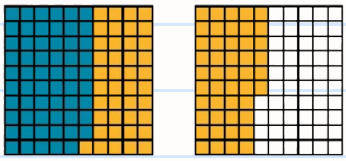
3. 0.02 + 0.09 = ____



4. 0.78 + 0.64 = ____

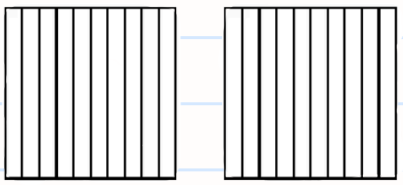


11. Write the addition equation represented by the decimal grids.

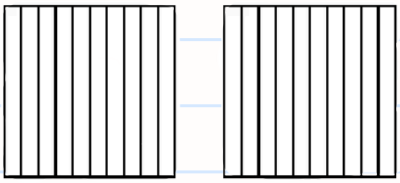


What is the sum? Use decimal grids to show the sum.

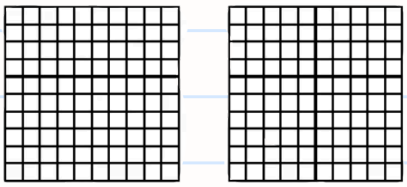
5. $0.2 + 0.7 =$ _____



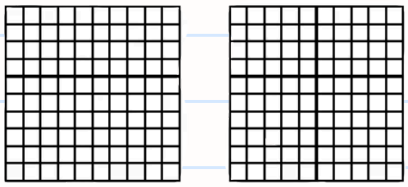
6. $0.5 + 0.6 =$ _____



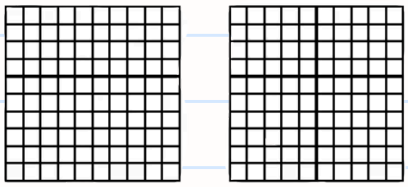
7. $0.08 + 0.06 =$ _____



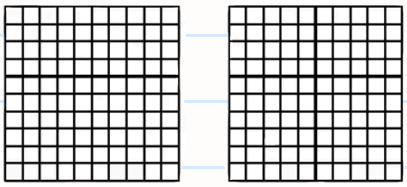
8. $0.79 + 0.84 =$ _____



9. $0.32 + 0.88 =$ _____



10. $0.46 + 0.29 =$ _____



8	Use strategies to add decimals	1-6 10-12	109 110



What is the sum? Use partial sums to solve.

1. $2.57 + 8.4$

$= 2 + 0.5 + 0.07 + 8 + 0.4$

$=$ _____

2. $6.9 + 0.31$

$= 6 + 0.9 + 0.3 + 0.01$

$=$ _____

3. $35.12 + 64.73 =$ _____

4. $70.34 + 21.52 =$ _____

5. $14.53 + 11.2 =$ _____

6. $104.75 + 21.9 =$ _____

10. STEM Connection A veterinarian records the amounts of medication she dispenses over the course of three days. How many milliliters of medication does she dispense? Show your work.

	Amount (in milliliters)
Friday	32.5
Saturday	46.25
Sunday	27.1

11. Harry adds the two decimals, 80.51 and 43.97. He states that the sum cannot be greater than 125. Do you agree? Why or why not?

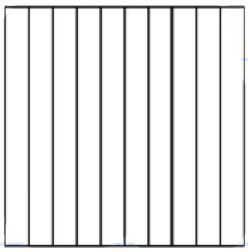
12. Error Analysis Scott adds 54.37 + 19.28 by writing 50 + 10 + 4 + 9 + 0.3 + 0.2 + 0.07 + 0.03 + 0.05. Is Scott's work correct? Why or why not?

9	**Represent subtraction of decimals less than 1 containing tenths and hundredths**	**1-7**	**113**

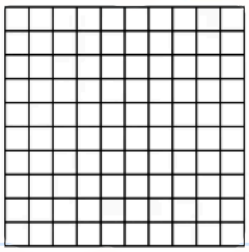


What is the difference? Use the decimal grid to solve.

