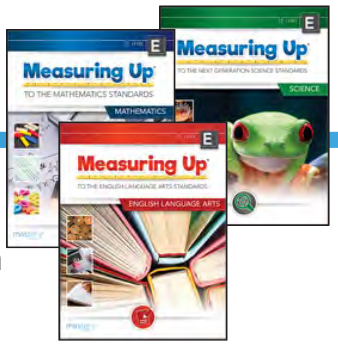
Try It Out! Sample Pack | Math | Grade 5 | Lesson 2
Measuring Up to the Standards



The **Try It Out!** sample pack features:

- 1 full student lesson with complete Teacher Edition lesson
- 1 full Table of Contents for your grade level
- Correlation to the standards

Developed to meet the rigor of the standards, ***Measuring Up*** employs support for using and applying critical thinking skills with direct standards instruction that elevate and engage student thinking.

Standards-based lessons feature introductions that set students up for success with:

- Vocabulary in Action
- Relevant real-world connections
- Clearly identified learning goals
- Connections to prior learning

Guided Instruction and Independent Learning strengthen learning with:

- Deep thinking prompts
- Collaborative learning
- Self-evaluation
- Demonstration of problem-solving logic
- Application of higher-order thinking

Flexible design meets the needs of whole- or small-group instruction. Use for:

- Introducing standards
- Reinforcement or standards review
- Intervention
- Remediation
- Test Preparation

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WORD TO KNOW

partial product

Lesson 2

MULTIPLY WHOLE NUMBERS 5.NBT.B.5

INTRODUCTION

Real-World Connection

The students at Laura's school picked strawberries. They placed 35 berries in each basket. They filled 18 baskets. How many strawberries did they pick? Let's practice the skills in the **Guided Instruction** and **Independent Practice** and see how the students solve this problem at the end of the lesson!

What I Am Going to Learn

- How to multiply multi-digit numbers
- How to use partial products in multiplication

What I May Already Know 4.NBT.B.5, 3.OA.B.5

- I know how to multiply a number up to 4 digits by a single-digit number.
- I know how to multiply two 2-digit numbers.
- I know how to use the Distributive Property.

Vocabulary in Action

- Multiplication problems can be solved using **partial products**.
  - Partial products are the result of breaking the problem into smaller multiplication problems that can be added together.
  - For example, 43×23 can be thought of as $43 \times 3 + 43 \times 20$.
- You may recognize the Distributive Property in partial products.
  - Remember problems like $8 \times 9 = 8(5 + 4) = 8 \times 5 + 8 \times 4$?
  - For multi-digit multiplication, one number is broken by place value: $534 \times 187 = 534 \times 7 + 534 \times 80 + 534 \times 100$

EXAMPLE

What is 43 × 23?

$$\begin{array}{r} 43 \\ \times\ 23 \\ \hline 129 \\ +\ 860 \\ \hline 989 \end{array}$$

Step One Find the first partial product (3 × 43).

Step Two Find the second partial product (20 × 43).

Step Three Add to find the total product.

A theater might have 23 rows of 43 seats, for a total of 989 seats.

HINT, HINT

You can break 3 × 43 into 3 × 3 + 3 × 40 and 20 × 43 into 20 × 3 + 20 × 40.

Regardless of the number of digits, the same process can be used.

EXAMPLE

What is 534 × 187?

$$\begin{array}{r} 534 \\ \times\ 187 \\ \hline 3\,738 \\ 42\,720 \\ +\ 53\,400 \\ \hline 99{,}858 \end{array}$$

There are three partial products:

534 × 7 = 3,738

534 × 80 = 42,720

534 × 100 = 53,400

THINK ABOUT IT

You can use estimation to see if your answer is reasonable. 534 × 187 is about 500 × 200, or about 100,000. So, 99,858 is reasonable.

EXAMPLE

What is 2,486 x 28?

$$\begin{array}{r} 2{,}486 \\ \times \quad 28 \\ \hline 19\,888 \\ +\ 49\,720 \\ \hline 69{,}608 \end{array}$$

Step One Multiply $8 \times 2{,}486 = 19{,}888$

Step Two Multiply $20 \times 2{,}486 = 49{,}720$

Step Three Add $19{,}888 + 49{,}720 = 69{,}608$

GUIDED INSTRUCTION

1. $38 \times 36 =$

Step One Write the problem vertically, lining up the factors by place value.

$$\begin{array}{r} 38 \\ \times\ 36 \\ \hline \end{array}$$

Step Two Multiply 38 by 6. Regroup to find the partial product.

