

Watch Your Knowledge Grow

This is the math you'll explore in this unit. Rate your understanding to see how your knowledge grows!



l can	Before	After
Estimate to determine the product in multiplication problems.	0-0-0	0-0-0
Multiply a three-digit number by a two-digit number using the standard algorithm.	0-0-0	0-0-0
Estimate to determine the quotient of up to a four-digit dividend and a two-digit divisor.	0-0-0	0-0-0
Divide a four-digit dividend by a two-digit divisor using partial quotients.	0-0-0	0-0-0
Divide a four-digit dividend by a two-digit divisor using the standard algorithm.	0-0-0	0-0-0
Represent multi-step problems using equations with a letter standing for the unknown.	0-0-0	0-0-0
Solve multi-step problems using equations with a letter standing for the unknown.	0-0-0	0-0-0
Simplify expressions that include up to 2 levels of grouping.	0-0-0	0-0-0
Define income tax, payroll tax, sales tax, and property tax.	0-0-0	0-0-0
Explain the difference between gross income and net income.	0-0-0	0-0-0
Identify the advantages and disadvantages of different payment methods.	0-0-0	0-0-0



Multi-Digit Multiplication

Unit Story: Andrea



saknarin srijan/Shutterstock.com

What would you need to know to calculate how much taffy it would take to cover your school?

TEKS 5.1.A, 5.1.B, 5.1.E, 5.1.G, Building Toward 5.3.A

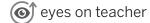
Explore: Estimation Station

How can you get as close as possible to a target product?



Warm-Up





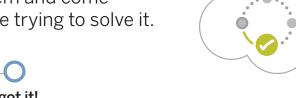
Discuss Where did you see math in this story?



- Choose 2 target products from the Target Product bank.
- Write a multiplication expression that results in a product as close as possible to the target product.
- Create a poster.

Ways to be a mathematician

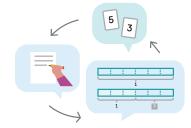
1 I can take my time to think about a challenging problem and come up with a plan before trying to solve it.



Not yet Almost I got it!

2 I can create representations to share and organize my mathematical ideas.





I can explain why my mathematical ideas make sense.





Answering Andrea's Questions

Let's multiply to determine products and use estimation to check for reasonableness.



Warm-Up





We are a math community.
How is being a member of a math community helpful for mathematicians?

Activity

1

Andrea's Wonderings, Part 1

For each problem, write an equation to represent an estimate. Then solve each problem using any strategy.

- Andrea imagines covering the floor of every bathroom in the school with connecting cubes. She thinks it will take 2,318 connecting cubes to cover 1 bathroom floor. Using Andrea's prediction, how many connecting cubes will it take to cover the floors of all 9 bathrooms in the school?
 - Show your thinking.

estimate equation:

answer:

Andrea's Wonderings, Part 1 (continued)

- 2 Andrea then imagines that each classroom has 18 pet hamsters. If there are 39 classrooms, how many pet hamsters would be at the school?
 - i Show your thinking.

estimate equation: _____

- 3 Discuss
 - Compare your estimates with your answers for each problem. Are your estimates reasonable? How do you know?
 - How does estimating before solving help you make sure your answer is reasonable?

Andrea's Wonderings, Part 2

For each problem, write an equation to represent an estimate. Then solve each problem using any strategy.

- 4 Andrea wonders about the amount of water used by all 9 schools in Gil's town in 1 year. If each school uses 42,318 gallons of water each year, how many gallons do all the schools use in 1 year?
 - estimate equation:

Andrea's Wonderings, Part 2 (continued)

Andrea wonders about the books in the library. She counts 29 shelves. If each shelf has 318 books, how many books are in the library?

estimate equation: _____

in the library?

Show your thinking.

answer: _____

6 Discuss

Join another pair.

- Are each of your answers reasonable? How do you know?
- Share and compare your strategies for each problem. How are they similar? How are they different?
- Share and compare your partial products for each problem. How are they similar? How are they different?

Summary 3.02

You can use what you know about estimation and place value to multiply multi-digit numbers and check for reasonableness.

18 × 39

estimate:

$$20 \times 40 = 800$$

	30	9
10	300	90
8	240	72

$$300 + 240 + 90 + 72 = 702$$

702 is a reasonable product because it is close to the estimated product of 800.

Practice 3.02

For Problems 1 and 2, write an equation to represent an estimate. Then determine the product and check for reasonableness.

- i Show your thinking.
- 1 3,516 × 8 estimate equation:

- i Show your thinking.
- **2** 48 × 45

estimate equation:

answer:

- 3 Choose the best estimate for the expression 954×73 .
 - (A) $900 \times 70 = 63,000$
- (B) $1,000 \times 80 = 80,000$
- (\mathbf{C}) 80 × 70 = 56,000
- (\mathbf{D}) 1,000 × 60 = 60,000
- 4 Determine the value of the expression 954×73 from Problem 3.
 - i Show your thinking.

(B)

- 5 Which area model represents the product 782 × 63?
 - A 7 8 2 6 42 48 12 3 21 24 6
- 700 80 2 6 4,200 480 12 3 2,100 240 6
- C
 700
 80
 2

 60
 42,000
 4,800
 120

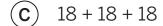
 3
 2,100
 240
 6
- D 700 8 2 60 42,000 480 120 3 2,100 24 6

Spiral Review

Which expressions represent the volume of the rectangular prism in cubic feet? Select *all* that apply.



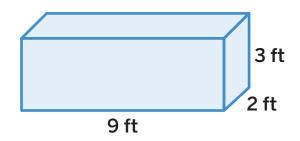
B 9 × 5



(**D**) 18 × 2



(F) (9 × 2) × 3



For Problems 7–10, determine the value of the expression.

7 80 × 80 _____

8 70 × 90 _____

9 1.224 ÷ 4 _____

10 4,510 ÷ 5 _____

Miles of Fun

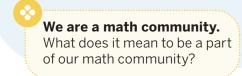
Let's record partial products.



Warm-Up







Activity

1

Partial Products Everywhere

Estimate each product and write an equation. Then evaluate the expression using a partial products strategy.

Show your thinking.

1 16 × 349

estimate equation:

answer: _____

2 40 × 851

estimate equation:

Partial Products Everywhere (continued)

In 1969, the Apollo 11 mission traveled from Earth to the Moon. This fulfilled President John F. Kennedy's commitment to sending the first-ever astronauts to land on the moon and return safely to Earth.

(i)	Show your thinking.
3	Andrea wonders, "If Apollo 11 orbited the Moon for 21 hours with an average speed of 2,200 miler per hour, how many miles did Apollo 11 orbit around the Moon?"
	estimate equation:
 	answer:
4	Andrea wonders, "If it took 76 hours for Apollo 11 to reach the Moon's
	orbit traveling at an average speed of 24,000 miles per hour, how many miles did Apollo 11 travel to reach the Moon's orbit?"
	many miles did Apollo 11 travel to reach the Moon's orbit?"
	many miles did Apollo 11 travel to reach the Moon's orbit?"

Grade 5 Unit 3 Lesson 3 Activity 1

answer:

Summary 3.03

When multiplying multi-digit numbers, whether you decompose factors by place value or another way, the sum of all the partial products will be the same. The more you decompose each factor, the more partial products you will have.



				6,000
				1, 400
	200	80	4	2,400
30	6,000	2,400	120	560
30	0,000	2,400	120	120
7	1,400	560	28	+ 28
•	1,400	300	20	10,508

284×37

$$(200 + 80 + 4) \times (30 + 7)$$

 $200 \times 30 = 6,000$
 $200 \times 7 = 1,400$
 $80 \times 30 = 2,400$
 $80 \times 7 = 560$
 $4 \times 30 = 120$
 $4 \times 7 = 28$
 $6,000 + 1,400 + 2,400 = 9,800$
 $560 + 120 + 28 = 708$
 $9,800 + 708 = 10,508$

Practice 3.03

1 Complete the statement so that it correctly shows the best estimate for the equation.

$$937 \times 25$$

Select **ONE** correct answer in each box to complete the sentence.

The factor 937 best rounds to

935

and the factor 25 best

rounds to



making the estimate

B 25,000

For Problems 2 and 3, write an equation to represent an estimate of the product. Then determine the product.