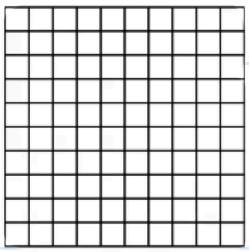
1. 0.7 − 0.1 = _____



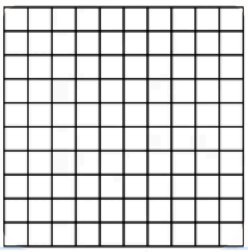
2. 0.09 − 0.02 = _____



3. 0.54 − 0.38 = _____

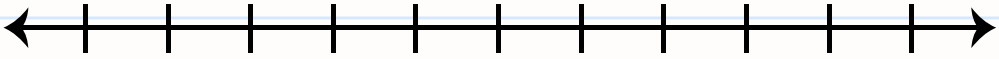


4. 0.25 − 0.11 = _____



What is the difference? Use a number line to solve.

5. 0.7 − 0.2 = _____



6. 0.6 − 0.4 = _____



7. Malik has $0.85. He bought a pencil for $0.50. Does he have enough money left to buy a folder for $0.30? Explain.

10	Use strategies to subtract decimals	1-8	121



Decompose by place value to find the difference.

1. 8.57 − 2.4

   8.57 − 2 = _____

   _____ − 0.4 = _____

   8.57 − 2.4 = _____

2. 7.73 − 5.1

   7.73 − 5 = _____

   _____ − 0.1 = _____

   7.73 − 5.1 = _____

Count on to find the difference.

3. 6.31 − 0.9 = _____



4. 64.19 − 35.75 = _____



What is the difference? Show your work.

5. 36.33 − 32.29 = _____

6. 48.56 − 18.21 = _____

7. 17.10 − 6.02 = _____

8. 25.50 − 11.49 = _____

7. Carlos' luggage weighs 15.6 pounds. Emily's luggage weighs 19.25 pounds. What is the total weight of their luggage? Which strategy did you use to solve?

8. Amy drove 13.4 miles on Monday and 11.25 miles on Tuesday. How much farther did she drive on Monday than on Tuesday? Which strategy did you use to solve?

9. STEM Connection

An oceanographer recorded the time spent scuba diving last week. How much more time was spent scuba diving on Monday than on Wednesday?

Day of Week	Length of Time
Monday	34.4 min
Tuesday	42.17 min
Wednesday	29.09 min

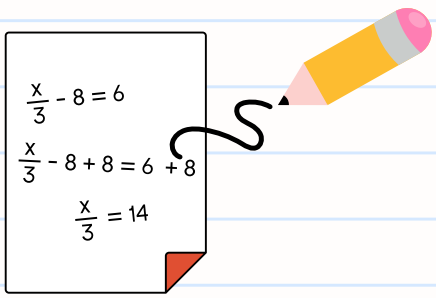
10. A rectangular poster in a stadium measures 13.25 meters on two sides and 9.5 meters on two sides. What is the perimeter of the poster?

Unit 5: Multiply Multi-Digit Whole Number



MCQs

11	Write a power of as a multiplication expression with factors of 10	1-12	137
12	Determine the products of numbers multiplied by powers of 10 written with exponents	1-13	141
13	Use partial products to help multiply multi-digit factors	1-8	153
14	Multiply using an algorithm	9-12	158



FRQs

23	Use an area model and partial products to multiply multi-digit whole numbers	1-8	149

11	Write a power of as a multiplication expression with factors of 10	1-12	137



Write the exponential form as a multiplication expression.

1. 10^4
2. 10^2
3. 10^3
4. 10^6

Write the exponential form.

5. $10 \times 10 \times 10 =$
6. $10 \times 10 \times 10 \times 10 \times 10 =$
7. $10 \times 10 \times 10 \times 10 =$
8. $10 \times 10 =$

Write the exponential form of each power of 10.

9. $10 =$
10. $1{,}000 =$
11. $100 =$
12. $10{,}000 =$

12	Determine the products of numbers multiplied by powers of 10 written with exponents	1-13	141



What is the product? Use patterns to solve.

