

Algebraic Thinking Middle grades students extend pattern work to include arithmetic sequences. They use linear functions and linear equations. They plot rational number pairs in the Cartesian plane. They simplify algebraic and numeric expressions. They explore the effects of change on related variables. They use and solve two-step single variable equations and inequalities.		
6 th Grade	7 th Grade	8 th Grade
Patterns, Relations and Functions		
MA-06-5.1.1 Students will extend, describe rules for patterns and find a missing term in a pattern from real-world and mathematical problems. <p style="text-align: right;">DOK 3</p>	MA-07-5.1.1 Students will extend, describe rules for patterns and find a missing term in a pattern from real-world and mathematical problems. <p style="text-align: right;">DOK 3</p>	<i>MA-08-5.1.1</i> <i>Students will use variables to describe numerical patterns based on arithmetic sequences in real-world and mathematical problems (e.g., $f(N) = 2N+3$).</i>
MA-06-5.1.2 Students will create tables for functions and will apply the tables to solve real-world problems. <p style="text-align: right;">DOK 2</p>	MA-07-5.1.2 Students will represent, analyze, and generalize first degree relationships using tables, graphs and words, and will apply the relationships to solve real-world and mathematical problems. <p style="text-align: right;">DOK 2</p>	MA-08-5.1.2 Students will represent, analyze and generalize simple first and second degree relationships using tables, graphs, words and algebraic notations, and will apply the relationships to solve real-world and mathematical problems. <p style="text-align: right;">DOK 2</p>
<i>MA-06-5.1.3</i> <i>Students will describe, define, provide examples of, and apply to real-world and mathematical problems functions using tables, graphs and verbal rules.</i>	<i>MA-07-5.1.3</i> <i>Students will explain how tables, graphs, patterns, verbal rules and equations relate to each other.</i>	
<i>MA-06-5.1.4</i> <i>Students will explain how tables, graphs and patterns relate to each other.</i>		

<p>MA-06-5.1.5 <i>Students will explain how the change in one quantity affects change in another quantity (e.g., in tables or graphs, input/output tables).</i></p>	<p>MA-07-5.1.5 Students will explain how the change in one quantity affects the change in another quantity (e.g., in tables or graphs). DOK 2</p>	<p>MA-08-5.1.5 Students will explain how the change in one variable affects the change in another variable (e.g., if rate remains constant, an increase in time results in an increase in distance). DOK 2</p>
<p>Variables, Expressions and Operations</p>		
<p>MA-06-5.2.1 Students will substitute values for variables (up to two different variables) and evaluate algebraic expressions. DOK 2</p>	<p>MA-07-5.2.1 Students will substitute values for variables (up to three different variables) and evaluate algebraic expressions. DOK 2</p>	<p>MA-08-5.2.1 Students will evaluate and simplify algebraic expressions applying the order of operations. DOK 2</p>
<p><i>MA-06-5.2.2</i> <i>Students will describe, define and provide examples of variables and expressions with a missing value based on real-world and mathematical problems.</i></p>	<p><i>MA-07-5.2.2</i> <i>Students will describe, define and provide examples of variables and expressions with a missing value based on real-world and mathematical problems.</i></p>	<p><i>MA-08-5.2.2</i> <i>Students will describe, define and provide examples of variables and expressions with a missing value based on real-world and mathematical problems.</i></p>
<p>Equations and Inequalities</p>		
<p>MA-06-5.3.1 Students will model and solve real-world and mathematical problems with simple equations and inequalities (e.g., $8x = 4$, $x+2 > 5$). DOK 2</p>	<p>MA-07-5.3.1 Students will model and solve real-world and mathematical problems with one- or two-step single variable, first-degree equations or inequalities (e.g., $2x+1 = 9$, $3x+3 < 9$). (Statements and solutions use only non-negative numbers.) DOK 2</p>	<p>MA-08-5.3.1 Students will model and solve single variable, first-degree real-world and mathematical problems (e.g., $5x+2 = x+22$, $x-4 < -60$). DOK 2</p>