- i Show your thinking.
- **2** 54,206 × 7

estimate equation:

answer: _____

3 861 × 52 estimate equation:

- 4 Which expression has the greatest product? Explain your thinking.
 - (A) 1,622 × 34
- **B** 1,525 × 32
- (c) 1,579 × 30
- **D**) 1,614 × 33

Spiral Review

A box is filled with cubes. Each cube has a volume of 1 cubic centimeter. The base layer is shown. It takes 4 layers to fill the entire box. What is the volume of the box?



For Problems 6-9, determine the value of the expression.

- **6** 60 × 60 _____
- **7** 20 × 80 _____
- **8** 8,190 ÷ 9 _____
- **9** 5,607 ÷ 7 _____

For Problems 10 and 11, identify whether the number is a prime number or a composite number.

10 13 _____

11 25 _____

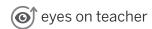
Partial Products Everywhere

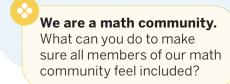
Let's use what we know about place value to multiply multi-digit numbers.



Warm-Up







Activity

1

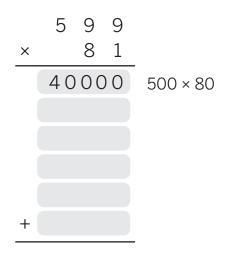
Trying an Algorithm

Complete each multiplication problem by filling in the partial products. The first partial product has been provided for you.



Trying an Algorithm (continued)

3



4

Compare (

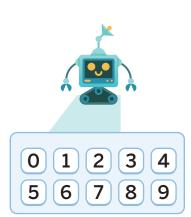
Let's compare 2 strategies.



What's Missing?

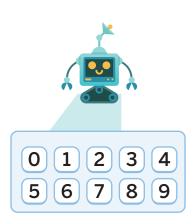
Help Clare by determining the missing digits in the factors.

5



	3 1
×	7
	56
	70
	2100
+	21000
	23226

6

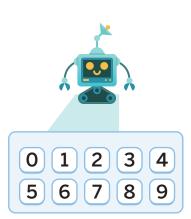


Date

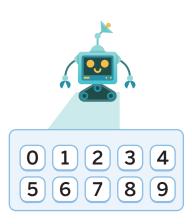
2

What's Missing? (continued)

7



8

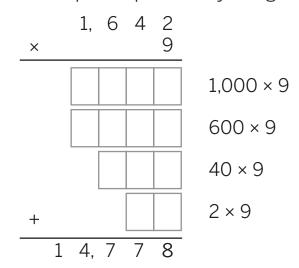


In a partial products algorithm, the value of each digit in one factor is multiplied by the value of each digit in the other factor, and all the partial products are recorded.

Practice 3.04

Write an expression to show how each partial product value was determined.

2 Show the value of each partial product by filling in the boxes.



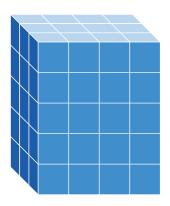
- 3 Determine the product of the expression 252 × 50.
 - **i** Record your answer in the space provided. —

- 4 Use a partial products algorithm to determine the product of the expression 806 × 34.
 - i Show your thinking.

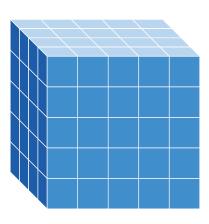
Spiral Review

For Problems 5 and 6, write an expression to represent the volume of the rectangular prism. Then determine the volume.

5



6



expression:

expression: _____

answer: _____

answer: _____

For Problems 7–10, determine the value of the expression.

For Problems 11–14, use the table to determine the conversion.

Multiplication Mayhem

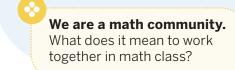
Let's multiply using the standard algorithm.



Warm-Up







Activity

1

The Standard Way

Estimate each product and write an equation. Then evaluate the expression using the standard algorithm.



Show your thinking.

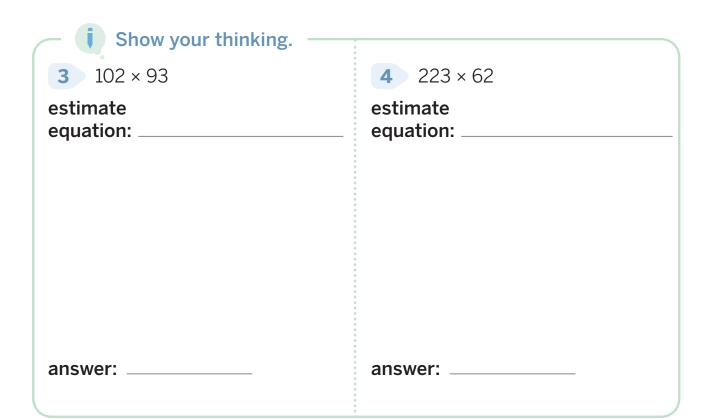
1 875 × 13

estimate equation: _ **2** 26 × 434

estimate equation: _

answer: _ answer: _

The Standard Way (continued)



- 5 Discuss
 - How did you organize your work using the standard algorithm?
 - How did you use estimation to check that your work was reasonable as you solved?

Regrouping Everywhere

Andrea wonders how many ounces of modeling clay it would take to create a new walkway of square tiles from the school to the community garden. She guesses it would take 59 ounces of clay to make 1 square tile. She guesses that 647 square tiles would be needed to make the walkway.

6 About how many ounces of clay would Andrea need to make all of the square tiles for a new walkway? How do you know?

- 7 Use the standard algorithm to determine how many inches of clay Andrea would need to make a new walkway.
 - i Show your thinking.

6 4 7 × 5 9

- 8 Discuss
 - Where do you see the product of each pair of digits you multiplied?
 - Choose 1 regrouped value. What is the value? How do you know?
 - How did you use the regrouped values to determine the final product?

Regrouping Everywhere (continued)

- 9 Write a multiplication expression for your partner to evaluate. There must be:
 - 2 factors.
 - 1 factor with 3 digits and 1 factor with 2 digits.
 - Regrouping in at least 2 places.

Name .

my expression: _____ estimate: _____ my partner's expression: ____ estimate: _____

- Evaluate your expression and your partner's expression from Problem 9 using the standard algorithm.
 - i Show your thinking.

My expression

My partner's expression

answer: _____

- 11 Discuss
 - Which digits did you use to write your multiplication expressions? Why?
 - How did you record any regrouped values? What is their value?

Using the standard algorithm to solve multi-digit multiplication problems helps to organize all of the partial products and regrouped values in an efficient way. Estimating before solving is helpful in monitoring work and checking that the place value of each partial product is accurate.

Estimation	Standard algorithm
300 × 10 = 3,000	regrouped values 295 × 14 1,180 partial products + 2,950 4,130

Practice 3.05

- 1 Determine the product of the expression 477 × 53 using the standard algorithm.
 - Record your answer in the space provided.

For Problems 2 and 3, estimate the product and write an equation. Then determine the product using the standard algorithm.



Show your thinking.

2

estimate equation: _____

325

× 36

answer: _____

3

estimate equation: _____

> 549 × 68

answer: _____

1 bag of red wiggler worms, which are used for composting, is sold for \$44. A sustainable farm purchases 125 bags of worms. Estimate the product and write an equation. Then determine the total cost of the worms.

Show your thinking.

estimate equation:

Diego evaluated the expression 727 × 42. His work is partially shown. Help Diego by completing his work and determining the product.