1. $12 \times 10 =$
   $12 \times 100 =$
   $12 \times 1{,}000 =$
2. $24 \times 1{,}000 =$
   $24 \times 10{,}000 =$
   $24 \times 100{,}000 =$
3. $33 \times 10^2 =$
   $33 \times 10^3 =$
   $33 \times 10^4 =$
4. $57 \times 10^4 =$
   $57 \times 10^5 =$
   $57 \times 10^6 =$

What is the product?

5. 23×10^3
6. 581×10^2
7. 60×10^4
8. 103×10^2

What is the unknown factor?

9. $571 \times$ _____ $= 5{,}710$
10. $43 \times$ _____ $= 4{,}300{,}000$
11. $6 \times$ _____ $= 6{,}000$
12. $28 \times$ _____ $= 280{,}000$

13. How can you describe the relationship between the equations shown?

$6 \times 10^5 = 600{,}000$
$6 \times 10^7 = 60{,}000{,}000$
$6 \times 10^9 = 6{,}000{,}000{,}000$

A B C

Find the unknown partial products. Then find the product.

1.

$$\begin{array}{r} 325 \\ \times \quad 73 \\ \hline 21{,}000 \\ 1{,}400 \\ 350 \\ \square \\ \square \\ + \quad \square \\ \hline \square \end{array}$$

2.

$$\begin{array}{r} 104 \\ \times \quad 28 \\ \hline 32 \\ 800 \\ \square \\ + \quad \square \\ \hline \square \end{array}$$

3.

$$\begin{array}{r} 17 \\ \times 86 \\ \hline \end{array}$$

What is the product? Use partial products to solve.

4.

$$\begin{array}{r} 24 \\ \times 129 \\ \hline \end{array}$$

5.

$$\begin{array}{r} 36 \\ \times 93 \\ \hline \end{array}$$

6.

$$\begin{array}{r} 222 \\ \times 58 \\ \hline \end{array}$$

7. A sporting goods store sold 24 mountain bikes. How much money did they make selling bikes?



8. The store also sold 12 mountain bike and scooter packages each for $367. How much money did they make?

A B C

9. STEM Connection Hiro knows that Lake Michigan is 922 feet deep. He knows that the Atlantic Ocean is 28 times as deep. How deep is the Atlantic Ocean?



10. Joey earns $355 a week mowing lawns. How much money does he earn in 6 weeks?

11. The pedometer shows the number of steps Maria walks each day. How many steps did she walk after 7 days?



12. On a road trip, Emily and her family listen to 3 podcasts. Each one is 45 minutes long. For how many seconds do they listen to podcasts?

23	Use an area model and partial products to multiply multi-digit whole numbers	1-8	149

Complete the area model. Then solve to find the product.

1.

	100	+ 50	+ 4
30	3,000		
+			
6	600		

2.

	400	+ 20	+ 1
50	20,000		50
+			
2			

What is the product? Use area models to solve.

3. 15 × 24 = _____

	24
15	

4. 28 × 132 = _____

	132
28	

5. 33 × 78 = _____

6. 72 × 225 = _____

Write the multiplication equation based on the area model. Then solve to find the product.

7.

	200	+ 10	+ 8
20			
+			
8			

8.

	400	+ 10	+ 6
60			
+			
3			

Unit 6: Multiply Decimals

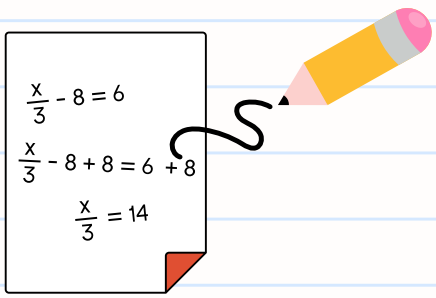


MCQs

15	Use patterns to multiply a decimal by a power of 10	1-7	175

16	Estimate products of decimals to assess if calculations are reasonable	14-17	180

17	Use generalizations to determine the placement of digits in a product	4-11	193



FRQs

24	Represent Multiplication of decimals	Learn	182
	Understand a variety of strategies to solve multiplication equations involving decimals	1-7	197

15	Use patterns to multiply a decimal by a power of 10	1-7	175



Write the multiplication expression using factors of 10. Then, find the value.

