Chapter



School-Home Letter

Dear Family,

Throughout the next few weeks, our math class will be learning about place value, number properties, and numerical expressions. We will also learn to multiply by 1- and 2-digit whole numbers.

You can expect to see homework that requires students to write and evaluate numerical expressions.

Here is a sample of how your child will be taught to evaluate an expression.

Vocabulary

evaluate To find the value of a numerical or algebraic expression

numerical expression A

mathematical phrase that has numbers and operation signs but does not have an equal sign

order of operations The process for evaluating expressions

MODEL Evaluate Expressions

This is how we will be evaluating $36 - (2 + 3) \times 4$.

STEP 1

Perform the operations in parentheses.	$36 - (2 + 3) \times 4$ $36 - 5 \times 4$
STEP 2 Multiply.	36 – 20
STEP 3	
Subtract. 36 - (2 + 3) $ imes$ 4 = 16	16

Order of Operations

To evaluate an expression, first perform the operations in parentheses. Next, multiply and divide from left to right. Finally, add and subtract from left to right.

Activity

You can write numerical expressions to describe situations around the house. For example, "We bought a case of 24 water bottles and have used 13 bottles. What expression shows how many are left?" can be represented by the expression 24 - 13.



Carta para la casa

Querida familia,

Durante las próximas semanas, en la clase de matemáticas aprenderemos sobre el valor de posición, las propiedades de los números y las expresiones numéricas.

Llevaré a la casa tareas con actividades para practicar la escritura y evaluación de expresiones numéricas.

Este es un ejemplo de la manera en que evaluaremos expresiones numéricas.

MODELO Evaluar expresiones

Así es como evaluaremos $36 - (2 + 3) \times 4$. Sandra tiene 8 manzanas. Le da algunas manzanas a Josh.

PASO 1

Resuelve las operaciones en paréntesis.	36 − (2 + 3) × 4 36 − 5 × 4
PASO 2	
Multiplica.	36 – 20
PASO 3	
Resta.	
$36 - (2 + 3) \times 4 = 16$	16

Actividad

Pueden escribir expresiones numéricas para representar cosas que suceden en la casa. Por ejemplo, "Compramos una caja de 24 botellas de agua y usamos 13 botellas. ¿Qué expresión muestra cuántas botellas quedan?", se puede representar con 24 - 13.

Vocabulario

evaluar Hallar el valor de una expresión numérica o algebraica

expresión numérica Una frase matemática que tiene solo números y signos de operaciones.

orden de las operaciones El proceso que se usa para evaluar expresiones



Orden de las Operaciones

Para evaluar una expresión, primero resuelve las operaciones en paréntesis. Después multiplica y divide de izquierda a derecha. Finalmente suma y resta de izquierda a derecha.

Name	Lesson I.I
Place Value and Patterns	COMMON CORE STANDARD—5.NBT.1 Understand the place value system.
Complete the sentence. 1. 40,000 is 10 times as much as 4,000.	2. 90 is $\frac{1}{10}$ of
3. 800 is 10 times as much as	4. 5,000 is $\frac{1}{10}$ of

Use place-value patterns to complete the table.

Number	10 times as much as	$\frac{1}{10}$ of
5. 100		
6. 7,000		
7. 300		
8. 80		

Number	10 times as much as	$\frac{1}{10}$ of
9. 2,000		
10. 900		
11. 60,000		
12. 500		

Problem Solving Real World

- **13.** The Eatery Restaurant has 200 tables. On a recent evening, there were reservations for $\frac{1}{10}$ of the tables. How many tables were reserved?
- **14.** Mr. Wilson has \$3,000 in his bank account. Ms. Nelson has 10 times as much money in her bank account as Mr. Wilson has in his bank account. How much money does Ms. Nelson have in her bank account?

Lesson Check (5.NBT.1)

1. What is 10 times as much as 700?

2. What is $\frac{1}{10}$ of 3,000?

Spiral Review (Reviews 4.OA.3, 4.NBT.2, 4.NBT.5, 4.MD.3)

- **3.** Risa is sewing a ribbon around the sides of a square blanket. Each side of the blanket is 72 inches long. How many inches of ribbon will Risa need?
- **4.** What is the value of *n*?

