

Learning Objective
We will multiply using the multiplication algorithm.

CFU
What are we going to learn?

Activate Prior Knowledge
Multiply the numbers.

1.
$$\begin{array}{r} 546 \\ \times 7 \\ \hline 3822 \end{array}$$

2.
$$\begin{array}{r} 278 \\ \times 6 \\ \hline 1668 \end{array}$$

Make Connection
Students, you already know how to multiply by a single number. Now, we will multiply using the multiplication algorithm.

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READY TO TEACH™ EDI™ Lessons
CCSS 5th Grade Numbers and Base Ten 5.0
Fluently multiply multi-digit whole numbers using the standard algorithm.
Lesson to be used by ESE-trained teachers only.

Skill Development/Guided Practice (continued)
The **multiplication algorithm** is a **step-by-step** method for solving a multiplication problem.
• The multiplication algorithm involves multiplying by place value then adding the partial products.
Partial products are the smaller products obtained when multiplying by place value.

Multiply using the multiplication algorithm.
1. Multiply by place values beginning with the ones place.
2. Write digits in the correct place value.
3. Add digits in the same place value as needed.
4. Add the partial products.
5. Interpret the multiplication problem. "_____ times _____ is equal to _____."

CFU
1. How did I/you multiply by place values?

3.
$$\begin{array}{r} 82 \\ \times 36 \\ \hline 492 \\ +2460 \\ \hline 2952 \end{array}$$

4.
$$\begin{array}{r} 76 \\ \times 42 \\ \hline 152 \\ +3040 \\ \hline 3192 \end{array}$$

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Concept Development
The **multiplication algorithm** is a **step-by-step** method for solving a multiplication problem.
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Multiplication Algorithm

$$\begin{array}{r} 278 \\ \times 56 \\ \hline 1668 \\ +13900 \\ \hline 15568 \end{array}$$

Multiply by the ones place. (6×278)
Multiply by the tens place. (50×278)
Add the partial products

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914
 $\times 73$
For the multiplication problem above, which would you multiply first if using the multiplication algorithm? Which would you multiply second? How do you know?
A 70×914 second
B 7×914
C 30×914
D 3×914 first
In your own words, what is the multiplication algorithm?
"The multiplication algorithm is _____."
Vocabulary
1. gotten

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CFU
1. How did I/you multiply by place values?

5.
$$\begin{array}{r} 729 \\ \times 43 \\ \hline 2187 \\ +29160 \\ \hline 31347 \end{array}$$

6.
$$\begin{array}{r} 628 \\ \times 35 \\ \hline 3140 \\ +18840 \\ \hline 21980 \end{array}$$

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CFU
1. How did I/you multiply by place values?

1.
$$\begin{array}{r} 53 \\ \times 24 \\ \hline 212 \\ +1060 \\ \hline 1272 \end{array}$$

2.
$$\begin{array}{r} 46 \\ \times 13 \\ \hline 138 \\ +460 \\ \hline 598 \end{array}$$

Vocabulary
2. explain

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CFU
1. How did I/you multiply by place values?

7.
$$\begin{array}{r} 493 \\ \times 251 \\ \hline 493 \\ 24650 \\ +98600 \\ \hline 123743 \end{array}$$

8.
$$\begin{array}{r} 579 \\ \times 134 \\ \hline 2316 \\ 17370 \\ +57900 \\ \hline 77586 \end{array}$$

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Relevance

The **multiplication algorithm** is a **step-by-step** method for solving a multiplication problem.

- The multiplication algorithm involves multiplying by place value then adding the partial products.

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1 Multiplying using the multiplication algorithm will help you manage your money.



Martha earns \$149 a week washing cars. A year has 52 weeks. How much does she earn in a year?

$$\begin{array}{r} 149 \\ \times 52 \\ \hline 298 \\ +7450 \\ \hline 7748 \end{array}$$

Martha earns \$7,748 a year.

2 Multiplying using the multiplication algorithm will help you do well on tests.

Sample Test Question:

15. What is the product of the problem below?

$$\begin{array}{r} 527 \\ \times 134 \\ \hline \end{array}$$

A. 70,306
B. 70,618
C. 69,618
D. 70,538

CRU

Does anyone else have another reason why it is relevant to multiply using the multiplication algorithm? (Pair-Share) Why is it relevant to multiply using the multiplication algorithm? You may give one of my reasons or one of your own. Which reason is more relevant to you? Why?

Vocabulary

Take care of

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Independent Practice (continued)

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3.

$$\begin{array}{r} 583 \\ \times 42 \\ \hline 1166 \\ +23320 \\ \hline 24486 \end{array}$$

4.

$$\begin{array}{r} 726 \\ \times 59 \\ \hline 6534 \\ +36300 \\ \hline 42834 \end{array}$$

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Skill Closure

The **multiplication algorithm** is a **step-by-step** method for solving a multiplication problem.

