Name Date Time

STUDY LINK 4•1

Place-Value Puzzles

Use the clues to write the digits in the boxes and find each number.

1.
- Write 5 in the tens place.
- Find $\frac{1}{2}$ of 24. Subtract 4. Write the result in the hundreds place.
- Add 7 to the digit in the tens place. Divide by 2. Write the result in the thousands place.
- In the ones place, write an even number greater than 2 that has not been used yet.

1,000s	100s	10s	1s

2.
- Divide 15 by 3. Write the result in the hundredths place.
- Multiply 2 by 10. Divide by 10. Write the result in the ones place.
- Write a digit in the tenths place that is 4 more than the digit in the hundredths place.
- Add 7 to the digit in the ones place. Write the result in the thousandths place.

100s	10s	1s		0.1s	0.01s	0.001s
			.			

3.
- Write the result of 6 * 9 divided by 18 in the ones place.
- Double 8. Divide by 4. Write the result in the thousandths place.
- Add 3 to the digit in the thousandths place. Write the result in the tens place.
- Write the same digit in the tenths and hundredths place so that the sum of all the digits is 14.

10s	1s		0.1s	0.01s	0.001s
		.			

Practice

Write true or false.

4. 6 * 5 = 15 + 15 _____ **5.** 15 + 7 < 13 − 8 _____ **6.** 72 / 9 > 9 _____

Name Date Time

STUDY LINK 4·2

Decimals All Around

Find examples of decimals in newspapers, in magazines, in books, or on food packages. Ask people in your family for examples.

Write your numbers below or, if an adult says you may, cut them out and tape them on this page. Be sure to write what the numbers mean. For example, "The body temperature of a hibernating dormouse may go down to 35.6°F."

Practice

Write true or false.

1. 286 + 286 = 462 _____
2. 907 − 709 = 200 _____
3. 641 + 359 = 359 + 641 _____
4. 2,345 − 198 = 2,969 − 822 _____

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SL 4-4-2 Option B: **Decimals All Around** **Name** _____

Use a separate sheet of paper if you need more work space for any of these problems. ***No Calculators.***

Find examples of decimals in newspapers, in magazines, in books or on food packages. Ask people in your family for examples.

Write the decimal numbers you find on the lines below, or if an adult says you may, cut them out and tape them on this page. Be sure to write what the numbers mean. For example, "the body temperature of a hibernating dormouse may go down to 35.6°F."

1. ***Example:*** If three circles(O O O) is one whole, what is $\frac{1}{2}$ of a whole?

   Answer: One half is: $1\frac{1}{2} circles.$

   a. If four circles (O O O O) is $\frac{1}{10}$ of a whole, what is one whole?

   Answer: _____

   b. If eight circles (O O O O O O O O) is one whole, what is $\frac{1}{16}$ of a whole?

   Answer: _____

   c. If two circles (O O) is one whole, what is $\frac{1}{8}$ of a whole?

   Answer: _____

   d. If six circles (O O O O O O) is $\frac{4}{10}$ of a whole, what is one whole? Explain how you got your answer.

   Answer: _____ ***Explain...***

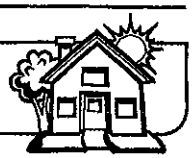
2. True or False

   a. 641 + 359 = 359 + 641 _____ b. 286 + 286 = $\frac{1144}{2}$ _____

Name Date Time

STUDY LINK 4•3

Ordering Decimals



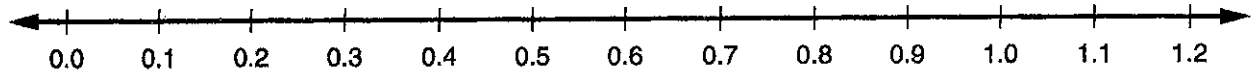
Mark the approximate locations of the decimals and fractions on the number lines below. Rename fractions as decimals as necessary.

1.

A 0.33 *B* 1.6 *C* 0.7 *D* 1.01

E 1.99 *F* 1.33 *G* 0.1 *H* 0.8

2.