1. 3.6×10^2

2. 7.2×10^3

3. 4.8×10^4

4. 1.9×10^2

5. Ashley rides the train to visit her grandmother. She lives 1.2×10^2 miles away from her grandmother. How many miles does she travel?

6. Juan walks 4.7×10^3 meters from his house to the museum. Mary walks 9.3×10^2 meters from her house to the museum. Who walks farther, Juan or Mary? How do you know?

7. **Error Analysis** Sasha multiplied the decimals as shown. How can you help Sasha understand the patterns in multiplying decimals by powers of 10?

$3.5 \times 10^2 = 3{,}500$
$3.5 \times 10^3 = 35{,}000$
$3.5 \times 10^4 = 350{,}000$

16	Estimate products of decimals to assess if calculations are reasonable	14-17	180



14. Anna has $40 to spend on downloading music. If each song costs $1.29, does she have enough money to download 16 songs? Explain how you can use estimation to solve.

15. Is the product reasonable? Explain.

$5.86 \times 9.3 \stackrel{?}{=} 64.5$

16. STEM Connection Maya has 3.8 liters of a solution. She needs 4.3 times more than she already has. About how many liters of the solution does she need?



17. Write two expressions that could be used to find a range of reasonable estimates for the product 10.25 × 5.89.

17	Use generalizations to determine the placement of digits in a product	4-11	193



What is the product? Use patterns to solve.

4. 45 × 17 = 765
45 × 1.7 = _
45 × 0.17 = _

5. 32 × 14 = _
32 × 1.4 = 44.8
3.2 × 1.4 = _

6. 16 × 89 = 1,424
16 × 8.9 = _
16 × 0.89 = _

7. 61 × 22 = _
6.1 × 22 = 134.2
6.1 × 2.2 = _

8. 96 × 55 = _
96 × 5.5 = _
9.6 × 5.5 = 52.8

9. 19 × 42 = _
1.9 × 42 = 79.8
1.9 × 4.2 = _

10. 67 × 34 = _
67 × 3.4 = _
6.7 × 3.4 = _

11. 82 × 67 = _
82 × 6.7 = _
8.2 × 6.7 = _

Learn

Jonah will make 5 turkey sandwiches. He will use 0.04 pound of lettuce for each sandwich. Lettuce costs $0.90 per pound.

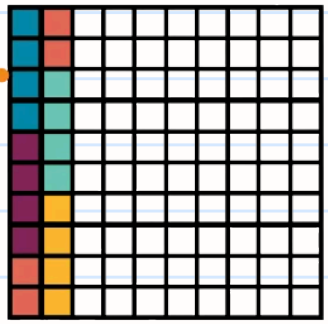
How can you determine the cost of lettuce for all 5 sandwiches?

You can use decimal grids to help you solve the problem.

Find the total amount of lettuce, p.

$5 \times 0.04 = p$

Show 5 groups of 0.04.



There are 20 hundredths of the whole shaded.

Jonah needs 0.2 pound of lettuce to make all 5 sandwiches.

Find the total cost, c.

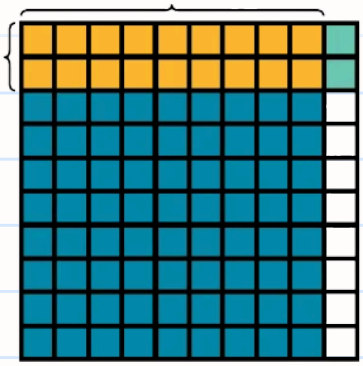
$0.2 \times 0.9 = c$

There are 18 hundredths of the whole shaded.

The cost of lettuce for 5 sandwiches is $0.18.

Shade 0.9 of the whole.

Shade 0.2 of 0.9.