$$\begin{array}{r} {\scriptstyle 4} \\ 38 \\ \times\ 36 \\ \hline 228 \end{array}$$

Step Three Multiply 38 by 30. Regroup to find the partial product.

$$\begin{array}{r} {\scriptstyle 2\ \not{4}} \\ 38 \\ \times 36 \\ \hline 228 \\ 1140 \end{array}$$

Step Four Add the partial products to find the solution.

$$\begin{array}{r} {\scriptstyle 2\ \not{4}} \\ 38 \\ \times\ 36 \\ \hline 228 \\ +\ 1140 \\ \hline 1{,}368 \end{array}$$

2. Find the product of 1,304 and 32.

Step One Find the partial products.

$$\begin{array}{r} 1{,}304 \\ \times\ 32 \\ \hline 2608 \\ 39120 \\ \hline \end{array}$$

Step Two Add the partial products to find the solution.

$$\begin{array}{r} 1{,}304 \\ \times\ 32 \\ \hline 2608 \\ +\ 39120 \\ \hline \boxed{} \end{array}$$

3. Which expressions equal 352? Select the two correct answers.

Ⓐ 22×16

Ⓑ 88×4

Ⓒ 16×24

Ⓓ 19×23

Ⓔ 24×18

TIPS AND TRICKS

Regrouping can be confusing when multiplying multi-digit numbers. After you use a regrouped number, cross it out so you don't use it again.

HINT, HINT

Look at the ones digits of the factors. See if you can eliminate any answer choices based on the ones digit of the product.

SKETCH IT

In the space below, make a drawing to show a multiplying of multi-digit numbers.

Color in the traffic signal that shows how you are doing with the skill.

How Am I Doing?

What questions do you have?

What is the first step in multiplying using partial products?

Describe a situation where you would need to multiply multi-digit numbers.

INDEPENDENT PRACTICE

Answer the questions.

1. Find the product.

$69 \times 47 = \square$

Ⓐ 483
Ⓑ 759
Ⓒ 2,143
Ⓓ 3,243

TIPS AND TRICKS

Each incorrect answer in a multiple-choice question represents a common mistake. Try to identify the mistake that could lead to each answer choice.

2. Use the numbers in the box to complete the multiplication problem. Not all of the numbers will be used. Write each number in the appropriate box.

18,350	52	25,690	19,084	70

$$\begin{array}{r} 367 \\ \times \quad \square \\ \hline 734 \\ + \quad \square\square\square \\ \hline \square\square\square \end{array}$$

3. Determine if each equation is correct. Select Yes or No.

a.	$88 \times 19 = 1{,}842$	○ Yes	○ No
b.	$88 \times 19 = 1{,}672$	○ Yes	○ No
c.	$88 \times 33 = 2{,}904$	○ Yes	○ No
d.	$88 \times 15 = 1{,}320$	○ Yes	○ No

4. What is 2,367 × 34?

Write your answer in the box.

WORK SPACE

WORK SPACE

5. What is the product of 54 × 77?

Ⓐ 378 Ⓑ 756

Ⓒ 4,158 Ⓓ 7,560

6. Circle the number to complete the statement.

The product of 712 × 19 is .

1,424

2,136

13,528

27,768

7. Part A

Anna multiplied 543 × 82.

$$\begin{array}{r} 543 \\ \times\ 82 \\ \hline 1086 \\ +\ 434400 \\ \hline 435,486 \end{array}$$

What error did Anna make?

Part B

What is the correct product for the expression in Part A?
Write your answer in the box.

8. Without doing the multiplication, explain how you can tell that the product of 38 and 62 is not 236.

EXIT TICKET

5.NBT.B.5

Now that you have mastered multiplying multi-digit numbers, let's solve the problem in the Real-World Connection.

The students at Laura's school picked strawberries. They placed 35 berries in each basket. They filled 18 baskets. How many strawberries did they pick? Show your work.

ANNOTATED
TEACHER EDITION

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CONTENTS

Introduction

Chapter 1 OPERATIONS WITH WHOLE NUMBERS

Chapter 2 DECIMALS

Chapter 3 OPERATIONS WITH FRACTIONS

CONTENTS

Chapter 4 MEASUREMENT

Chapter 5 GEOMETRY

References

Correlation to the Common Core State Standards

This worktext is customized to the Common Core State Standards for Mathematics.
Most lessons focus on one content standard for in-depth review.
Mathematical Practices are interwoven throughout each lesson to connect practices to content at point-of-use and promote depth of understanding.