I 0.67 *J* 0.05 *K* $\frac{75}{100}$ *L* 0.49 *M* 0.99

N 1.15 *O* $\frac{25}{100}$ *P* 0.101 *Q* 0.55 *R* 0.88

Use decimals. Write 3 numbers that are between the following:

3. \$5 and \$6 \$_____ \$_____ \$_____

4. 4 centimeters and 5 centimeters _____ cm _____ cm _____ cm

5. 21 seconds and 22 seconds _____ sec _____ sec _____ sec

6. 8 dimes and 9 dimes \$_____ \$_____ \$_____

7. 2.15 meters and 2.17 meters _____ m _____ m _____ m

8. 0.8 meter and 0.9 meter _____ m _____ m _____ m

Practice

9. $x + 17 = 23$ $x =$ _____ **10.** $5 * n = 35$ $n =$ _____ **11.** $32 / b = 4$ $b =$ _____

Name _____ Date _____ Time _____

STUDY LINK 4•4

Railroad Tunnel Lengths

The table below shows the five longest railroad tunnels in the world.

Tunnel	Location	Year Completed	Length in Miles
Seikan	Japan	1988	33.46
Channel	France/England	1994	31.35
Moscow Metro	Russia	1979	19.07
London Underground	United Kingdom	1939	17.30
Dai-Shimizu	Japan	1982	13.98

Use estimation to answer the following questions.

1. Which two tunnels have a combined length of about 60 miles?

_____ and _____

2. Which of the following is closest to the combined length of all five tunnels? Choose the best answer.

- ⬭ Less than 90 miles
- ⬭ Between 90 and 130 miles
- ⬭ Between 130 and 160 miles
- ⬭ More than 160 miles

3. Explain how you solved Problem 2.

_____

_____

4. About how many miles longer is the Channel Tunnel than the Moscow Metro Tunnel?

About _____ miles

Try This

5. The Cascade Tunnel in Washington State is the longest railroad tunnel in the United States. It is about $\frac{1}{4}$ the length of the Seikan. About how long is the Cascade Tunnel?

About _____ miles

Practice

6. $190 + b = 200$ $b =$ _____

7. $g - 500 = 225$ $g =$ _____

SL 4-4-4 Option B: Tunnel Lengths Name _____

Use a separate sheet of paper if you need more work space for any of these problems. ***No Calculators.***

The table below shows the five longest railroad tunnels in the world.

Tunnel	Location	Year Completed	Length in Miles
Seikan	Japan	1988	33.46
Channel	France/England	1994	31.35
Moscow Metro	Russia	1979	19.07
London Underground	United Kingdom	1939	17.30
Dai-Shimizu	Japan	1982	13.98

1. Which of the following is the closest to the combined length of all five tunnels? Choose the best answer and *describe how you made your choice.*

◯ Less than 90 miles ◯ Between 90 and 130 miles

◯ Between 130 and 160 miles ◯ More than 160 miles

Describe how you made your choice.

2. About how much longer is the Channel Tunnel than the Moscow Metro Tunnel? About _____ miles.

3. The average length of the two longest tunnels is about how many times larger than the average length of the three shortest tunnels? Describe how you found your estimate.

Describe your thinking:

4. The Eisenhower/Johnson Tunnel in Colorado is about 1.7 miles long. About how many of these tunnel lengths would fit inside the Channel Tunnel? Describe how you made your estimate.

5. The Cascade tunnel in Washington State is the longest railroad tunnel in the United States. It is about ¼ the length of the Seikan Tunnel. About how long is the Cascade Tunnel?

Practice:

6. $190 + b = 200$ $b =$ _____ **7.** $G - 500 = 225$ $g =$ _____

Name _____ Date _____ Time _____

STUDY LINK 4•5

Addition and Subtraction of Decimals

Add or subtract. Show your work.

1. 96.45 + 23.96 = _____

2. 1.06 + 0.4 = _____

3. 9.87 − 4.69 = _____

4. 0.4 − 0.37 = _____

Write <, >, or = to make each statement true.

5. 2.78 + 9.1 _____ 3.36 + 8.49

6. 0.08 + 0.97 _____ 1.04 + 0.03

7. 13.62 − 4.9 _____ 9.4 − 1.33

8. 9.4 − 5.6 _____ 8.3 − 4.7

9. Name two 3-digit numbers whose sum is 6.54. _____ + _____ = 6.54

10. Name two 3-digit numbers whose difference is 1.52. _____ − _____ = 1.52

Practice

11. 13 = 7 + *s* *s* = _____

12. 8 * *g* = 24 *g* = _____

13. 36 / *p* = 6 *p* = _____

14. *m* / 9 = 8 *m* = _____

SL 4-4-5 Option B: Decimals: Add & Subtract Name _____

Use a separate sheet of paper if you need more work space for any of these problems. ***No Calculators.***

Add or Subtract. Show your work.

1. 19.871 – 4.69 **2.** 0.4 – 0.371 **3.** 96.45 + 18.327

4. One word or phrase in each list does not belong. Cross the word or phrase off the list and write a title for the list in th box above each list.

Tenths	Larger	Triangle	Product
Fractions	Less than	Trapezoid	Sum
Fourths	Equal	Square	Variable
Hundredths	Greater than	Rectangle	Quotient
Decimals	Smaller	Parallelogram	Difference
Thousandths	Inequality	Kite	

Complete each sentence with a number that makes the sentence true.

5. 2.78 + 9.1 < 3.36 + _____ **6.** 0.08 + _____ = 1.04 + 0.03

7. 13.62 – 4.9 > 9.4 - _____ **8.** _____ - 5.6 = 8.3 – 4.7

9. Describe how you found your answer to number 8.

10. Name two four digit numbers whose sum is 6.54. _____ + _____ = 6.54

11. Name two four digit numbers whose difference is 1.52 _____ - _____ = 1.52

Practice.

12. 13 = 7 + 2s **13.** 8 • g = 6 **14.** $\frac{m}{9} = \frac{2}{3}$

Name Date Time

STUDY LINK 4•6

Rising Grocery Prices

The table below shows some USDA grocery prices for the year 2000 and estimates of grocery prices for the year 2025.

SRB 34–37

Grocery Item	Price in 2000	Estimated Price in 2025
dozen eggs	$1.02	$1.78
loaf of white bread	$0.88	$3.31
pound of butter	$2.72	$7.36
gallon of milk	$2.70	$5.65

1. How much more is each item predicted to cost in 2025?

a. eggs _____ **b.** bread _____ **c.** butter _____ **d.** milk _____

2. The year is 2000. You buy bread and butter. You hand the cashier a $20 bill. How much change should you receive? _____

3. The year is 2025. You buy eggs and milk. You hand the cashier a $10 bill. How much change should you receive? _____

4. The year is 2000. You buy all 4 items. What is the total cost? _____

5. The year is 2025. You buy all 4 items. What is the total cost? _____

6. If the predictions are correct, how much more will you pay in 2025 for the 4 items than you paid in 2000? _____

7. Which item is expected to have the greatest price increase? _____

Explain your answer. _____

_____

_____

Practice

8. List the first ten multiples of 3. ____, ____, ____, ____, ____, ____, ____, ____, ____, ____

9. List the first ten multiples of 7. ____, ____, ____, ____, ____, ____, ____, ____, ____, ____

SL 4-4-6 Option B: Rising Grocery Prices Name _____

Use a separate sheet of paper if you need more work space for any of these problems. ***No Calculators.***

The table below shows some USDA grocery prices for the year 2000 and estimates of grocery prices for the year 2025.

