



LESSON PLAN -- PAGE 1 OF 3

Grade 5 Math | Bundle 3 of 6
Multi-Digit Multiplication and Division

Standards: 5.NBT.B.5 | 5.NBT.B.6

LOUISIANA LEAP STANDARDS ADDRESSED

5.NBT.B.5 -- Fluently multiply multi-digit whole numbers using the standard algorithm.

5.NBT.B.6 -- Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, subtracting multiples of the divisor, and/or the relationship between multiplication and division. Illustrate and/or explain the calculation by using equations, rectangular arrays, area models, or other strategies based on place value.

LEARNING OBJECTIVES

- Students will multiply multi-digit whole numbers using the standard algorithm, showing partial products for each place value position.
- Students will divide up to four-digit dividends by two-digit divisors and express quotients with remainders.
- Students will illustrate and explain division using equations, rectangular arrays, and area models.
- Students will interpret remainders in real-world contexts to determine whether to round up, round down, or report the remainder directly.

SUCCESS CRITERIA ("I CAN" STATEMENTS)

- I can multiply a 4-digit number by a 2-digit number using the standard algorithm and show all partial products.
- I can divide a 4-digit number by a 1- or 2-digit divisor and write the quotient with a remainder.
- I can draw an area model or rectangular array to show division.
- I can explain what the remainder means in a real-world problem and decide what to do with it.

LEAP TASK CONNECTION

LEAP Task 4 (5.NBT.B.5) -- Multi-digit multiplication. Answer: 2,947,994

LEAP Task 15 (5.NBT.B.6) -- Division model CR (Type II, 4 points): $6,986 \div 8 = 873 \text{ R}2$. Students must explain points M, N, P, Q, R on a division model diagram.

Practice-test Task 15 is a 4-point Type II constructed response. Students find and explain five values on a division model, give the quotient and remainder, and check using multiplication. This bundle practices the computation and explanation skills used in that task.

KEY VOCABULARY

MATH TERM	PLAIN ENGLISH	EXAMPLE
Factor	A number you multiply	46×23 : factors are 46 and 23
Product	The answer to a multiplication problem	$46 \times 23 = 1,058$
Partial product	Each step in multi-digit multiplication	$46 \times 3 = 138$ is one partial product
Dividend	The number being divided	$6,986 \div 8$: dividend is 6,986
Divisor	The number you divide by	$6,986 \div 8$: divisor is 8
Quotient	The answer to a division problem	$6,986 \div 8 = 873 \text{ R}2$: quotient is 873
Remainder	What is left over after dividing evenly	$6,986 \div 8 = 873 \text{ R}2$: remainder is 2
Area model	A rectangle showing multiplication or division by place value	See Code Card 2



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CODE CARD 1 -- STANDARD ALGORITHM: MULTI-DIGIT MULTIPLICATION (5.NBT.B.5)

Louisiana Anchor: Delacroix Shrimp Boat Fleet

Every partial product has a place. Skip one and the whole answer is wrong.

STEP 1: IDENTIFY MATH TERMS

MATH TERM	PLAIN ENGLISH	EXAMPLE
Multiply	Repeated addition -- equal groups	$1,247 \times 6 =$ six groups of 1,247
Factor	Each number being multiplied	Factors: 1,247 and 46
Partial product	Product of one digit times the full top number	$1,247 \times 6 = 7,482$
Tens partial product	Partial product of the tens digit -- shift left 1 place	$1,247 \times 40 = 49,880$
Regrouping	Carrying a digit to the next column when > 9	$7 \times 6 = 42$: write 2, carry 4
Estimate	Round factors to check if the answer is reasonable	$1,247 \times 46 \sim 1,250 \times 46 \sim 57,500$

STEP 2: IDENTIFY THE OPERATION -- NUMBERS FIRST

THE SHRIMP BOAT PROBLEM (Numbers First):

A shrimp boat in Delacroix catches 1,247 pounds per trip. The fleet makes 46 trips in one season. What is the total catch?

ESTIMATE FIRST: Round 1,247 to 1,250. Then $1,250 \times 46 = 57,500$. Expect a product near 57,500.

STANDARD ALGORITHM: $1,247 \times 46$

ROW 1 -- Multiply by ONES digit (6):

$$6 \times 7 = 42: \text{write } 2, \text{ carry } 4$$

$$6 \times 4 = 24, + 4 \text{ carry} = 28: \text{write } 8, \text{ carry } 2$$

$$6 \times 2 = 12, + 2 \text{ carry} = 14: \text{write } 4, \text{ carry } 1$$

$$6 \times 1 = 6, + 1 \text{ carry} = 7: \text{write } 7$$

Ones partial product: 7,482

ROW 2 -- Multiply by TENS digit (4), SHIFT ONE PLACE LEFT:

$$4 \times 7 = 28: \text{write } 8 \text{ in TENS column (shifted), carry } 2$$

$$4 \times 4 = 16, + 2 = 18: \text{write } 8, \text{ carry } 1$$

$$4 \times 2 = 8, + 1 = 9: \text{write } 9$$

$$4 \times 1 = 4: \text{write } 4$$

Tens partial product: 49,880 (note: shifted -- the 8 is in the tens column)

ADD PARTIAL PRODUCTS:

$$7,482 + 49,880 = 57,362$$

KEY RULE: The tens partial product row ALWAYS starts one column to the LEFT (or use a placeholder zero).

Without the shift: $7,482 + 4,988 = 12,470$, which is too small.

STEP 3: CHECK REAL-WORLD SENSE

57,362 is 138 below the estimate of 57,500: reasonable. Check the exact partial products too.

12,470 is far below 57,500. Check the tens-place shift.

STEP 4: ELIMINATE WRONG CHOICES

Trap: Omitting the tens-place shift gives a product far below a reasonable estimate.

Trap 2: A carrying error changes a partial product. Check each column, including the carried value.



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SELECTED RESPONSE -- STUDENT PRACTICE

Name: _____ Date: _____ Standard: 5.NBT.B.5 / 5.NBT.B.6

Directions: Use the Crack the Problem Method. Show all four steps. Circle the correct answer.

A Cajun seafood market in Lake Charles orders 1,486 pounds of crawfish per week. The market is open for 52 weeks per year. How many total pounds of crawfish does the market order in one year?

STEP 1 -- Identify the math terms:

PHRASE FROM PROBLEM	WHAT IT MEANS	MATH NOTATION
1,486 pounds per week		
52 weeks per year		
total pounds per year		

STEP 2 -- Show your work. ESTIMATE first: $1,486 \sim$ _____ $\times 52 \sim$ _____

Ones row ($\times 2$): _____

Tens row ($\times 5$, SHIFT ONE PLACE LEFT): _____

Add partial products: _____

STEP 3 -- Is your answer close to your estimate? YES / NO My estimate: _____ My answer: _____

STEP 4 -- Eliminate and circle:

- A. 72,272 pounds
- B. 77,272 pounds
- C. 77,352 pounds
- D. 78,772 pounds

My answer is: _____ Elimination reason: _____



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TASK CARDS 1-4 (PRINT, CUT, LAMINATE)

TASK CARD 1

5.NBT.B.5

What is $1,324 \times 23$?

- A. 3,972
- B. 30,452
- C. 26,480
- D. 6,620

TASK CARD 2

5.NBT.B.5

A student multiplies $2,416 \times 35$. Their ones partial product is 16,912. Is this correct?

- A. Yes -- the ones partial product is right
- B. No -- the ones partial product should be 7,248
- C. No -- it should be 12,080
- D. Yes -- but the tens row was added wrong

TASK CARD 3

5.NBT.B.6

Solve: $4,236 \div 6$. What is the quotient and remainder?

- A. 700 R0
- B. 706 R0
- C. 760
- D. 760 R0

TASK CARD 4

5.NBT.B.6

There are 3,850 students going on a trip. Each van seats 12 students. How many vans are needed to seat all students?

- A. 320 vans
- B. 321 vans
- C. 322 vans
- D. 323 vans

Task Card 4 requires remainder interpretation -- "seat ALL students" = round UP. Use self-check cards to verify.