 $9 \times 27 + 2 \times 31 - 28 = n$

- **5.** What is the best estimate for the product of 289 and 7?
- **6.** Arrange the following numbers in order from greatest to least: 7,361; 7,136; 7,613

Problem Solving

- 13. The U.S. Census Bureau has a population clock on the Internet. On a recent day, the United States population was listed as 310,763,136. Write this number in word form.
- **14.** In 2008, the population of 10- to 14-year-olds in the United States was 20,484,163. Write this number in expanded form.

12. 32,005,008

10. 100,203

Write the number in two other forms.

9. 15,409

11. 6,007,200



Write the value of the underlined digit.

Place Value of Whole Numbers

Name _

Lesson 1.2

COMMON CORE STANDARD—5.NBT.1 Understand the place value system.

Lesson Check (5.NBT.1)

- **1.** A movie cost \$3,254,107 to produce. What digit is in the hundred thousands place?
- **2.** What is the standard form of two hundred ten million, sixty-four thousand, fifty?

Spiral Review (Reviews 4.OA.5, 4.NBT.6, 4.G.2, 4.G.3)

- **3.** If the pattern below continues, what number likely comes next?
 - 9, 12, 15, 18, 21, _?

4. Find the quotient and remainder for $52 \div 8$.

- **5.** How many pairs of parallel sides does the trapezoid below have?

6. How many lines of symmetry does the figure below appear to have?



Properties



COMMON CORE STANDARD—**5.OA.1** Perform operations with multi-digit whole numbers and with decimals to hundredths.

Use properties to find the sum or product.

1.
$$6 \times 89$$
 2. $93 + (68 + 7)$
 3. $5 \times 23 \times 2$
 $6 \times (90 - 1)$
 $(6 \times 90) - (6 \times 1)$
 $540 - 6$
 534
 534
 $6. 6 \times 107$

 4. 8×51
 $5. 34 + 0 + 18 + 26$
 $6. 6 \times 107$

Complete the equation, and tell which property you used.

7. $(3 \times 10) \times 8 =$ × (10×8)

8. 16 + 31 = 31 +_____

9. 0 + _____ = 91

10. $21 \times __= 9 \times 21$



- **11.** The Metro Theater has 20 rows of seats with 18 seats in each row. Tickets cost \$5. The theater's income in dollars if all seats are sold is $(20 \times 18) \times 5$. Use properties to find the total income.
- 12. The numbers of students in the four sixth-grade classes at Northside School are 26, 19, 34, and 21. Use properties to find the total number of students in the four classes.

Lesson Check (5.NBT.6)

- To find 19 + (11 + 37), Lennie added 19 and 11. Then he added 37 to the sum. What property did he use?
- **2.** Marla did 65 sit-ups each day for one week. Use the Distributive Property to show an expression you can use to find the total number of sit-ups Marla did during the week.

Spiral Review (Reviews 4.OA.4, 4.NBT.5, 4.NBT.6; 5.NBT.1)

- **3.** The average sunflower has 34 petals. What is the best estimate of the total number of petals on 57 sunflowers?
- **4.** A golden eagle flies a distance of 290 miles in 5 days. If the eagle flies the same distance each day of its journey, how far does the eagle fly per day?

5. What is the value of the underlined digit in the following number?

2,9<u>8</u>3,785

6. What best describes the number 5? Write *prime, composite, neither prime nor composite, or both prime and composite.*

Name			AI	.GEBRA
Powers of 10 and E	xponents		Les	sson I.4
			COMMON COMMON COMMON	CORE STANDARD—5.NBT.2 the place value system.
Write in exponent form a	nd word form.			
1. $10 \times 10 \times 10$	2. 10 × 10		3. 10 × 10	imes 10 $ imes$ 10
exponent form:	exponent for word form:	m:	exponent form:	m:
Find the value. 4. 10 ³	5. 4×10^2	6. 9 × 10 ⁴	7.	10 ¹
8. 10 ⁵	9. 5×10^1	10. 7 × 10 ³		8×10^0

- Problem Solving (Real World
- **12.** The moon is about 240,000 miles from Earth. What is this distance written as a whole number multiplied by a power of ten?
- **13.** The sun is about 93×10^6 miles from Earth. What is this distance written as a whole number?