Grocery Item	Price in 2000	Estimated Price in 2025
dozen eggs	$1.02	$1.78
loaf of white bread	$0.88	$3.31
pound of butter	$2.72	$7.36
gallon of milk	$2.70	$5.65

1. How much more is each item predicted to cost in 2025?

   a. eggs _____ **b.** bread _____ **c.** butter _____ **d.** milk _____

2. The year is 2000. You buy bread and butter. You hand the cashier a $20 bill. How much change should you receive? _____

3. The year is 2025. You buy eggs and milk. You hand the cashier a $10 bill. How much change should you receive? _____

4. If the predictions are correct, how much more will you pay in 2025 for these four items than in 2000?

5. Which item is expected to have the greatest increase in price when compared to the 2000 price? Explain your answer.

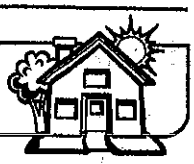
6. List the first five multiples of the prime number 3 that are also multiples of the prime number 7. Describe what all of these multiples have in common.

7. Describe how to find the first five multiples of the prime number 3 that are also multiples of the prime number 11 without listing all the multiples of 3 or 11. Find the first five common multiples

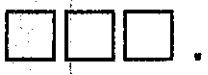
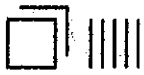
Name Date Time

STUDY LINK 4•7

Tenths, Hundredths, Thousandths



Complete the table. The big cube is the ONE.

Base-10 Blocks	Fraction Notation	Decimal Notation
1. 		
2. 		
3. 		
4. 		

Write each number in decimal notation.

5. $\frac{346}{1{,}000}$ _____

6. $\frac{92}{1{,}000}$ _____

7. $\frac{3}{1{,}000}$ _____

8. $2\frac{7}{10}$ _____

Write each of the following in decimal notation.

9. 536 thousandths _____

10. 23 hundredths _____

11. 7 and 8 thousandths _____

12. 4 tenths _____

Write < or >.

13. 0.407 _____ 0.074

14. 0.65 _____ 0.437

15. 0.672 _____ 0.7

16. 2.38 _____ 2.4

Practice

17. 6.05 + 1.24 = _____

18. _____ = 47.90 + 0.76

19. _____ = 8.71 − 2.78

20. 46.8 − 3.77 = _____

SL 4-4-7 Option B: Tenths, Hundredths, Thousandths Name _____

Use a separate sheet of paper if you need more work space for any of these problems. ***No Calculators.***

Complete the table. The big cube is the ONE.

Base-10 Blocks	Fraction Notation	Decimal Notation
1. 		
2. 		
3. 		
4. 		

5. Write each number in decimal notation.

a. $\frac{346}{1000}$ b. $\frac{92}{1000}$ c. $\frac{3}{1000}$ d. $\frac{427}{100}$ e. $\frac{24,851}{100}$ f. $2\frac{4}{5}$ g. $3\frac{7}{20}$

6. Write each of the following in decimal notation.

a. 536 thousandths _____ b. 837 hundredths _____

c. 7 and 8 thousandths _____ d. 374 tenths _____

7. Write the decimal values in order from least to greatest.

a. 0.407, 0.074, 0.704, 0.740 b. 0.65, 0.473, 0.0981, 0.1980 c. 0.672, 0.07, 0.76, 0.726, 0.7

8. Alana wants to know how to put a list of decimal values in order from least to greatest. Write Alana a note describing to how to do this.

Name _____ Date _____ Time _____

STUDY LINK 4·8

Measuring in Centimeters

Measure each line segment to the nearest centimeter. Record the measurement in centimeters and meters.

Example: _____

a. About 5 centimeters **b.** About 0.05 meter

1. _____

a. About _____ centimeters **b.** About _____ meter

2. _____

a. About _____ centimeters **b.** About _____ meter

3. _____

a. About _____ centimeters **b.** About _____ meter

4. _____

a. About _____ centimeters **b.** About _____ meter

5. _____

a. About _____ centimeters **b.** About _____ meter

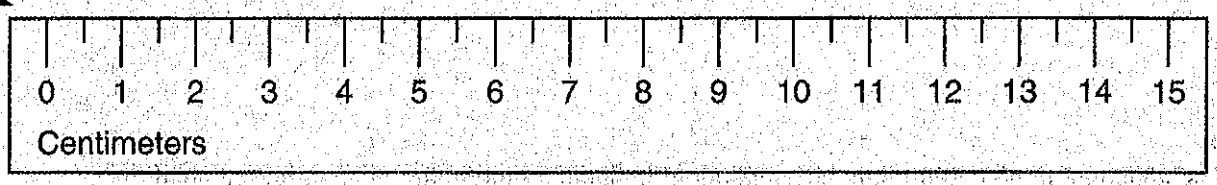
6. _____

a. About _____ centimeters **b.** About _____ meter

Practice

7. _____ = 10.06 + 10.04 **8.** 38.93 + 92.4 = _____

9. 16.85 − 14.23 = _____ **10.** _____ = 20.9 − 8.57



SL 4-4-8 Option B: Decimals: Add & Subtract Name _____

Use a separate sheet of paper if you need more work space for any of these problems. ***Calculators OK.***

Measure each line segment to the nearest centimeter. Record the measurement in centimeters and meters.

Example: _____

a. About __4__ centimeters **b.** About .0.04 meter

1. _____

a. About _____ centimeters **b.** About _____ meter

2. _____

a. About _____ centimeters **b.** About _____ meter

3. _____

a. About _____ centimeters **b.** About _____ meter

4. _____

a. About _____ centimeters **b.** About _____ meter

5. One inch is about 2.54 cm. Use this fact to convert the following measures to centimeters.

a. 8 inches **b.** 2 feet **c.** 1 yard

6. One inch is about 2.54 cm. Use this fact to convert the following measures to inches.

a. 28cm **b.** 42mm **c.** 1m

7. Explain how you made the conversion in problem 6b.

Practice:

Find to make each sentence true.

8. $10.4 + 2x = 20.6$ **9.** $x - 39.93 = 131.33$ **10.** $\frac{x}{2} + 14.23 = 16.85$

Name _____ Date _____ Time _____

STUDY LINK 4•9

Metric Measurements

1. Use your personal references to estimate the lengths of 4 objects in metric units. Then measure each object. Record your estimates and measurements.

Object	Estimated Length	Actual Length

Complete.

2. 18 cm = _____ mm
3. _____ cm = 40 mm
4. 3 m = _____ mm
5. 4 m = _____ cm
6. _____ m = 700 cm
7. 4.6 m = _____ cm
8. 7.94 m = _____ cm
9. _____ m = 450 cm
10. _____ m = 23 cm
11. 0.6 m = _____ cm

Measure each line segment to the nearest $\frac{1}{2}$ cm.

12. _____

About _____ centimeters

13. _____

About _____ centimeters

Practice

Insert < or >.

14. 0.68 _____ 0.32
15. 9.13 _____ 9.03
16. 0.65 _____ 0.6

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SL 4-4-9 Option B: Metric Measures Name _____

Use a separate sheet of paper if you need more work space for any of these problems. ***No Calculators.***

1. Use your personal references to estimate the lengths of 4 objects in metric units. Then measure each object. Record your estimates and measurements.

Object	Estimated Length	Actual Length

Complete.

2. 18 cm = _____ mm

3. 4 m = _____ cm

4. _____ mm = 700 cm

5. 4.6 m = _____ mm

6. _____ m = 23 mm

7. 0.001 m = _____ cm

8. _____ m = 4.5 cm

9. 23 mm = _____ cm = _____ m

Measure each line segment to the nearest millimeter.

10. _____ About _____ mm *or about* _____ cm

11. _____ About _____ mm *or about* _____ cm

12. One kilometer (km) is 1000 meters. Explain how to convert 4.24 km to centimeters.

13. One kilometer (km) is 1000 meters. Explain how to convert 28 cm to kilometers.

14. Order the list from shortest to longest length. Explain your thinking and work.

234 cm 1234 mm 2.43 m 0.02 km

Name Date Time

STUDY LINK 4•10

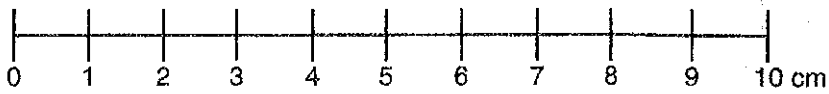
Decimals and Metric Units

Symbols for Metric Units of Length
meter (m)
centimeter (cm)
decimeter (dm)
millimeter (mm)

1 decimeter

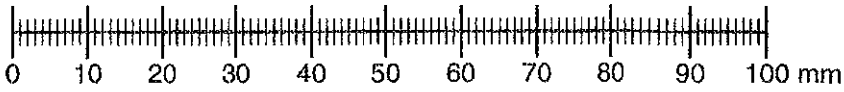
1 m = 10 dm 1 dm = 0.1 m

10 centimeters



1 m = 100 cm 1 cm = 0.01 m
1 dm = 10 cm 1 cm = 0.1 dm

100 millimeters



1 m = 1,000 mm 1 mm = 0.001 m
1 dm = 100 mm 1 mm = 0.01 dm
1 cm = 10 mm 1 mm = 0.1 cm

Use your tape measure or ruler to help you fill in the answers below.

1. a. 4.2 cm = 42 mm **b.** 64 mm = 6.4 cm **c.** 2.6 m = 260 cm

2. a. 6.5 cm = _____ mm **b.** 26 mm = _____ cm **c.** 6.1 m = _____ cm

3. a. 5 cm = _____ mm **b.** 30 mm = _____ cm **c.** 3 m = _____ cm

4. a. 80 cm = _____ mm **b.** 110 mm = _____ cm **c.** _____ m = 500 cm

5. a. 43 cm = _____ mm **b.** 98 mm = _____ cm **c.** _____ m = 34 cm

6. a. 0.6 cm = _____ mm **b.** 4 mm = _____ cm **c.** 5.2 m = _____ mm

Practice

7. 21, 49, and 56 are multiples of _____.

8. 45, 63, and 18 are multiples of _____.

SL 4-4-10 Option B: **Decimals & Metric Units** **Name** _____

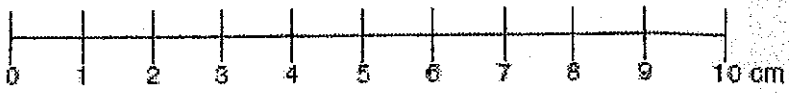
Use a separate sheet of paper if you need more work space for any of these problems. ***No Calculators.***

Symbols for Metric Units of Length
meter (m)
centimeter (cm)
decimeter (dm)
millimeter (mm)

1 decimeter

1 m = 10 dm 1 dm = 0.1 m

10 centimeters



1 m = 100 cm 1 cm = 0.01 m
1 dm = 10 cm 1 cm = 0.1 dm

100 millimeters

1 m = 1,000 mm 1 mm = 0.001 m
1 dm = 100 mm 1 mm = 0.01 dm
1 cm = 10 mm 1 mm = 0.1 cm

Use your tape measure or ruler to help you fill in the answers below.

1. **a.** 4.2 cm = 42 mm **b.** 64 mm = 6.4 cm **c.** 2.6 m = 260 cm
2. **a.** 6.5 cm = _____ dm **b.** 26 mm = _____ dm **c.** 6.1 dm = _____ cm
3. **a.** 5 cm = _____ mm **b.** 30 mm = _____ cm **c.** 3 m = _____ cm
4. **a.** 80 cm = _____ mm **b.** 110 dm = _____ cm **c.** _____ m = 500 cm
5. **a.** 43 dm = _____ mm **b.** 98 mm = _____ cm **c.** _____ m = 34 cm
6. **a.** 0.6 cm = _____ mm **b.** 4 mm = _____ cm **c.** 5.2 m = _____ dm

7. Find the first five multiples of 3 that are also multiples of 5. Are all of these numbers multiples of 15? Explain why or why not.

8. Find the first five multiples of 4 that are also multiples of 6. Are all of these numbers multiples of 24? Explain why or why not.