

MATHEMATICS

Algebra and Functions

Grade 3	Grade 4	Grade 5
<p>1. Students select appropriate symbols, operations and properties to represent, describe, simplify and solve simple number relationships.</p> <p>3.1.1 represent relationships of quantities in the form of mathematical expressions, equations, or inequalities</p> <p>3.1.2 solve problems involving numeric equations or inequalities</p> <p>3.1.3 select appropriate operational and relational symbols to make an expression true (e.g., $4 _ 3 = 12$, what operation symbol goes in the blank?)</p> <p>3.1.4 express simple unit conversions in symbolic form (e.g., #inches = #feet x 12)</p> <p>3.1.5 recognize and use the commutative and associative properties of multiplication (e.g., if $5 \times 7 = 35$, then what is 7×5?, if $5 \times 7 \times 3 = 105$, then what is $7 \times 3 \times 5$?)</p>	<p>1. Students use and interpret variables, mathematical symbols and properties to write and simplify expressions and sentences.</p> <p>4.1.1 use letters, boxes, or other symbols to stand for any number in simple expressions or equations (e.g., demonstrate understanding and use of a concept of a variable)</p> <p>4.1.2 interpret and evaluate mathematical expressions that use parentheses</p> <p>4.1.3 use parentheses to indicate which operation to perform first when writing expressions containing more than two terms and different operations</p> <p>4.1.4 use and interpret formulas (e.g., Area = length times width or $A = lw$) to answer questions about quantities and their relationships</p> <p>4.1.5 understand that an equation such as $y = 3x + 5$ is a prescription for determining a second number when a first number is given</p>	<p>1. Students use variables in simple expressions, compute the value of the expression for specific values of the variable, and plot and interpret the results.</p> <p>5.1.1 use information taken from a graph or equation to answer questions about a problem situation</p> <p>5.1.2 use a letter to represent an unknown number; write and evaluate simple algebraic expressions</p> <p>5.1.3 know and use the distributive property in equations and expressions with variables</p> <p>5.1.4 identify and graph ordered pairs in the four quadrants of the coordinate plane</p> <p>5.1.5 solve problems involving linear functions with integer values, write the equation, and graph the resulting ordered pairs of integers on a grid</p> <p>5.1.6 simplify equations with two variables</p>

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<p>2. Students represent simple functional relationships.</p> <p>3.2.1 solve simple problems involving a functional relationship between two quantities (e.g., find the total cost of multiple items given the per unit cost)</p> <p>3.2.2 extend and recognize a linear pattern by its rules (e.g., the number of legs on a given number of horses can be calculated by counting by 4s or by multiplying the number of horses by 4)</p>	<p>2. Students know how to manipulate equations.</p> <p>4.2.1 know and understand that equals added to equals are equal</p> <p>4.2.2 know and understand that equals multiplied by equals are equal</p>	