Lesson Check (5.NBT.2)

- **1.** Write the expression that shows "3 times the sixth power of 10."
- **2.** Gary mails 10³ flyers to clients in one week. How many flyers does Gary mail?

Spiral Review (Reviews 4.NBT.5, 4.NBT.6)

- **3.** Harley is loading 625 bags of cement onto small pallets. Each pallet holds 5 bags. How many pallets will Harley need?
- **4.** Marylou buys a package of 500 jewels to decorate 4 different pairs of jeans. She uses the same number of jewels on each pair of jeans. How many jewels will she use for each pair of jeans?

- **5.** Manny buys 4 boxes of straws for his restaurant. There are 500 straws in each box. How many straws does he buy?
- **6.** Cammie goes to the gym to exercise 4 times per week. Altogether, how many times does she go to the gym in 10 weeks?

Multiplication Patterns

ALGEBRA Lesson 1.5



COMMON CORE STANDARD—**5.NBT.2** Understand the place value system.

Use mental math to complete the pattern.

1.	$8 \times 3 = 24$	2.	5 × 6 =	3.	3 × = 27
	$(8 \times 3) \times 10^1 = $ 240		$(5 \times 6) \times 10^1 =$		$(3 \times 9) \times 10^1 =$
	$(8 \times 3) \times 10^2 = 2,400$		$(5 \times 6) \times 10^2 =$		$(3 \times 9) \times 10^2 =$
	$(8 \times 3) \times 10^3 = $ 24,00		$(5 \times 6) \times 10^3 =$		$(3 \times 9) \times 10^3 =$
4.	×4 = 28	5.	6 × 8 =	6.	×4 = 16
	$(7 \times 4) \times ___ = 280$		$(6 \times 8) \times 10^2 =$		$(4 \times 4) \times 10^2 =$
	(7 × 4) × = 2,800		$(6 \times 8) \times 10^3 =$		$(4 \times 4) \times 10^3 =$
	(7 × 4) × = 28,000		$(6 \times 8) \times 10^4 =$		$(4 \times 4) \times 10^4 =$
Use	e mental math and a pattern to fi	ind t	he product.		
7.	$(2 \times 9) \times 10^2 =$	8.	$(8 \times 7) \times 10^2 =$	9.	$(9 \times 6) \times 10^3 =$
10.	$(3 \times 7) \times 10^3 =$	11.	$(5 \times 9) \times 10^4 =$	12.	$(4 \times 8) \times 10^4 =$
13.	$(8 \times 8) \times 10^3 =$	14.	$(6 \times 4) \times 10^4 =$	15.	$(5 \times 5) \times 10^3 =$

Problem Solving (Rec

- **16.** The Florida Everglades welcomes about 2×10^3 visitors per day. Based on this, about how many visitors come to the Everglades per week?
- 17. The average person loses about 8×10^1 strands of hair each day. About how many strands of hair would the average person lose in 9 days?

Lesson Check (5.NBT.2)

- **1.** How many zeros are in the product $(6 \times 5) \times 10^3$?
- 2. Addison studies a tarantula that is 30 millimeters long. Suppose she uses a microscope to magnify the spider by 4×10^2 . How long will the spider appear to be?

Spiral Review (Reviews 4.OA.3, 4.NBT.5)

- **3.** Hayden has 6 rolls of dimes. There are 50 dimes in each roll. How many dimes does he have altogether?
- **4.** An adult ticket to the zoo costs \$20 and a child's ticket costs \$10. How much will it cost for Mr. and Mrs. Brown and their 4 children to get into the zoo?

- **5.** At a museum, 100 posters are displayed in each of 4 rooms. Altogether, how many posters are displayed?
- **6.** A store sells a gallon of milk for \$3. A baker buys 30 gallons of milk for his bakery. How much will he have to pay?

		Perform operations with mult numbers and with decimals to
the product.		
2. Estimation	ate:	3. Estimate:
	1,374	726
	\times 6	\times 5
5. Estir	nate:	6. Estimate:
2	2,308	1,564
3	\times 9	\times 5
the product. 8. 503 × 7	9. 5 × 4,257	10. 6,018 × 9
12. 3 × 697	13. 2,141 × 8	14. 7 × 7,956
	the product. 2. Estimation 2 . Estimation	the product. 2. Estimate: $1,374$ \times 6 5. Estimate: 2,308 3 \times 9 the product. 8. 503 × 7 9. 5 × 4,257 12. 3 × 697 13. 2,141 × 8

Multiplu bu 1-Digit Numbers

Problem Solving

15. Mr. and Mrs. Dorsey and their three children

Then find the exact cost of the tickets.

are flying to Springfield. The cost of each ticket is \$179. Estimate how much the tickets will cost.