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- Interpret the multiplication problem. "_____ times _____ is equal to _____."

1.

$$\begin{array}{r} 82 \\ \times 56 \\ \hline 492 \\ +4100 \\ \hline 4592 \end{array}$$

2.

$$\begin{array}{r} 751 \\ \times 46 \\ \hline 4506 \\ +30040 \\ \hline 34546 \end{array}$$

Access Common Core

The multiplication problem to the right was incorrectly worked out. Determine the error that was made.

$$\begin{array}{r} 57 \\ \times 28 \\ \hline 106 \\ +1040 \\ \hline 1146 \end{array}$$

Summary Closure

What did you learn today about multiplying using the multiplication algorithm? (Pair-Share)

Use words from the word bank.

Word Bank

algorithm
place value
partial
method

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Independent Practice (continued)

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$$\begin{array}{r} 754 \\ \times 632 \\ \hline 1508 \\ 22820 \\ +452400 \\ \hline 476528 \end{array}$$

6.

$$\begin{array}{r} 279 \\ \times 583 \\ \hline 837 \\ 22320 \\ +134500 \\ \hline 162657 \end{array}$$

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Independent Practice

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1.

$$\begin{array}{r} 73 \\ \times 26 \\ \hline 438 \\ +1460 \\ \hline 1898 \end{array}$$

2.

$$\begin{array}{r} 97 \\ \times 44 \\ \hline 388 \\ +3880 \\ \hline 4268 \end{array}$$

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Access Common Core

As you work out each problem below, explain your work at each step.

Periodic Review 1

Multiply using the multiplication algorithm.

1.

$$\begin{array}{r} 43 \\ \times 15 \\ \hline 215 \\ +430 \\ \hline 645 \end{array}$$

Multiply 5 × 43
Multiply 10 × 43
Add the partial products

2.

$$\begin{array}{r} 81 \\ \times 63 \\ \hline \end{array}$$

3.

$$\begin{array}{r} 97 \\ \times 48 \\ \hline \end{array}$$

4.

$$\begin{array}{r} 204 \\ \times 79 \\ \hline \end{array}$$

5.

$$\begin{array}{r} 518 \\ \times 427 \\ \hline \end{array}$$

6.

$$\begin{array}{r} 744 \\ \times 361 \\ \hline \end{array}$$

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Periodic Review 2

Multiply using the multiplication algorithm.

- $$\begin{array}{r} 92 \\ \times 45 \\ \hline 4140 \end{array}$$
- $$\begin{array}{r} 637 \\ \times 58 \\ \hline 36946 \end{array}$$
- $$\begin{array}{r} 8137 \\ \times 42 \\ \hline 341754 \end{array}$$

Access Common Core

The multiplication problems below were incorrectly worked out. Determine the error that was made.

- $$\begin{array}{r} 108 \\ \times 37 \\ \hline 756 \\ + 324 \\ \hline 1080 \end{array}$$
- $$\begin{array}{r} 53 \\ \times 68 \\ \hline 204 \\ + 3080 \\ \hline 3284 \end{array}$$
- $$\begin{array}{r} 746 \\ \times 23 \\ \hline 2238 \\ + 14920 \\ \hline 17368 \end{array}$$

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Periodic Review 3

Multiply using the multiplication algorithm.

- $$\begin{array}{r} 407 \\ \times 183 \\ \hline 74481 \end{array}$$
- $$\begin{array}{r} 571 \\ \times 427 \\ \hline 243817 \end{array}$$
- $$\begin{array}{r} 2908 \\ \times 647 \\ \hline 1881476 \end{array}$$

Access Common Core

Margie is ordering equipment for the new office building. Determine the total cost if she purchases the quantity of each equipment listed. Use the table to answer the question.

Equipment	Cost
laser printer	\$68
laptop	\$734
conference table	\$1,584
office desk	\$139
office chair	\$53

- 24 conference tables
- 276 office chairs
- 37 laser printers
- 276 office desks

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EDI – Cognitive, Teaching, and English Learner Strategies

Learning Objective: We will multiply using the multiplication algorithm.

	Cognitive Strategies	Teaching Strategies
Elaboration		Demonstration
Targeted Vocabulary	Language Strategies Academic: obtained Content: multiplication algorithm, partial products Support: manage	
Vocabulary Strategy	Multiple-Meaning: obtained, interpret Synonym: multiplication algorithm, partial products, manage Definition: Homophone: Internal Context Clue:	
Listen, Speak	Similar Sounds	
Read	Tracked Reading	
Write	Writing	
Comprehensible Input	Content Access Strategies Cognates Graphic Organizer Contextualized Definitions Pictures	

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