Math is... Modeling

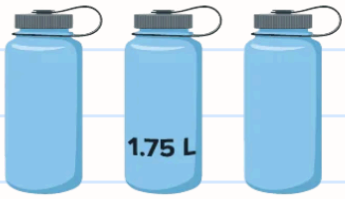
How do decimal grids help you understand multiplying decimals?

What is the product? Explain the strategy you used to solve.

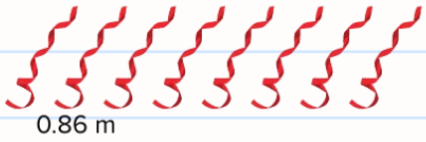
1. $2.9 \times 0.7 = d$

2. $5.6 \times 3.2 = b$

3. Each bottle holds the same amount. How much water can these bottles hold?



4. Rebecca cut these ribbons to the same length. How much ribbon did Rebecca use in all?



5. Experts recommend that people have 4.7 grams of potassium per day. Last week Marcus averaged 0.9 times as much potassium as the recommendation. How much potassium did Marcus average each day last week?

6. A pitcher has a capacity of 3.9 liters. A cooler has a capacity 9.2 times greater. What is the capacity of the cooler?

Solve. Explain the strategy used to solve.

7. Kara has a bag of apples. Each apple weighs 0.4 pound on average. There are 17 apples in her bag. What is the total weight of her apples?

Unit 7: Divide Wole Numbers

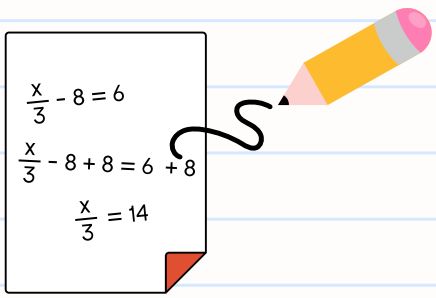


MCQs

18	Use patterns to determine the quotient when dividing by a multiple of 10	1-10	209

19	Use the relationship between multiplication and division to determine the quotient when dividing by a two-digit divisor	1-10	217

20	Record partial quotients using a strategy	Learn	224
		1-5	225



FRQs

25	Use partial quotients to solve division problems, which sometimes include a remainder	Learn	228
		6-9	230

18	Use patterns to determine the quotient when dividing by a multiple of 10	1-10	209



Use a basic fact and patterns to solve.

1. $15 \div \_\_\_\_ = 5$

   $150 \div 30 = \_\_\_\_$

   $\_\_\_\_ \div 30 = 50$

   $15{,}000 \div \_\_\_\_ = \_\_\_\_$

2. $32 \div 8 = \_\_\_\_$

   $\_\_\_\_ \div 80 = \_\_\_\_$

   $3{,}200 \div \_\_\_\_ = \_\_\_\_$

   $\_\_\_\_ \div \_\_\_\_ = \_\_\_\_$

3. $20{,}000 \div 40 =$
4. $15{,}000 \div 30 =$
5. $18{,}000 \div 60 =$
6. $16{,}000 \div 80 =$
7. $8{,}000 \div 40 =$
8. $25{,}000 \div 50 =$
9. $32{,}000 \div 80 =$
10. $9{,}000 \div 30 =$

19	Use the relationship between multiplication and division to determine the quotient when dividing by a two-digit divisor	1-10	217



1. How many groups of 23 can you make from 184?

2. How many groups of 14 can you make from 700?

3. How many groups of 12 can you make from 192?

4. How many groups of 18 can you make from 720?

Solve for the unknown.

5. $396 \div 12 = n$

   $n \times 12 = 396$

6. $448 \div 16 = s$

   $s \times 16 = 448$

7. $312 \div 52 = m$

   $m \times 52 = 312$

8. $533 \div 41 = a$

   $a \times 41 = 533$

9. The fifth-grade class is setting up for a performance. They need to set up enough chairs for 280 people. The chairs are set up in rows of 35. How many rows will they have?

10. Merrick wants to organize his trading cards into a binder. He can fit 18 cards in each plastic sheet in the binder. He has 1,440 cards. How many plastic sheets will he need?