Name _

16. Ms. Tao flies roundtrip twice yearly between

Then find the exact distance.

Jacksonville and Los Angeles on business. The

distance between the two cities is 2,150 miles. Estimate the distance she flies for both trips.

COMMON CORE STANDARD—5.NBT.5 ti-diqit whole o hundredths.

Lesson 1.6

Lesson Check (5.NBT.5)

- 1. Mr. Nielson works 154 hours each month. He works 8 months each year. How many hours does Mr. Nielson work each year?
- **2.** Sasha lives 1,493 miles from her grandmother. One year, Sasha's family made 4 round trips to visit her grandmother. How many miles did they travel in all?

Spiral Review (Reviews 4.NBT.2, 4.NBT.3, 4.NF.6; 5.NBT.1)

- **3.** Yuna missed 5 points out of 100 points on her math test. What decimal number represents the part of her math test that she answered correctly?
- Which symbol makes the statement true?Write >, <, or =.

602,163 620,163

5. The number below represents the number of fans that attended Chicago Cubs baseball games in 2008. What is this number written in standard form?

6. A fair was attended by 755,082 people altogether. What is this number rounded to the nearest ten thousand?

 $(3 \times 1,000,000) + (3 \times 100,000) + (2 \times 100)$

Multiply by 2-Digit Numbers





COMMON CORE STANDARD—**5.NBT.5** Perform operations with multi-digit whole numbers and with decimals to hundredths.

Estimate. Then find the product.

2. Estimate:	3. Estimate:
92×68	$\frac{396}{\times 37}$
5. 86 × 33	6. 78 × 71
8. 612 × 87	9. 476 × 72
	 2. Estimate:

Problem Solving (Real World

- **10.** A company shipped 48 boxes of canned dog food. Each box contains 24 cans. How many cans of dog food did the company ship in all?
- **11.** There were 135 cars in a rally. Each driver paid a \$25 fee to participate in the rally. How much money did the drivers pay in all?

Lesson Check (5.NBT.5)

- **1.** A chessboard has 64 squares. At a chess tournament 84 chessboards were used. How many squares are there on 84 chessboards?
- 2. Last month, a manufacturing company shipped 452 boxes of ball bearings. Each box contains 48 ball bearings. How many ball bearings did the company ship last month?

Spiral Review (5.NBT.1, 5.NBT.2, 5.NBT.5, 5.NBT.6)

- **3.** What is the standard form of the number three million, sixty thousand, five hundred twenty?
- **4.** What number completes the following equation?

 $8 \times (40 + 7) = (8 \times) + (8 \times 7)$

- 5. The population of Clarksville is about 6,000 people. What is the population written as a whole number multiplied by a power of ten?
- **6.** A sporting goods store ordered 144 cans of tennis balls. Each can contains 3 balls. How many tennis balls did the store order?

Problem Solving

- 10. Ken is making gift bags for a party. He has 64 colored pens and wants to put the same number in each bag. How many bags will Ken make if he puts 4 pens in each bag?
- 11. Maritza is buying wheels for her skateboard shop. She ordered a total of 92 wheels. If wheels come in packages of 4, how many packages will she receive?

7. $171 \div 9 =$ _____ **8.** $102 \div 6 =$ _____ **9.** $210 \div 5 =$ _____

 $5 \times 11 - 70$

 $(5 \times 10) + (5 \times 4) = 70$

	5	\wedge	1.44		U	_		
4.	84 -	$\div 6 =$				5.	$168 \div 7 = 100$	

Use multiplication and the Distributive Property to find the quotient.

1. $70 \div 5 =$ **14 2.** $96 \div 6 =$

Relate	Multiplication	to	Division	
			•••••	

Name _____



Common Core Standard—5.NBT.6 Perform operations with multi-digit whole numbers and with decimals to hundredths.