Spiral Review

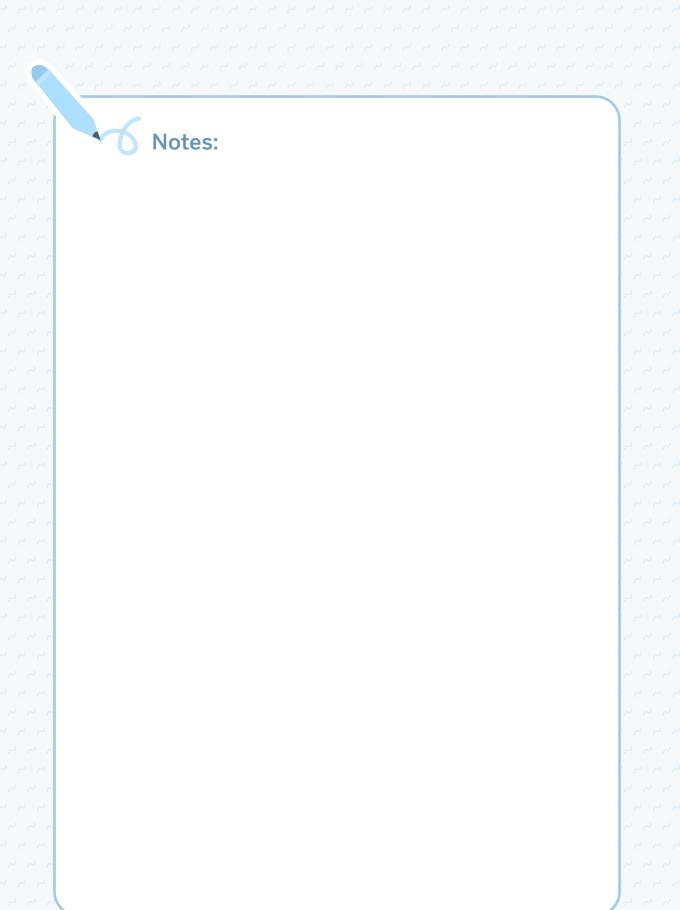
6 Simplify the expression $123(15) \div (5.56 + 3.44)$.



answer: _____

For Problems 7 and 8, determine the value of the expression.

answer: _____





Multi-Digit Division

Unit Story: Andrea



pyzata/Shutterstock.com

What are different tools you could use to measure the height of your school?

Name _____ Date ____

TEKS 5.1.A, 5.1.C, Building Toward 5.3.C

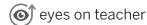
Whose Quotient Is It Anyway?

Let's use different strategies to divide by one-digit divisors.



Warm-Up





We are a math community.
How can being part of a math community help you solve complex problems?

Activity

1

Towers of Guitars and Cans

- Willis Tower is 1,452 feet tall. Andrea wonders how many of her guitars it would take to reach the top of Willis Tower. Andrea's guitar is 3 feet long. How many of her guitars, lined end to end, would Andrea need to equal the height of Willis Tower?
 - i Show your thinking.

Towers of Guitars and Cans (continued)

- 2 Andrea made \$1,452 in 3 months recycling cans from her neighborhood. She made the same amount of money each month. How much money did Andrea make each month recycling cans?
 - i Show your thinking.

- 3 Discuss
 - What does the divisor represent in Problems 1 and 2? The quotient?
 - How is your work in Problems 1 and 2 similar? Different?

Mystery Dividends

Without evaluating, use the digits 0–9 to make 3 different dividends to match the given place value of the quotient. Use each digit only once. You do not have to use all the digits.

Expression	Place value of quotient
÷4	tens
÷ 4	hundreds
÷4	thousands



Mystery Dividends (continued)



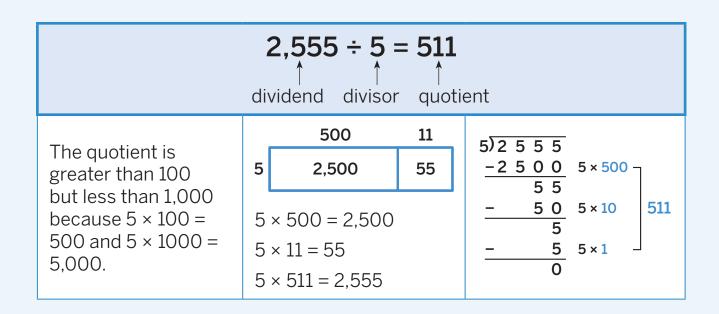
Share your work with another pair.

- How did you determine each dividend?
- Compare your expressions in the first row of the table. Whose expression has a greater number of tens in the quotient? How do you know?



Summary 3.06

When dividing, you can interpret the divisor as the number of groups or the size of each group. Using known facts and place value understanding can help you determine whether the quotient is greater than 1, 10, 100, or 1,000.



Practice 3.06

- 1 Evaluate the expression 628 ÷ 4.
 - i Show or explain your thinking.

For Problems 2 and 3, evaluate the expression.



2 792 ÷ 8

answer: _____

3 972 ÷ 6

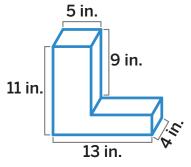
- 4 What is the quotient 392 ÷ 7?
 - A
- 54
- (B)

- **c**) 56
- **D** 55

i Show your thinking. -

Spiral Review

5 Determine the volume of the figure.



i Record your answer in the space provided. —

For Problems 6–9, determine the value of the expression.

- **6** 60 × 40 _____
- **7** 70 × 90 _____

- **8** 40 × 70 _____
- **9** 50 × 50 _____

Date

What Do You Think?

Let's see how partial quotients strategies can be used with a two-digit divisor.



Warm-Up





We are a math community.

How can you show you respect others in your math community even when you disagree with them?

Activity

1

Many Miles

Gil's mom ran the same distance each month for 1 year. By the end of the year, she had run 312 miles. How many miles did she run each month?

1 Circle the estimate that best describes the place value of the quotient.

tens

hundreds

thousands

Many Miles (continued)

- 2 Determine how many miles Gil's mom ran in 1 month.
 - i Show your thinking. -

- 3 Discuss
 - Does your answer match the place value of your estimate? Why does that make sense?
 - What was your first partial quotient? Why?
 - What did you think about to determine the rest of your partial quotients?

Thinking About Thinking

Evaluate each expression using a partial quotients strategy.

Show your thinking.

 $792 \div 22$

5 2.046 ÷ 33

answer: ___

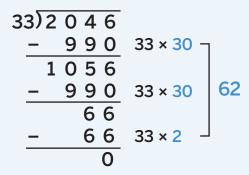
answer: _



- What interpretation of the divisor did you use?
- What was your first partial quotient? Why?
- Compare each other's partial quotients. Are they the same? Different?

Summary 3.07

It is important to think about your thinking when you are determining partial quotients. You can begin by asking yourself, "What is the place value of the quotient?" to help you determine a possible first partial quotient.



I know that the place value of the quotient is in the tens place because 33×10 is 330.33×100 is 3,300, and that would be too much.

I can start by using 10×33 or using another 10.

Practice 3.07

- The land area of Washington, D.C. is about 61 square miles. Rhode Island is about 1,214 square miles. Which is the best estimate for how many times Washington, D.C. can fit inside Rhode Island?
 - (A) 20 times
 - (C) 1 time

- (B) 12 times
- **D** 33 times
- Jada earns \$15 an hour babysitting. She thinks she needs to babysit 3,850 hours to save \$5,775 for her college fund. Do you agree with Jada? Why or why not?

For Problems 3 and 4, determine the quotient using partial quotients.

- i Show your thinking. —
- **3** 3,120 ÷ 65

answer: _____

4 2,597 ÷ 53

- **5** Determine the quotient $6.314 \div 77$.
 - Show your thinking. ———

answer: _____

Spiral Review

6 Shawn cuts a log into 8 pieces that are each $\frac{1}{3}$ of a foot long. Write an equation that represents the length of the log in feet.

For Problems 7 and 8, determine the value of the expression.



Show your thinking.

7 5(17 + 18) + 4(2)

8 10[5 + (14 + 6) ÷ 4]

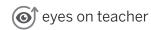
answer: _____

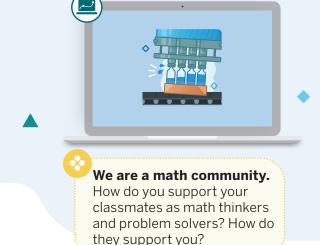
Emptying the Water Tank

Let's use place value to determine partial quotients.

Warm-Up







Activity

1

Bottling Water

A tank contains 612 ounces of water and will fill 18-ounce bottles. Determine the quotient 612 ÷ 18 by choosing the number of bottles to place in a crate. Use up to 5 crates to empty the tank.

number of bottles:

Bottling Water (continued)

- What are other ways that 612 ounces of water can be emptied in up to 5 crates of 18-ounce bottles?
- A tank contains 4,232 ounces of water and will fill 23-ounce bottles. Determine the quotient 4,232 ÷ 23 by choosing the number of bottles to place in a crate. Use up to 5 crates to empty the tank.