Common Core State Standards	Lessons
5.OA Operations and Algebraic Thinking	
A. Write and interpret numerical expressions.	
1. Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.	4
2. Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. *For example, express the calculation "add 8 and 7, then multiply by 2" as 2 × (8 + 7). Recognize that 3 × (18,932 + 921) is three times as large as 18,932 + 921, without having to calculate the indicated sum or product.*	4
B. Analyze patterns and relationships.	
3. Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. *For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.*	27
5.NBT Number and Operations in Base Ten	
A. Understand the place value system.	
1. Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and $\frac{1}{10}$ of what it represents in the place to its left.	1
2. Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.	1
3. Read, write, and compare decimals to thousandths.	5
a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (\frac{1}{10}) + 9 \times (\frac{1}{100}) + 2 \times (\frac{1}{1,000})$.	5
b. Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.	5
4. Use place value understanding to round decimals to any place.	6
B. Perform operations with multi-digit whole numbers and with decimals to hundredths.	
5. Fluently multiply multi-digit whole numbers using the standard algorithm.	2

CORRELATIONS

Common Core State Standards	Lessons
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, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	3
7. Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	7, 8, 9
5.NF Number and Operations-Fractions	
A. Use equivalent fractions as a strategy to add and subtract fractions.	
1. Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. *For example,* $\frac{2}{3} + \frac{5}{4} = \frac{8}{12} + \frac{15}{12} = \frac{23}{12}$. *(In general,* $\frac{a}{b} + \frac{c}{d} = \frac{(ad + bc)}{bd}$.*)*	10
2. Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. *For example, recognize an incorrect result* $\frac{2}{5} + \frac{1}{2} = \frac{3}{7}$*, by observing that* $\frac{3}{7} < \frac{1}{2}$.	11
B. Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	
3. Interpret a fraction as division of the numerator by the denominator ($\frac{a}{b} = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. *For example, interpret* $\frac{3}{4}$ *as the result of dividing 3 by 4, noting that* $\frac{3}{4}$ *multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size* $\frac{3}{4}$*. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?*	12
4. Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.	13, 14
a. Interpret the product $(\frac{a}{b}) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. *For example, use a visual fraction model to show* $(\frac{2}{3}) \times 4 = \frac{8}{3}$*, and create a story context for this equation. Do the same with* $(\frac{2}{3}) \times (\frac{4}{5}) = \frac{8}{15}$. *(In general,* $(\frac{a}{b}) \times (\frac{c}{d}) = \frac{ac}{bd}$.*)*	13
b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.	14
5. Interpret multiplication as scaling (resizing), by:	15
a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.	15

Common Core State Standards	Lessons
b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $\frac{a}{b} = \frac{(n \times a)}{(n \times b)}$ to the effect of multiplying $\frac{a}{b}$ by 1.	15
6. Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.	18
7. Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.	16, 17, 18
a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. *For example, create a story context for* $(\frac{1}{3}) \div 4$*, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that* $(\frac{1}{3}) \div 4 = \frac{1}{12}$ *because* $(\frac{1}{12}) \times 4 = \frac{1}{3}$.	16
b. Interpret division of a whole number by a unit fraction, and compute such quotients. *For example, create a story context for* $4 \div (\frac{1}{5})$*, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that* $4 \div (\frac{1}{5}) = 20$ *because* $20 \times (\frac{1}{5}) = 4$.	17
c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, how much chocolate will each person get if 3 people share* $\frac{1}{2}$ *lb of chocolate equally? How many* $\frac{1}{3}$*-cup servings are in 2 cups of raisins?*	18
5.MD Measurement and Data	
A. Convert like measurement units within a given measurement system.	
1. Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.	20
B. Represent and interpret data.	
2. Make a line plot to display a data set of measurements in fractions of a unit $(\frac{1}{2}, \frac{1}{4}, \frac{1}{8})$. Use operations on fractions for this grade to solve problems involving information presented in line plots. *For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.*	19
C. Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.	
3. Recognize volume as an attribute of solid figures and understand concepts of volume measurement.	21
a. A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume.	21
b. A solid figure which can be packed without gaps or overlaps using *n* unit cubes is said to have a volume of *n* cubic units.	21
4. Measure volumes by counting unit cubes, using cubic cm, cubic in., cubic ft, and improvised units.	21
5. Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.	22, 23

Common Core State Standards	Lessons
a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.	22
b. Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems.	22
c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.	23
5.G Geometry	
A. Graph points on the coordinate plane to solve real-world and mathematical problems.	
1. Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., *x*-axis and *x*-coordinate, *y*-axis and *y*-coordinate).	25
2. Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.	26
B. Classify two-dimensional figures into categories based on their properties.	
3. Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. *For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.*	24
4. Classify two-dimensional figures in a hierarchy based on properties.	24

WORD TO KNOW

partial product

Lesson 2

MULTIPLY WHOLE NUMBERS 5.NBT.B.5

INTRODUCTION

Real-World Connection

The students at Laura's school picked strawberries. They placed 35 berries in each basket. They filled 18 baskets. How many strawberries did they pick? Let's practice the skills in the Guided Instruction and Independent Practice and see how the students solve this problem at the end of the lesson!