3. $85 \div 5 =$ _____

6. $104 \div 4 =$ _____

Lesson 1.8

Lesson Check (5.NBT.6)

- **1.** Write an expression using the Distributive Property that can be used to find the quotient of $36 \div 3$.
- 2. Write an expression using the Distributive Property that can be used to find the quotient of $126 \div 7$.

Spiral Review (4.0A.3, 5.NBT.1, 5.NBT.2)

- **3.** Allison separates 23 stickers into 4 equal piles. How many stickers does she have left over?
- **4.** A website had 2,135,789 hits. What is the value of the digit 3?

- **5.** The area of Arizona is 114,006 square miles. What is the expanded form of this number?
- **6.** What is the value of the fourth power of ten?

PROBLEM SOLVING Name . Lesson 1.9 **Problem Solving • Multiplication** and Division COMMON CORE STANDARD—5.NBT.6 Perform operations with multi-digit whole numbers and with decimals to hundredths. Solve the problems below. Show your work. 1. Dani is making punch for a family picnic. $104 \div 8 = (40 + 64) \div 8$ She adds 16 fluid ounces of orange juice, $= (40 \div 8) + (64 \div 8)$ 16 fluid ounces of lemon juice, and 8 fluid ounces of lime juice to 64 fluid ounces of = 5 + 8, or 13 water. How many 8-ounce glasses of punch can she fill? 16 + 16 + 8 + 64 = 104 fluid ounces 13 glasses 2. Ryan has nine 14-ounce bags of popcorn to repackage and sell at the school fair. A small bag holds 3 ounces. How many small bags can he make? 3. Bianca is making scarves to sell. She has 33 pieces of blue fabric, 37 pieces of green fabric, and 41 pieces of red fabric. Suppose Bianca uses 3 pieces of fabric to make 1 scarf. How many scarves can she make? 4. Jasmine has 8 packs of candle wax to make scented candles. Each pack contains 14 ounces of wax. Jasmine uses 7 ounces of wax to make one candle. How many candles can she make? 5. Maurice puts 130 trading cards in protector sheets. He fills 7 sheets and puts the remaining 4 cards in an eighth sheet. Each of the filled sheets has the same number of cards. How many cards are in each filled sheet?

Lesson Check (5.NBT.6)

- 1. Joyce is helping her aunt create craft kits. Her aunt has 138 pipe cleaners, and each kit will include 6 pipe cleaners. What is the total number of craft kits they can make?
- **2.** Stefan plants seeds for 30 carrot plants and 45 beet plants in 5 rows, with the same number of seeds in each row. How many seeds are planted in each row?

Spiral Review (Reviews 4.NBT.3; 5.NBT.5, 5.NBT.6)

- **3.** Georgia wants to evenly divide 84 trading cards among 6 friends. How many cards will each friend get?
- **4.** Maria has 144 marbles. Emanuel has 4 times the number of marbles Maria has. How many marbles does Emanuel have?

- **5.** The Conservation Society bought and planted 45 cherry trees. Each tree cost \$367. What was the total cost of planting the trees?
- **6.** A sports arena covers 710,430 square feet of ground. A newspaper reported that the arena covers about 700,000 square feet of ground. To what place value was the number rounded?

Name			Losson 110	
Numerical Expressions				
Write an expression to match the wo	ords.		Common Core Standard — 5.OA.1 , 5.OA.2 Write and interpret numerical expressions.	
1. Ethan collected 16 seashells. He lost 4 of them while walking home.			 Yasmine bought 4 bracelets. Each bracelet cost \$3. 	
16 - 4				
3. Amani did 10 jumping jacks. Then she did 7 more.		4.	Darryl has a board that is 8 feet long. He cuts it into pieces that are each 2 feet long.	
Write words to match the expression	n.	-		
5. 3 + (4 × 12)	6. 36 ÷ 4		7. 24 - (6 + 3)	
Draw a line to match the expression	with the words	•		
8. Ray picked 30 apples and put the baskets. Then he ate two of the ap	$(3 \times 2) \times 30$			
9. Quinn had \$30. She bought a not and a pack of pens for \$2.	$(30 \div 3) - 2$			
0. Colleen runs 3 miles twice a day for 30 days.			30 - (3 + 2)	

- Problem Solving Real World
- **11.** Kylie has 14 polished stones. Her friend gives her 6 more stones. Write an expression to match the words.
- 12. Rashad had 25 stamps. He shared them equally among himself and 4 friends. Then Rashad found 2 more stamps in his pocket. Write an expression to match the words.