Show your thinking. -

number of bottles:

Bottling Water (continued)

5 Discuss

What are other ways that 4,232 ounces of water can be emptied with *fewer* than 5 crates of 23-ounce bottles?

- A tank contains 8,432 ounces of water and will fill 34-ounce bottles. Determine the quotient 8,432 ÷ 34 by choosing the number of bottles to place in a crate. Use the fewest number of crates possible to empty the tank.
 - i Show your thinking. -

number of bottles:

1 4 8 10 20 40 100 200 300

34 × _____ = ____

34 × _____ = ____

34 × ____ = ___

34 × _____ = ____

34 × _____ = ____

answer: _____

7 Let's look at Priya's work.

Summary 3.08

You can use different partial quotients to divide with multi-digit numbers. You can use your understanding of place value to choose 1 partial quotient for each place value in the dividend.

$$\begin{array}{r}
24)7968 \\
-7200 \\
768 \\
-720 \\
48 \\
-48 \\
-48 \\
24 \times 2
\end{array}$$

$$\begin{array}{r}
332 \\
48 \\
-48 \\
24 \times 2
\end{array}$$

$$\begin{array}{r}
7,968 \div 24 = 332
\end{array}$$

Practice 3.08

- 1 A tank contains 5,416 ounces of water and will fill 26-ounce bottles. How many bottles can the tank fill?
 - **i** Record your answer in the space provided.

For Problems 2 and 3, determine the quotient using 5 or fewer partial quotients.

- i Show your thinking.
- **2** 851 ÷ 23

answer: _____

3 7,224 ÷ 43

- 4 Which expression has a quotient of 205?
 - (A) 2,052 ÷ 18
- **B** $6,125 \div 25$
- **(c)** 7,500 ÷ 30
- **(D)** 7,585 ÷ 37

i Show or explain your thinking.

Spiral Review

- A carpenter is building a cargo container in the shape of a rectangular prism. The dimensions of the container are 6 yards by 2 yards by 4 yards. Determine the volume of the container in cubic yards.
- The stem and leaf plot shows the lengths of yarn Andrea's mom has in her sewing kit. What is the difference between the longest length and shortest length?

Yarn Lengths

Leaf
24
125
1778

1|2 means a length of 1.2.

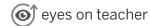
Algorithm Affinity

Let's divide using the standard algorithm.



Warm-Up





We are a math community.

How does it feel to be a member of your math community when you work together to solve problems?

Activity

1

Gil's Music

- 1 Gil used the partial quotients strategy, as shown. Solve the same problem using the standard algorithm.

Show your thinking. —

Gil's partial quotients strategy

$$\begin{array}{r}
12)2940 \\
-1200 \\
1740 \\
-1200 \\
540 \\
-480 \\
60 \\
-60 \\
0
\end{array}$$

$$12 \times 100 \\
12 \times 40 \\
60 \\
-60 \\
12 \times 5 \\
0$$

answer: _____245___

Standard algorithm

answer:

Gil's Music (continued)

2 Discuss

Join another pair.

- Compare the process of the partial products strategy to the standard algorithm.
- What is the same? What is different?
- Choose one of the strategies from Problem 1 to solve.
 The area of the auditorium is 5,232 square feet. The length is 16 feet.
 What is the width of the auditorium?
 - Show your thinking.

 answer:
- 4 Solve using the standard algorithm.

 There are 35 seats in each row of the school auditorium at Gil's school.

 How many rows are needed to seat 1,295 students?
 - i Show your thinking.

 answer:

Remainders Refresh

5 Determine each quotient using the standard algorithm.

Expression A 3,874 ÷ 26	Expression B 9,474 ÷ 26
answer:	answer:

6 Discuss

Share your work with your partner.

- Take turns explaining how you solved each problem.
- How did solving Expression A compare to solving Expression B?
- What does the remainder in Expression B represent?

Remainders Refresh (continued)

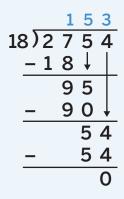
Determine each quotient using the standard algorithm.



answer: _____

Summary 3.09

The standard algorithm is an efficient way to divide multi-digit dividends by two-digit divisors, with or without remainders.



$$2,754 \div 18 = 153$$

Practice 3.09

For Problems 1–3, evaluate the expression using the standard algorithm.

- i Show your thinking.
- **1** 4,221 ÷ 21

i Show your thinking.

2 3,848 ÷ 13

3 1,821 ÷ 17

answer: _____

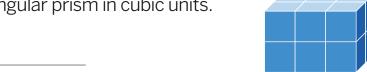
- 4 Diego earns \$14 an hour at his job. He is trying to save \$2,352 for a drum set. How many hours will Diego need to work to save \$2,352?
 - (A) 163
 - (B) 171
 - **(C)** 240
 - **D** 168

- Which expression has a quotient of 104?
 - $804 \div 12$
- (B) 832 ÷ 16 (C) 1,248 ÷ 12
- $1.248 \div 15$

Show or explain your thinking. -

Spiral Review

6 Write an expression with 2 factors that represents the volume of the rectangular prism in cubic units.



7 The stem and leaf plot shows the points Gil scored each time he played a game in the last month. What is the total number of points he scored?

Gil's Scores Stem Leaf 6 47 7 015 188 6|4 means a score of 64.

Show your thinking.

Celery Chop

Let's solve division problems with remainders and represent the quotients as mixed numbers.

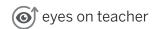


partner help your thinking in

math class?

Warm-Up





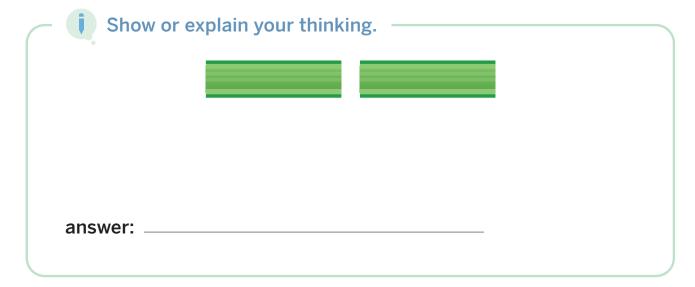
Activity

1

Celery Stalk Remainders

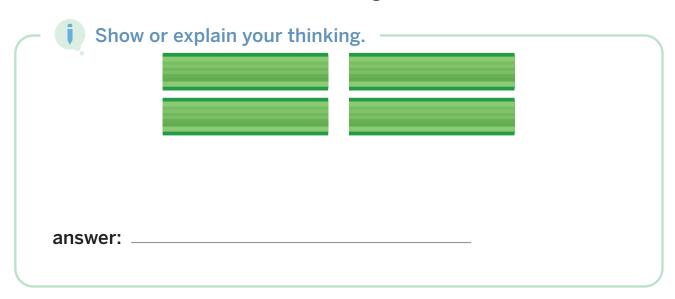
The Hops family has a large vegetable garden. They like to share their vegetables with the other rabbit families in their colony. Determine the amount of remaining celery stalks each family will receive.

4 families shared 38 celery stalks. Each family receives 9 whole stalks and there are 2 stalks remaining.



Celery Stalk Remainders (continued)

5 families shared 44 celery stalks equally. Each family receives 8 whole stalks and there are 4 stalks remaining.



4 Discuss (2)

What do you notice about Screen 3? Why does it make sense to divide the remainder and have a mixed number for the total amount of celery stalks each family will receive?



Remainders as Mixed Numbers

Determine the amount of celery stalks each family will receive. Represent each answer as a mixed number.

- i Show or explain your thinking.
- 5 10 families are sharing 745 celery stalks equally.

answer: _____

6 16 families are sharing 1,605 celery stalks equally.

Remainders as Mixed Numbers (continued)

7 Discuss

How did you determine what fraction of the remainder each family would receive in Screen 6?



Summary 3.10

You can write a quotient that contains a remainder as a mixed number in which the remainder is a fraction over the divisor. This notation more precisely represents quotients in contexts.

$$221 \div 10 = 22\frac{1}{10}$$
 because $22 \times 10 = 220$,

so there is a remainder of 1.

22 R1 can be written as
$$22\frac{1}{10}$$
.

Practice 3.10

- Diego and his friends made a noodle that was 1,040 feet long. If the noodle served 64 people, how many feet of the noodle did each person receive?
 - i Show or explain your thinking.

- 2 Clare and her friends made a noodle that was 750 feet long. If the noodle served 36 people, how many feet of the noodle did each person receive?
 - i Show or explain your thinking.

answer: _____

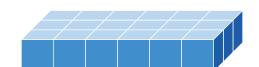
- Han and his friends made a noodle that was 1,284 feet long. If the noodle served 96 people, how many feet of the noodle did each person receive?
 - Show or explain your thinking.

Jada evaluated the expression 386 ÷ 12. Her work is shown. Write the quotient as a mixed number.

Jada's work

Spiral Review

5 The figure shows the base of a rectangular prism. There are 5 layers identical to the base layer. If each block has a volume of 1 cubic unit, what is the volume of the rectangular prism?



- 30 cubic units
- B) 18 cubic units
- 108 cubic units
- 90 cubic units

For Problems 6 and 7, determine the value of the expression.



Show your thinking.

6 $[36 - (5 + 3)] \times 25$



7 [42 + (3 × 2)] ÷ 8

answer: _____

answer:

Sub-Unit



Representing Multi-Step Problems With Equations

Unit Story: Andrea



bOnTrue/Shutterstock.com

How can thinking differently help you solve problems?

It's All in the Details

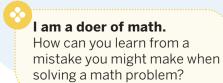
Let's represent multi-step story problems using an equation with an unknown quantity.



Warm-Up







Activity

1

Equation Tour

1 Determine the equation that represents each story problem. Record the equation in the table.

Story problem	Equation
Α	
В	
С	
D	

2 Discuss

What information in the story problems helped you determine the correct equations?

Equation Tour (continued)

- 3 Andrea has 190 pieces of saltwater taffy to give to her friends.
 - She gave 20 pieces to Gil.

Name

• She put the rest of the taffy into bags, with 12 pieces of taffy in each bag.

Which equation can be used to determine *b*, the number of bags of taffy Andrea made?

$$(A) \quad b = (190 + 20) + 12$$

(B)
$$b = (190 - 20) - 12$$

(C)
$$b = (190 + 20) - 12$$

$$(\mathbf{D})$$
 $b = (190 - 20) \div 12$

- 4 Clare spent \$56 at the book fair.
 - She spent \$12 on a poster.
 - She bought 5 pens for \$3 each.
 - Then she spent the rest of the money on books.

Which equation can be used to determine *m*, the amount of money Clare spent on books?

(A)
$$m = 56 - 12 + 5 \times 3$$

B
$$m = 56 - 12 + (5 \times 3)$$

$$\mathbf{C}$$
 $m = 56 - [12 + (5 \times 3)]$

$$(\mathbf{D})$$
 $m = 56 + (12 + 5) \times 3$

5 Justify your answer choice for Problem 4.

Follow the Steps

Write an equation that represents each story problem, with a letter standing for the unknown.

- 6 Andrea and Gil have \$60 to buy a guitar.
 - The guitar costs \$48.
 - They decide to split the leftover money equally.

What equation can be used to determine *m*, the amount of money in dollars Andrea and Gil will each keep?

- 7 A basketball team scored points by making baskets worth different numbers of points during a game.
 - The team made 7 baskets worth 3 points each.
 - The team made 24 baskets worth 2 points each.
 - The team made 13 baskets worth 1 point each.

What equation can be used to determine *b*, the total number of points the team scored?

- 8 Shawn bought some baseball cards.
 - 2 of the packs have 15 baseball cards in each pack.
 - 5 of the packs have 12 baseball cards in each pack.
 - Shawn split all of the cards equally into 3 binders.

What equation can be used to determine c, the number of baseball cards Shawn put in each binder?

Follow the Steps (continued)

- 9 At a fair, a family spent \$125. They spent \$36 on food and \$54 on rides. They spent the rest of the money on games. What equation can be used to determine g, the amount of money in dollars the family spent on games?
- A school purchased 90 boxes of pizza. Each box had 8 slices of pizza. Teachers put 2 slices of pizza onto each plate to give to students. What equation can be used to determine *p*, the number of plates the teachers filled with pizza?
- Priya is training for a bike race. On Monday, she biked 25 miles. On Tuesday, she biked 13 miles less than Monday. On Wednesday, she biked 3 times as far as Tuesday. What equation can be used to determine b, the number of miles Priya biked on Wednesday?
- 12 Explain why your equation for Problem 11 represents the story problem.

Summary 3.11

Multi-step story problems can be represented with equations that include a letter for the unknown quantity.

A basketball team scored points by making baskets worth different numbers of points during a game.

- The team made 4 baskets worth 3 points each.
- The team made 20 baskets worth 2 points each.
- The team made 15 baskets worth 1 point each.

Write an equation that represents *p*, the total number of points the team scored during the game.

$$p = 4(3) + 20(2) + 15$$

Practice 3.11

- At a grocery store, a customer bought 24 red apples and 36 green apples. The customer divided the apples equally into 5 boxes. Write an equation that represents a, the number of apples the customer put into each box.
- A bakery earned \$193 from selling cakes. They sold 7 vanilla cakes for \$15 each and chocolate cakes for \$11 each. Write an equation that represents c, the number of chocolate cakes the bakery sold.

Grade 5 Unit 3 Lesson 11 Summary | Practice

- An art teacher put 35 pencils in the pencil bin at the beginning of the day.
 - 3 pencils were taken from the bin during each of the first 5 classes of the day.
 - 2 pencils were taken from the bin during the last 2 classes of the day.
 - The teacher found 12 pencils on the floor at the end of the day and put them in the bin.

Which equation can be used to determine p, the number of pencils that were in the bin at the end of the day?

$$(\mathbf{A})$$
 $p = 35 - (3 + 5) - (2 + 2) + 12$

A)
$$p = 35 - (3 + 5) - (2 + 2) + 12$$
 B) $p = 35 - (3 \times 5) - (2 \times 2) + 12$

©
$$p = 35 - (3 \times 5) - (2 \times 2) - 12$$
 D $p = 35 - (3 + 5) - (2 + 2) - 12$

$$(D)$$
 $p = 35 - (3 + 5) - (2 + 2) - 12$

- 4 The school held a bake sale.
 - 6 slices of cake were sold for \$4 each.
 - 25 cupcakes were sold for \$3 each.
 - 14 cookies were sold for \$2 each.

Which equation can be used to solve for d, the amount of money in dollars the school made?

$$(A) d = 6(4) + 25(3) + 14(2)$$

B)
$$d = (6 + 4) \times (25 + 3) \times (14 \times 2)$$

$$(c)$$
 $d = (6 + 4) + 25(3) + 14(2)$

D
$$d = (6 \times 4) + (25 + 3) \times (14 + 2)$$

An art teacher ordered 35 boxes of paint. Each box contained 24 bottles of paint. She had 7 new bottles of paint in the closet, and she gave 12 of the new bottles to another teacher.

Which equation can be used to determine p, the number of bottles of paint the art teacher has?

B
$$p = [(35 \times 24) + 7] - 12$$

$$(c)$$
 $p = [(35 - 24) + 7] - 12$

(D)
$$p = 12 + 7 + 35 \times 24$$

Spiral Review

For Problems 6–9, simplify the expression.



6
$$(8 \times 8) - 2(12 \div 3)$$

answer: _____

answer: _____

answer: _____

Uncovering the Unknown

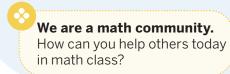
Let's represent and solve multi-step story problems with an unknown quantity.



Warm-Up







Activity

1

Read, Write, Represent, Solve!

Han has a collection of 114 stickers. He bought some new stickers at the store.

- Han bought 5 packs of insect stickers with 15 stickers in each pack.
- Han bought 7 packs of animal stickers with 25 stickers in each pack.
- Han gave 46 stickers to a friend and kept the rest.

Andrea and Gil wrote an equation to represent the number of stickers Han has.

Andrea Gil
$$s = (5 \times 15) + (7 \times 25) + (114 - 46)$$
 $s = 114 + [5(15) + 7(25) - 46]$

1 Whose equation will you choose to solve? Justify your thinking.

2 Circle the equation you will use to solve for s, the number of stickers Han has altogether. Then solve for s.



Show your thinking.

$$s = 114 + (5 \times 15) + (7 \times 25) - 46$$
 $s = 114 + [5(15) + 7(25) - 46]$

$$s = 114 + [5(15) + 7(25) - 46]$$

answer: _____

- 3 A grocery store received 14 boxes of milk.
 - Each box contained 16 bottles of milk.
 - The grocery store already had 22 bottles of milk in the fridge.
 - There were 9 bottles of milk that were removed from the fridge.

Write an equation that represents m, the number of bottles of milk the grocery store has altogether. Then solve the story problem.

Show your thinking.

equation: _

_____ answer: _

Date _____

2

Story Solutions

- 4 A librarian is organizing books.
 - There are 3 boxes with 65 books in each box.
 - The librarian gives 35 books away.
 - There are 160 loose books in a bin.
 - All of the remaining books will be split evenly between 8 shelves.

How many books will be on each shelf?



Show your thinking.

answer: _____

- 5 Shawn, Jada, and Diego have \$75 to buy snacks. They bought pretzels for \$13, popcorn for \$12, and sports drinks for \$17. They decided to split the leftover money equally. How much money will they each keep?
 - Show your thinking.

Story Solutions (continued)

6 The table shows the number of T-shirts made at a factory in May. The number of T-shirts in Week 4 is represented by t.

Week	Number of T-shirts
1	213,755
2	505,681
3	362,049
4	t

The total number of T-shirts made in May was 1,342,070. Solve for *t*.

i Show your thinking.

When representing story problems, sometimes more than 1 equation can be used to solve, but there is only 1 correct value for the unknown quantity. Representing story problems in more than 1 way allows you to consider all the possible ways to solve story problems.

worth different numbers of points during a game.

- The team made 4 baskets worth 3 points each.
- The team made 20 baskets worth 2 points each.
- The team made 15 baskets worth 1 point each. Write an equation that represents p, the total number of points the team scored during the game.

A basketball team scored points by making baskets
$$p = [(4 \times 3) + (20 \times 2)] + 15$$
 worth different numbers of points during a game.

• The team made 4 baskets worth 3 points each.

• The team made 20 baskets worth 2 points each.

• The team made 15 baskets worth 1 point each.

Write an equation that represents p , the total number of points the team scored during the game.

 $p = [(4 \times 3) + (20 \times 2)] + 15$
 $p = 4(3) + 20(2) + 15$
 $p = 12 + 40 + 15$
 $p = 52 + 15$
 $p = 52 + 15$
 $p = 67$

Practice 3.12

- 1 A class was tracking the growth of 3 plants in inches.
 - Plant A grew 24 inches.
 - Plant B grew 2 times as many inches as Plant C.
 - Plant C grew 7 inches less than Plant A.

Determine the amount that Plant B grew in inches.



Record your answer in the space provided.

- 2 A bike rental started the day with 65 bikes.
 - 7 bikes were rented each hour for the first 3 hours of the day.
 - 5 bikes were rented each hour for the last 5 hours of the day.
 - At the end of the day, 32 bikes were returned.

The following equation is used by the bike rental to represent r, the number of bikes they have at the end of the day.

$$r = 65 - (7 \times 3) + (5 \times 5) + 32$$

What is the value of r, the number of bikes they have at the end of the day?

- (A) 85
- **(c)** 96

- **B**) 110
- **D** 101
- At a restaurant, a family spent \$237. They spent \$101 on pizzas and \$87 on salads. They spent the rest of the money on dessert. The family used the following equation to represent d, the amount of money they spent on dessert.

$$d = 237 - (101 + 87)$$

Which is the value of *d*, the amount of money the family spent on dessert?

- (A) 49
- **(c)** 223

- **B** 50
- **D** 56

- 4 Priya bought bottles of paint at the craft store.
 - 8 bottles of blue paint were \$5 each.
 - 11 bottles of red paint were \$4 each.
 - 4 bottles of green paint were \$6 each.

Priya used the following equation to represent *n*, the total cost of the bottles of paint.

$$n = 8(5) + 11(4) + 4(6)$$

Which is the value of *n*, the total amount of money Priya spent on the bottles of paint?

- (A) 108
- **(c)** 97

- **B** 100
- **(D)** 102

Spiral Review

For Problems 5–12, determine whether the comparison statement is true or false.

5
$$0.9 = \frac{9}{100}$$

6
$$\frac{7}{10}$$
 < 0.70 _____

7
$$0.5 > \frac{5}{100}$$

8 0.8 <
$$\frac{8}{100}$$

9
$$\frac{25}{100} = 0.25$$

10
$$1.5 = \frac{15}{10}$$

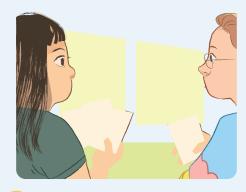
11
$$9.9 = \frac{99}{100}$$

12.7 >
$$\frac{127}{100}$$

♦ TEKS 5.1.D, 5.1.F, 5.1.G Building Toward 5.4.F

Game, Set, Match!

Let's interpret and compare written and numerical expressions.



Warm-Up





We are a math community.
How can you contribute to the discussions in your math community today?

Activity

1

Interpretation Station



You and your partner will be given a set of cards with written and numerical expressions.

1 Match each written expression with a numerical expression that represents it. Record the letters and numerical expressions for the matches in the table. Not all numerical expressions have matches. Be prepared to explain your thinking.

Written expression	Numerical expression
Card A: 3 times the sum of 1,542 and 45	Card: Expression:
Card B: 3 less than the quotient of 1,542 and 45	Card: Expression:
Card C: triple the product of 1,542 and 45	Card: Expression:
Card D: the difference between 1,542 and 45, divided by 3	Card: Expression:

Do Not Compute

Without simplifying, compare each pair of expressions and their values using <, >, or =. Explain your thinking.



- Compare the expressions $\left(\frac{2}{3} \times 178\right)$ and $\left(178 \times \frac{3}{2}\right)$. Which expression has a greater value? How do you know?
- Compare the expressions $\left(1,564 \div \frac{1}{10}\right)$ and $\left(\frac{1}{10} \times 1,564\right)$. Which expression has a smaller value? How do you know?

Summary 3.13

You can use what you know about the order of operations, including grouping symbols, to compare the value of expressions without simplifying them.

$$2 \times (9 - 4) > 2 \times (9 - 5)$$

- Both expressions show 2 times an amount.
- 9-4 is greater than 9-5 because the distance between the numbers 9 and 4 is greater.
- So, the value of $2 \times (9 4)$ is greater.

Practice 3.13

For Problems 1–3, without simplifying, compare each pair of expressions and their values using <, >, or =.

2 204 ÷ 12 _____ 204 ÷
$$\left(\frac{1}{2} \times 24\right)$$

$$\frac{1}{100} \div 9,087$$
 $\frac{1}{100} \times 9,087$

4 Which numerical expressions are equal to the value of the written expression? Select *all* that apply.

The value is triple the quotient of 665 and 25.

$$(A)$$
 3 × (25 ÷ 665)

B)
$$3 \times (665 \div 25)$$

$$(c)$$
 (665 ÷ 25) × 3

$$\bigcirc$$
 3 ÷ (25 × 665)

5 The table shows numerical expressions and their matching written expressions.

Select **TWO** numerical expressions that accurately represent the written expressions.

Numerical expression	Written expression
(2,317 + 2) – 58	The value is 58 less than the product of 2,317 and 2.
B (2,317 × 58) – 2	The value is 2 less than the product of 2,317 and 58.
© (2,317 ÷ 58) × 2	The value is the difference between 2,317 and 58 multiplied by 2.
D (2 + 2,317) × 58	The value is 58 more than the product of 2,317 and 2.
E 2(2,317 + 58)	The value is double the sum of 2,317 and 58.

For Problems 6–8, match the written expression with the numerical expression it represents.

Written expression

Numerical expression

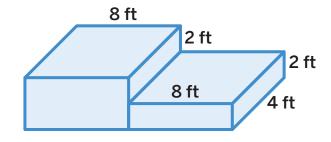
6 The value is double the quotient of 906 and 31.

7 The value is 2 less than the product of 906 and 31.

8 The value equals the difference between 31 and 2 multiplied by 906.

Spiral Review

A landscape company designed a raised garden bed with the dimensions shown. Write an expression that can be used to determine the volume of the garden bed.



- 10 The dimensions of a rectangular prism are 18 inches by 10 inches by 15 inches. Determine the volume of the prism in cubic inches.
 - Record you answer in the space provided.

For Problems 11–14, determine the value of the expression.



Financial Literacy

Unit Story: Andrea



Iryna Tolmachova/Shutterstock.com

Andrea has many unique ideas.

When might thinking about things in a different or unique way be helpful in math class?

Money, Money, Money!

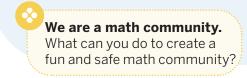
Let's calculate income and identify taxes.



Warm-Up







Activity

1

Where'd My Money Go?

1 Record your answer to each scenario in the table.

Scenario	Tax
Clare bought a slice of veggie pizza. The slice cost \$3.50. After tax was applied, the total cost was \$3.72.	
Shawn's gross income gets taxed and deducted from his paycheck.	
Each year, Priya pays a tax on the farmland that she owns.	
Diego pays a tax on the money, or income, that he receives. This tax is used to fund public services.	

Where'd My Money Go? (continued)

2 Discuss

How is sales tax different from income tax, payroll tax, and property tax?

- i Show your thinking. -
- 3 Jada earns \$25 per hour and works 40 hours per week. What is Jada's weekly gross income?

answer: _____

4 If \$65.10 is taken out of Jada's gross weekly income for taxes, what is her weekly **net income**? Use Jada's gross income from Problem 3.

answer: _____

5 Explain the difference between gross income and net income.

Gross Income vs. Net Income

- i Show your thinking.
- 6 If Andrea makes \$32 an hour as an inventor and works 8 hours a day and 28 days per month, what would her monthly gross income be?

answer: _____

7 If \$548.35 is deducted from Andrea's income for taxes each month, what is her net income? Use Andrea's gross income from Problem 6.

answer: _____

8 Why is it important to understand the difference between gross income and net income? Explain your thinking.

Gross Income vs. Net Income (continued)

For Problems 9 and 10, use the word bank to write the term that matches the definition for the tax that could be taken out of Andrea's income.

income tax payroll tax property tax sales tax

- 9 A tax paid on money received, including money from wages and other sources.
- 10 A tax paid on property such as houses and land.
- Gil cannot wait to get a job and earn money when he grows up. When he gets his first paycheck, Gil expects that it will include his gross income and deductions for taxes. What are the taxes that will be deducted from Gil's paycheck called?
 - (A) income tax

(B) payroll tax

(c) property tax

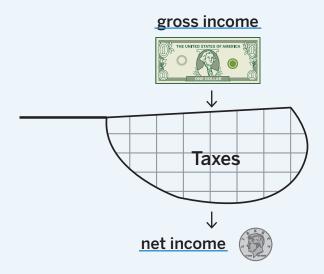
- **D** sales tax
- As working adults, Andrea and Gil plan to go out to lunch every Friday to catch up. Which tax will be added to their bill?
 - (A) income tax

B payroll tax

C property tax

- **D** sales tax
- Andrea tells Gil that net income is always less than gross income. Do you agree or disagree? Explain your thinking.

Net income is the amount of money that is left after taxes have been deducted from **gross income**.



net income The total amount of money left after taxes are deducted.

Practice 3.14

- 1 Jada earns \$15 an hour at her job. If she works for 36 hours this month, which statement about her monthly income is *true*?
 - (A) Her gross income is less than \$540.
 - (B) Her net income is less than \$540.
 - (c) Her gross income is more than \$540.
 - (D) Her net income is more than \$540.
- Describe a situation in which you had to pay sales tax.

3 Match each vocabulary word with its definition.

Vocabulary

Definition

- A. net income a tax on income received from wages and other sources
- B. payroll tax total amount of money left after taxes are deducted
- C. income tax a tax deducted from a paycheck based on wages earned
- **D.** gross income a tax paid on goods and services
- E. property tax money received from wages and other sources before taxes are deducted or paid
- **F.** sales tax a tax paid on property that is owned, such as land

Spiral Review

- 4 Which best describes the difference between fixed expenses and variable expenses?
 - (A) Fixed expenses stay the same, whereas variable expenses can change.
 - (B) Variable expenses stay the same, whereas fixed expenses can change.
 - **©** Both fixed expenses and variable expenses can change.
 - (D) Both fixed expenses and variable expenses stay the same.

Use the table for Problems 5 and 6.

Expenses	February	March	April
phone service	\$64.15	\$64.15	\$64.15
TV streaming	\$40.00	\$40.00	\$40.00
groceries	\$35.85	\$72.19	\$43.12

- **5** Circle the expenses that are fixed.
- 6 How much money is needed to pay the expenses in February?

i Show your thinking. -

answer: _____

For Problems 7–10, evaluate the expression.

7 50 × 90 _____

8 80 × 60 _____

9 60 × 70 _____

10 40 × 70 _____

Name

Date

♦ TEKS 5.1.A, 5.3.K, 5.10.E, 5.10.F

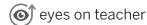
Is It Balanced?

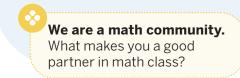
Let's calculate expenses.



Warm-Up







Activity

1

Budget Balancer

1 Determine whether each **budget** is balanced. Place a check mark in the correct column.

Budget	Balanced	Unbalanced
А		
В		
С		
D		
E		

2 Describe a change that could be made to balance one of the unbalanced budgets from Problem 1.

Budget Balancer (continued)

The monthly income for Andrea's mom during October was \$2,479.66. The table shows an incomplete budget. Complete the table to show a **balanced budget**.

Expense	Amount
rent	\$950.24
transportation	\$265.85
food	\$450.50
savings	\$535.00
other	

Cutting Costs

4 Han's grandmother has a weekly net income of \$500. Determine whether the table shows a balanced budget. If not, cross off the expense she should eliminate.

Expense	Cost
groceries	\$253.74
utilities	\$99.26
movie tickets	\$36.00
savings	\$100.00
clothes	\$47.00

i Show your thinking.

Name _____ Date ____

2

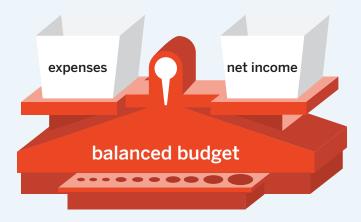
Cutting Costs (continued)

Expense	Amount
cell phone	\$60
gym membership	\$40
entertainment	\$65
food	\$80
savings	\$75

- Han's brother earned \$280 this week. He made a list of his expenses.

 Describe a change he could make to have a balanced budget for the week.
- 6 This month, Gil's expenses are greater than his income. What actions could he take to balance his budget?
 - (A) increase expenses and decrease income
 - (B) decrease expenses and decrease income
 - (c) decrease expenses and increase income
 - (D) increase expenses and increase income

When you create a **balanced budget**, you want to make sure your expenses are equal to your income. If your expenses exceed your income, you can identify ways to adjust your budget.



balanced budget A plan for spending in which the expenses equal the net income.

Practice 3.15

1 Priya made \$200 doing chores for the month. How much remaining income does she have for entertainment expenses?

Expense	Amount
clothing	\$40.17
food	\$50.29
savings	\$65.81
entertainment	

2 Andrea's expenses and income are shown in the chart.

Andrea's Budget

<u>Income</u>	<u>Expenses</u>
lawn mowing \$20.00	clothes\$20.00
babysitting\$35.00	food\$60.00
tutoring \$40.00	entertainment \$40.00
garage sale\$55.00	

Based on the budget, what is the greatest amount of money Andrea can spend on markers for an art project and still achieve a balanced budget?

- (A) \$10
- **(c)** \$30

- **B**) \$20
- **D**) \$40
- 3 Andrea's sister has a net income of \$1,300. Based on her list of expenses, what change could her sister make to balance her budget?

Expense	Amount
food	\$250
rent	\$800
savings	\$130
clothing	\$150

- (A) increase her food costs by \$30
- decrease her food costs by \$70
- B increase her clothing costs by \$70
- decrease her clothing costs by \$30

Spiral Review

For Problems 4–9, determine the product.

