

# Unit 4: Multi-Digit Multiplication

Content Area: **Mathematics**  
Course(s): **Mathematics 4**  
Time Period: **December**  
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## **Enduring Understandings**

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Computational fluency requires efficient, accurate, and flexible methods for computing.

Success in all future math learning is contingent upon acquisition of multiplication.

## **Essential Questions**

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What does it mean to be computationally fluent?

Why is it important to use a strategic approach for acquisition of the basic multiplication facts?

## **Content**

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### Vocabulary

Array

Multiplication

Commutative property

Associative property

Estimate

Grid

Multiple

Partial products

Table

Units

Vertical format

[http://www.mathplayground.com/common\\_core\\_state\\_standards\\_for\\_mathematics\\_grade\\_4.html](http://www.mathplayground.com/common_core_state_standards_for_mathematics_grade_4.html)

[Tenmarks.com](http://Tenmarks.com)

[k5learning.com](http://k5learning.com)

<http://nextgen.apps.sparcc.org/math/3-5>

<http://www.insidemathematics.org/common-core-resources/mathematical-content-standards/standards-by-grade/4th-grade>

<https://learnzillion.com/resources/17036-math-lesson-plans-4th-grade>

<http://www.mathgoodies.com/standards/alignments/grade4.html>

## **Skills**

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Use base ten blocks to show that numbers are multiples of 10.

Use an array and a chart to model multiplication.

Use simpler problems to solve multi-digit multiplication problems.

Find products using various methods.

Use Guess and Check as a problem solving strategy.

Persevere in problem solving by solving multistep word problems.

Solve word problems by representing the unknown quantity with a letter.

Describe what a digit represents in a multi-digit number compared to the same digit in a different place.

Create a word web.

Use a word definition map.

Discuss partial products with a partner.

Explore profitable products.

Multiply a whole number of three digits by a one-digit whole number.

Multiply a whole number of four digits by a one-digit whole number.

Use strategies based on place value.

Use strategies based on properties of operation.

Illustrate and explain calculations.

## Standards

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CCSS.Math.Content.4.OA.A.2	Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.
CCSS.Math.Content.4.OA.A.3	Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
CCSS.Math.Content.4.NBT.A	Generalize place value understanding for multi-digit whole numbers.
CCSS.Math.Content.4.NBT.A.1	Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.
CCSS.Math.Content.4.NBT.B	Use place value understanding and properties of operations to perform multi-digit arithmetic.

CCSS.Math.Content.4.NBT.B.5	Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
CCSS.Math.Practice.MP1	Make sense of problems and persevere in solving them.
CCSS.Math.Practice.MP2	Reason abstractly and quantitatively.
CCSS.Math.Practice.MP3	Construct viable arguments and critique the reasoning of others.
CCSS.Math.Practice.MP4	Model with mathematics.
CCSS.Math.Practice.MP5	Use appropriate tools strategically.
CCSS.Math.Practice.MP6	Attend to precision.
CCSS.Math.Practice.MP7	Look for and make use of structure.
CCSS.Math.Practice.MP8	Look for and express regularity in repeated reasoning.