What I Am Going to Learn

- How to multiply multi-digit numbers
- How to use partial products in multiplication

What I May Already Know 4.NBT.B.5, 3.OA.B.5

- I know how to multiply a number up to 4 digits by a single-digit number.
- I know how to multiply two 2-digit numbers.
- I know how to use the Distributive Property.

Vocabulary in Action

- Multiplication problems can be solved using partial products.
  - Partial products are the result of breaking the problem into smaller multiplication problems that can be added together.
  - For example, 43×23 can be thought of as $43 \times 3 + 43 \times 20$.
- You may recognize the Distributive Property in partial products.
  - Remember problems like $8 \times 9 = 8(5 + 4) = 8 \times 5 + 8 \times 4$?
  - For multi-digit multiplication, one number is broken by place value: $534 \times 187 = 534 \times 7 + 534 \times 80 + 534 \times 100$

EXAMPLE

What is 43×23?

$$\begin{array}{r} 43 \\ \times\ 23 \\ \hline 129 \\ +\ 860 \\ \hline 989 \end{array}$$

Step One Find the first partial product (3×43).

Step Two Find the second partial product (20×43).

Step Three Add to find the total product.

A theater might have 23 rows of 43 seats, for a total of 989 seats.

HINT, HINT

You can break 3×43 into $3 \times 3 + 3 \times 40$ and 20×43 into $20 \times 3 + 20 \times 40$.

Regardless of the number of digits, the same process can be used.

EXAMPLE

What is 534×187?

$$\begin{array}{r} 534 \\ \times\ 187 \\ \hline 3\,738 \\ 42\,720 \\ +\ 53\,400 \\ \hline 99{,}858 \end{array}$$

There are three partial products:

$534 \times 7 = 3{,}738$

$534 \times 80 = 42{,}720$

$534 \times 100 = 53{,}400$

THINK ABOUT IT

You can use estimation to see if your answer is reasonable. 534×187 is about 500×200, or about 100,000. So, 99,858 is reasonable.

EXAMPLE

What is 2,486 x 28?

$$\begin{array}{r} 2{,}486 \\ \times \quad 28 \\ \hline 19\,888 \\ +\ 49\,720 \\ \hline 69{,}608 \end{array}$$

Step One Multiply $8 \times 2{,}486 = 19{,}888$

Step Two Multiply $20 \times 2{,}486 = 49{,}720$

Step Three Add $19{,}888 + 49{,}720 = 69{,}608$

GUIDED INSTRUCTION

1. $38 \times 36 =$

Step One Write the problem vertically, lining up the factors by place value.

$$\begin{array}{r} 38 \\ \times\ 36 \\ \hline \end{array}$$

Step Two Multiply 38 by 6. Regroup to find the partial product.

$$\begin{array}{r} {\scriptstyle 4} \\ 38 \\ \times\ 36 \\ \hline 228 \end{array}$$

Step Three Multiply 38 by 30. Regroup to find the partial product.

$$\begin{array}{r} {\scriptstyle 2\ \not{3}} \\ 38 \\ \times 36 \\ \hline 228 \\ 1140 \end{array}$$

Step Four Add the partial products to find the solution.

$$\begin{array}{r} {\scriptstyle 2\ \not{3}} \\ 38 \\ \times\ 36 \\ \hline 228 \\ +\ 1140 \\ \hline 1{,}368 \end{array}$$

2. Find the product of 1,304 and 32.

Step One Find the partial products.

$$\begin{array}{r} 1{,}304 \\ \times\ 32 \\ \hline 2608 \\ 39120 \end{array}$$

Step Two Add the partial products to find the solution.

$$\begin{array}{r} 1{,}304 \\ \times\ 32 \\ \hline 2608 \\ +\ 39120 \\ \hline 41{,}728 \end{array}$$

3. Which expressions equal 352? Select the two correct answers.

Ⓐ 22×16

Ⓑ 88×4

Ⓒ 16×24

Ⓓ 19×23

Ⓔ 24×18

TIPS AND TRICKS

Regrouping can be confusing when multiplying multi-digit numbers. After you use a regrouped number, cross it out so you don't use it again.

HINT, HINT

Look at the ones digits of the factors. See if you can eliminate any answer choices based on the ones digit of the product.

SKETCH IT

In the space below, make a drawing to show a multiplying of multi-digit numbers.

How Am I Doing?

What questions do you have?

What is the first step in multiplying using partial products?

Describe a situation where you would need to multiply multi-digit numbers.

Color in the traffic signal that shows how you are doing with the skill.

INDEPENDENT PRACTICE

Answer the questions.

1. Find the product.

$69 \times 47 = \square$

Ⓐ 483 Ⓑ 759

Ⓒ 2,143 Ⓓ 3,243

TIPS AND TRICKS

Each incorrect answer in a multiple-choice question represents a common mistake. Try to identify the mistake that could lead to each answer choice.

2. Use the numbers in the box to complete the multiplication problem. Not all of the numbers will be used. Write each number in the appropriate box.

18,350	52	25,690	19,084	70

$$\begin{array}{r} 367 \\ \times \quad 52 \\ \hline 734 \\ +\ 18{,}350 \\ \hline 19{,}084 \end{array}$$

3. Determine if each equation is correct. Select Yes or No.

a.	$88 \times 19 = 1{,}842$	○ Yes	● No
b.	$88 \times 19 = 1{,}672$	● Yes	○ No
c.	$88 \times 33 = 2{,}904$	● Yes	○ No
d.	$88 \times 15 = 1{,}320$	● Yes	○ No

4. What is $2{,}367 \times 34$?

Write your answer in the box.

80,478

WORK SPACE

WORK SPACE

5. What is the product of 54 × 77?

Ⓐ 378 Ⓑ 756

Ⓒ 4,158 Ⓓ 7,560

6. Circle the number to complete the statement.

The product of 712 × 19 is

1,424
2,136
13,528
27,768

7. **Part A**

Anna multiplied 543 × 82.

$$\begin{array}{r} 543 \\ \times\ 82 \\ \hline 1086 \\ +\ 434400 \\ \hline 435{,}486 \end{array}$$

What error did Anna make?

Sample answer: Anna multiplied 543 by 800, not 80.

Part B

What is the correct product for the expression in Part A? Write your answer in the box.

44,526

8. Without doing the multiplication, explain how you can tell that the product of 38 and 62 is not 236.

Sample answer: The product is not great enough. 38 × 62 is about 40 × 60, or around 2,400. 236 is about 10 times too low.

EXIT TICKET

5.NBT.B.5

Now that you have mastered multiplying multi-digit numbers, let's solve the problem in the Real-World Connection.

The students at Laura's school picked strawberries. They placed 35 berries in each basket. They filled 18 baskets. How many strawberries did they pick? Show your work.

They picked 630 strawberries.

Multiply 18 × 35.

$$\begin{array}{r} 35 \\ \times 18 \\ \hline 280 \\ +\ 350 \\ \hline 630 \end{array}$$

Or, $18 \times 35 = 8 \times 35 + 10 \times 35$
$= 280 + 350$
$= 630$

Or, $18 \times 35 = 20 \times 35 - 2 \times 35$
$= 700 - 70$
$= 630$

TEACHER NOTES

REAL-WORLD GOALS FOR STUDENTS

- Students will understand how to multiply multi-digit numbers using partial products.
- Students will understand that they are using the Distributive Property to multiply multi-digit numbers.

TIPS FOR THE STRUGGLING LEARNER

- Students may struggle with the idea of keeping track of the partial products within partial products (e.g., $4 \times 43 = 4 \times 3 + 4 \times 40$) and the regrouping involved. These students may need to list all the partial products and then add.
- Be sure students know the correct place value of each digit in each factor. For instance, in 4×43, students might try multiplying 4×4 instead of 4×40. If it helps students, ask them to draw vertical lines to separate the place-value columns.

TIPS FOR THE ENGLISH LANGUAGE LEARNER

- English learners may have difficulty with the term *partial product*. Have students repeat what they know about the term. Then ask, what does *partial product* mean? Underline *part* in *partial*. Discuss what this word means. Then, put it together with their definition of *product* to define the term *partial product*.

ACTIVITIES FOR THE ADVANCED LEARNER

- Students can explore similarities and differences in using the Commutative Property. For example, how do the partial products in 89×22 compare to 22×89?
- Students can explore which order they feel would be easier to multiply for given numbers. Have students explain their reasoning.
- Students can explore and discuss when the process of multiplying and then subtracting is easier than multiplying and then adding, as shown in $18 \times 35 = 20 \times 35 - 2 \times 35$.