Show your thinking. —

4 12 × 11

5 20 × 15

answer: _____

answer: _____

6 35 × 10

7 20 × 12

answer: _____

answer: _____

8 12 × 18

9 28 × 14

answer: _____

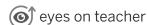
Add It, Subtract It, Track It!

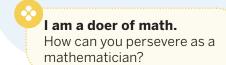
Let's track our spending.

DESCRIPTION	WITHDRAWAL	DEPOSIT
GAME	\$35.50	
TOY	\$25.10	
MOWING		\$30.00

Warm-Up







Activity

1

Keeping Records

1 Develop a system to keep track of your deposits and withdrawals.

Net Income: \$500

- 2 Discuss
 - How did you organize your **financial records**?
 - Compare your financial records with your partner's. What is similar? What is different?

Keeping Records (continued)

3 Use the financial record to calculate the account balance.

Day	Description	Withdrawal	Deposit	Account balance
Fri.	video game	\$35.50		\$85.50
Fri.	toy store	\$25.10		
Sat.	mowing		\$30.00	
Sat.	pizza	\$15.75		
Sun.	chores		\$20.00	

Using Records!

4 Help Gil develop a financial record to keep track of his spending.

Net Income: \$100

Day		

5 Can Gil afford to buy a pet bunny that costs \$65?

6 Discuss

How can financial records be beneficial in helping Gil make financial decisions?

Using Records! (continued)

Use the financial record to solve each problem.

Day	Description	Withdrawal	Deposit	Account balance
Mon.	pay insurance bill	\$35.65		\$84.35
Mon.	pizza restaurant	\$25.99		\$58.36
Tues.	taco restaurant	\$32.15		\$26.21
Tues.	paycheck		\$220.00	\$246.21
Wed.	groceries	\$61.75		\$184.46
Thurs.	pay rent bill	\$150.00		\$34.46
Fri.	breakfast restaurant	\$8.25		\$26.21

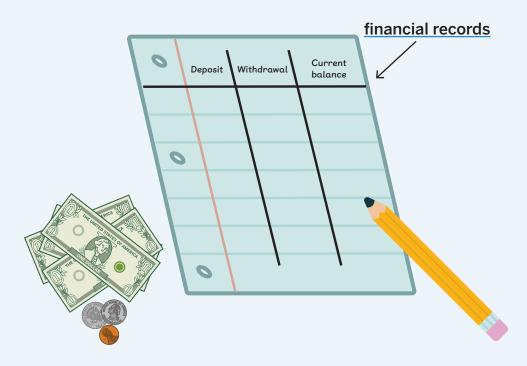
i Show	your	thin	king.
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How much money was spent on food?

answer: _____

8 How much money was used to pay bills?

When you deposit or withdraw from your bank account, tracking your transactions with **financial records** can help you make financial decisions.



financial records A system to help keep track of withdrawals and deposits.

Practice 3.16

Han began with an account balance of \$150. On Monday, he was paid \$50 for teaching a private piano lesson. On Wednesday, Han spent \$25.50 at lunch with friends. On Friday, Han spent \$30.25 on a movie ticket and popcorn at the theater. Create Han's financial record in the table.

Use the information in Problems 2-5 to complete the financial records.

Day	Item	Withdrawal	Deposit	Account balance
	paycheck		\$120.00	\$120.00
1				
2				
3				

- 2 On Day 1, you bought a slice of pizza for \$5.25.
- 3 On Day 2, you bought a concert ticket for \$50.15.
- 4 Which items from the list could you purchase on Day 3? Explain your thinking.

computer:	movie ticket:	books:	shoes:
\$230.25	\$15.30	\$35.60	\$65.15

5 Purchase one of the items from Problem 4. Log it in the financial record and record the new account balance.

Spiral Review

For Problems 6 and 7, write the decimal in expanded notation.

6 5.67 _____

7 0.32 _____

For Problems 8 and 9, write the decimal as a fraction.

8 0.8 _____

9 0.12 _____

For Problems 10 and 11, round the number to the nearest 10.

10 244 _____

11 99 _____

For Problems 12 and 13, round the number to the nearest 100.

12 562 _____

13 403 _____

Miguel made \$1,032 before deductions from selling scarves for \$12 each. How many scarves did he sell?

Record your answer in the space provided.

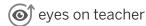
Time to Check Out!

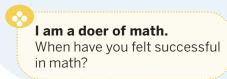
Let's identify advantages and disadvantages of different payment methods.



Warm-Up







Activity

1

How Will You Pay?

Use the information on the posters to complete Problem 1.

1 Circle a thumbs up for statements that are advantages and a thumbs down for statements that are disadvantages. Circle all the payment methods each statement applies to.

Scenario	Advantage or disadvantage	Payment methods
Interest rates may apply.	4 •	credit card debit card check payment
use to withdraw cash from ATM without fees	4	credit card debit card check payment
quick payment	• •	electronic credit card debit card check payment
can be mailed	•	credit card debit card check electronic payment

How Will You Pay? (continued)

Identify the advantages and disadvantages of the payment methods selected in each scenario and record your answer.

2 Gil ordered pizza and paid with an electronic payment on the restaurant's website. Identify 1 advantage of using that payment method. 3 Rent is due in a few days, so Andrea's mom mails a check. Identify 1 disadvantage of paying with a check. Clare wants to buy a new car but only has a debit card. What is a disadvantage of having a debit card in this scenario?

Payment Method Madness



You and your partner will be given a set of cards.

Read each card. Use what you know about the payment methods listed in the table to determine which card describes an advantage or disadvantage for each method of payment.

	Advantage	Disadvantage
Credit card		
Debit card		
Check		
Electronic payment		

Shawn needs to buy a new computer. Shawn's checking account has a balance of \$250.00. The computer Shawn wants costs \$275.00.

6 What would be an advantage of using a credit card to make this purchase?

7 What would be a disadvantage of using a credit card to make this purchase?

Payment Method Madness (continued)

- Priya is purchasing a new dishwasher for \$1,000. Which of the following is an advantage of using a credit card in this situation?
 - (A) Priya may pay interest on the cost of the dishwasher.
 - (B) Priya is able to borrow money she does not currently have.
 - C Priya is only able to spend up to the amount in her checking account.
 - D Priya is able to mail her payment.
- 9 Han used a debit card to buy a present for his dad. Which of the following is a disadvantage of using a debit card in this situation?
 - (A) Han may pay interest on the cost of the present.
 - (B) Han is able to borrow money he does not currently have.
 - C Han is only able to spend up to the amount in his checking account.
 - (D) Han is able to mail his payment.

Summary 3.17

When spending, you should consider the advantages and disadvantages of payment methods, such as a **credit card**, a **debit card**, a **check**, or an **electronic payment**, in order to make responsible financial decisions.

debit card



Pressmaster/Shutterstock.com

debit card A card issued by a bank to make purchases using the funds in a checking account.

Practice 3.17

1 Complete the statement so that it correctly identifies the scenario as being either an advantage or disadvantage of the appropriate payment method.

Select **ONE** correct answer in each box to complete the sentence.

One (A) advantage (B) disadvantage of using a

(A) credit card (B) debit card is the possibility of needing

to pay interest.

2 Clare uses her PIN when she pays with a debit card. Is this an advantage or disadvantage? Explain your thinking.

- 3 Which of the following is a disadvantage of checks?
 - A They can be canceled if you lose a check.
- B You need to purchase checks from the bank.
- **C** Banks offer rewards for spending with checks.
- D There are often convenience fees for spending with a check.
- 4 Which of the following is a disadvantage of credit cards?
 - A Credit cards allow you to borrow money.
- B There are never fees for spending with a credit card.
- C Credit cards often lead to overspending.
- **D** Banks offer rewards for spending with them.
- **5** Which of the following is a disadvantage of debit cards?
 - A Debit cards allow you to borrow money.
- B Debit cards only allow you to spend the amount of money you have in your checking account.
- C Debit cards often lead to overspending.
- D Banks offer rewards for spending with them.

For Problems 6–11, determine the product.

- i Show your thinking. —
- **6** 260 × 12

7 125 × 40

answer: _____

answer: _____

Spiral Review

- i Show your thinking. -
- **8** 33 × 15

9 72 × 35

answer: _____

answer: _____

10 24 × 25

11 60 × 17

answer: _____