ALGEBRA

Lesson Check (5.0A.1)

- Jenna bought 3 packs of bottled water, with 8 bottles in each pack. Then she gave 6 bottles away. Write an expression to match the words.
- 2. Stephen had 24 miniature cars. He gave 4 cars to his brother. Then he passed the rest of the cars out equally among 4 of his friends. Which operation would you use to represent the first part of this situation?

Spiral Review (5.NBT.2, 5.NBT.5, 5.NBT.6)

- **3.** To find 36 + 29 + 14, Joshua rewrote the expression as 36 + 14 + 29. What property did Joshua use to rewrite the expression?
- **4.** There are 6 baskets on the table. Each basket has 144 crayons in it. How many crayons are there?

- **5.** Mr. Anderson wrote $(7 \times 9) \times 10^3$ on the board. What is the value of that expression?
- **6.** Barbara mixes 54 ounces of granola and 36 ounces of raisins. She divides the mixture into 6-ounce servings. How many servings does she make?

Name			ALGEBRA	
Evaluate Numeri	cal Expressions		Lesson 1.11	
		2010	Common Core Standard—5.OA.1 Write and interpret numerical expressions.	
Evaluate the numerica	l expression.			
1. 24 × 5 - 41 120 - 41	2. (32 – 20) ÷ 4	3. $16 \div (2+6)$	4. 15 × (8 − 3)	
79				
5. $4 \times 8 - 7$	6. $27 + 5 \times 6$	7. $3 \div 3 \times 4 + 6$	8. $14 + 4 \times 4 - 9$	
Rewrite the expression	with parentheses to equal th	ne given value.		
9. $3 \times 4 - 1 + 2$	10. $2 \times 6 \div 2 +$	- 1 11.	$5+3 \times 2-6$	
value: 11	value: 4		value: 10	

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Problem Solving Real World

- 12. Sandy has several pitchers to hold lemonade for the school bake sale. Two pitchers can hold 64 ounces each, and four pitchers can hold 48 ounces each. How many total ounces can Sandy's pitchers hold?
- **13.** At the bake sale, Jonah sold 4 cakes for \$8 each and 36 muffins for \$2 each. What was the total amount, in dollars, that Jonah received from these sales?

Lesson Check (5.0A.1)

- **1.** What is the value of the expression $4 \times (4 2) + 6$?
- 2. Lannie ordered 12 copies of the same book for his book club members. The books cost \$19 each, and the order has a \$15 shipping charge. What is the total cost of Lannie's order?

Spiral Review (5.NBT.1, 5.NBT.2, 5.NBT.5, 5.NBT.6)

- **3.** A small company packs 12 jars of jelly into each of 110 boxes to bring to the farmers' market. How many jars of jelly does the company pack in all?
- **4.** June has 42 sports books, 85 mystery books, and 69 nature books. She arranges her books equally on 7 shelves. How many books are on each shelf?

- **5.** Last year, a widget factory produced one million, twelve thousand, sixty widgets. What is this number written in standard form?
- 6. A company has 3 divisions. Last year, each division earned a profit of $$5 \times 10^5$. What was the total profit the company earned last year?

Grouping Symbols

ALGEBRA Lesson 1.12



COMMON CORE STANDARD—**5.OA.1** Write and interpret numerical expressions.

Evaluate the numerical expression.



10. Evaluate the expression to find the total number of muffins and bagels Joan sells in 5 days.

Lesson Check (5.0A.1)

1. What is the value of the expression?

 $30 + [(6 \div 3) + (3 + 4)]$

2. Find the value of the following expression.

 $[(17-9)\times(3\times2)]\div2$

Spiral Review (5.0A.2, 5.NBT.1, 5.NBT.5)

3. What is $\frac{1}{10}$ of 200?

4. The Park family is staying at a hotel near an amusement park for 3 nights. The hotel costs \$129 per night. How much will their 3-night stay in the hotel cost?

- 5. Vidal bought 2 pizzas and cut each into 8 slices. He and his friends ate 10 slices. Write an expression to match the words.
- **6.** What is the value of the underlined digit in 783,5<u>4</u>9,201?