20	Record partial quotients using a strategy	Learn	224
		1-5	225

A B C

Learn

An adult bison weighs 1,752 pounds, which is 24 times the weight of a bison calf.



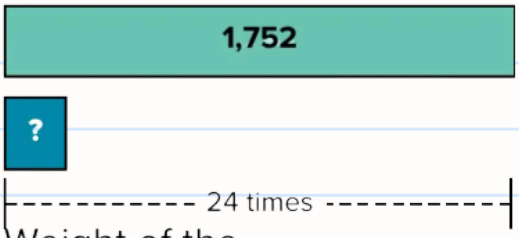
How much does the bison calf weigh?

You can use partial quotients to solve division equations.

A bar diagram can represent the problem.

$1{,}752 \div 24 = l$.

Weight of the adult bison



Math is... Connections

What is another way to show multiplicative comparison?

Use partial quotients to solve.

$$
\begin{array}{r|l}
24\overline{)\,1{,}752} & \\
-1{,}200 & 50 \\
\hline
552 & \\
-480 & 20 \\
\hline
72 & \\
-72 & 3 \\
\hline
0 & 73
\end{array}
$$

$1{,}752 \div 24 = 73$

The bison calf weighs 73 pounds.

What is the quotient? Use partial quotients to solve.

1. 819 ÷ 39 = ____

2. 988 ÷ 26 = ____

3. 1,215 ÷ 27 = ____

4. 3,432 ÷ 66 = ____

5. **STEM Connection** An astronomer is studying two comets. Comet A has an orbit that is 187 years. Comet A has an orbit that is 17 times as long as the Comet B. How long is the orbit of the Comet B?



25	Use partial quotients to solve division problems, which sometimes include a remainder	Learn	228
		6-9	230

Learn

Rahim will fill bags with tortillas. He has bags that hold 12 tortillas and bags that hold 16 tortillas.

Which size bag should he use if he wants no tortillas left over?



276 tortillas

If Rahim uses the bags that hold 16 tortillas,
$276 \div 16 = b$.

$$\begin{array}{r|l} 16\overline{)276} & \\ -160 & 10 \\ \hline 116 & \\ -112 & 7 \\ \hline 4 & 17 \end{array}$$

The **remainder** is 4.

He will have 4 tortillas left over.

Math is... Reasonableness

How can you check your solution when there is a remainder?

If Rahim uses the bags that hold 12 tortillas,
$276 \div 12 = t$.

$$\begin{array}{r|l} 12\overline{)276} & \\ -240 & 20 \\ \hline 36 & \\ -36 & 3 \\ \hline 0 & 23 \end{array}$$

The remainder is 0.

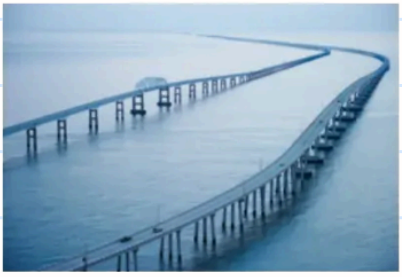
He will have no tortillas left over.

Rahim should use bags of 12 tortillas.

You can use partial quotients to divide. Sometimes the quotient has a remainder.

8. Lily's town is hosting a race. She bought 1,525 water cups to pass out to the runners. She wants to distribute the cups equally to 14 water stations. When she finishes, how many are remaining?

7. One bridge in Maryland is 6,946 meters long. It is 46 times as long as another nearby bridge. How long is the shorter bridge? Explain.



8. Amir has a collection of 936 trading cards. He wants to put them in boxes with 25 trading cards in each box. How many boxes will Amir fill? How many trading cards will be left over?

9. **Extend Your Thinking** A florist has 476 carnations. She wants to put the same number of carnations in each vase with no carnations left over. Should she put 14 or 18 carnations in each vase? Explain your answer.



IMPORTANT! Notes:



IMPORTANT! Notes:



IMPORTANT! Notes:



IMPORTANT! Notes: