MATHEMATICS CONTENT ASSESSED BY THE ALGEBRA 1 EOC ASSESSMENT
AND ITEM TYPES BY BENCHMARK

Algebra 1 End-of-Course Assessment				
Body of Knowledge Algebra				
Standard 1 Real and Complex Number Systems Expand and deepen understanding of real and complex numbers by comparing expressions and performing arithmetic computations, especially those involving square roots and exponents. Use the properties of real numbers to simplify algebraic expressions and equations, and convert between different measurement units using dimensional analysis.				
MA.912.A.1.8 Use the zero product property of real numbers in a variety of contexts to identify solutions to equations. Assessed with MA.912.A.7.2.				
Standard 2 Relations and Functions Draw and interpret graphs of relations. Understand the notation and concept of a function, find domains and ranges, and link equations to functions.				
MA.912.A.2.3 Describe the concept of a function, use function notation, determine whether a given relation is a function, and link equations to functions. Also assesses MA.912.A.2.13. **MC, FR**	**MA.912.A.2.4** Determine the domain and range of a relation. Also assesses MA.912.A.2.13. **MC, FR**	**MA.912.A.2.13** Solve real-world problems involving relations and functions. Assessed with MA.912.A.2.3 and MA.912.A.2.4.		

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MATHEMATICS CONTENT ASSESSED BY THE ALGEBRA 1 EOC ASSESSMENT AND ITEM TYPES BY BENCHMARK

Algebra 1 End-of-Course Assessment				
Body of Knowledge Algebra				
Standard 3 Linear Equations and Inequalities **Solve linear equations and inequalities.**				
MA.912.A.3.1 Solve linear equations in one variable that include simplifying algebraic expressions. Also assesses MA.912.A.3.2. **MC, FR**	**MA.912.A.3.2** Identify and apply the distributive, associative, and commutative properties of real numbers and the properties of equality. Assessed with MA.912.A.3.1. 	**MA.912.A.3.3** Solve literal equations for a specified variable. **MC**	**MA.912.A.3.4** Solve and graph simple and compound inequalities in one variable, and be able to justify each step in a solution. **MC**	**MA.912.A.3.5** Symbolically represent and solve multi-step and real-world applications that involve linear equations and inequalities. **MC, FR**
MA.912.A.3.7 Rewrite equations of a line into slope-intercept form and standard form. Assessed with MA.912.A.3.10. **MC**	**MA.912.A.3.8** Graph a line given any of the following information: a table of values, the x- and y-intercepts, two points, the slope and a point, the equation of the line in slope-intercept form, standard form, or point-slope form. Also assesses MA.912.A.3.12. **MC**	**MA.912.A.3.9** Determine the slope, x-intercept, and y-intercept of a line given its graph, its equation, or two points on the line. **MC, FR**	**MA.912.A.3.10** Write an equation of a line given any of the following information: two points on the line, its slope and one point on the line, or its graph. Also, find an equation of a new line parallel to a given line, or perpendicular to a given line, through a given point on the new line. Also assesses MA.912.A.3.7, MA.912.A.3.12, and MA.912.G.1.4. **MC, FR**	**MA.912.A.3.11** Write an equation of a line that models a data set, and use the equation or the graph to make predictions. Describe the slope of the line in terms of the data, recognizing that the slope is the rate of change. **MC, FR**

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AND ITEM TYPES BY BENCHMARK

Algebra 1 End-of-Course Assessment

Body of Knowledge   Algebra

Standard 3   Linear Equations and Inequalities
Solve linear equations and inequalities.

MA.912.A.3.12	MA.912.A.3.13	MA.912.A.3.14	MA.912.A.3.15	
Graph a linear equation or inequality in two variables with and without graphing technology. Write an equation or inequality represented by a given graph.	Use a graph to approximate the solution of a system of linear equations or inequalities in two variables with and without technology.	Solve systems of linear equations and inequalities in two and three variables using graphical, substitution, and elimination methods.	Solve real-world problems involving systems of linear equations and inequalities in two and three variables.	
Assessed with MA.912.A.3.8 and MA.912.A.3.10.	Assessed with MA.912.A.3.14.	Also assesses MA.912.A.3.13 and MA.912.A.3.15.	Assessed with MA.912.A.3.14.	
		MC, FR		

Standard 4   Polynomials
Perform operations on polynomials. Find factors of polynomials, learning special techniques for factoring quadratics.
Understand the relationships among the solutions of polynomial equations, the zeros of a polynomial function, the
***x*-intercepts of a graph, and the factors of a polynomial.**

MA.912.A.4.1	MA.912.A.4.2	MA.912.A.4.3	MA.912.A.4.4	
Simplify monomials and monomial expressions using the laws of integral exponents.	Add, subtract, and multiply polynomials.	Factor polynomial expressions.	Divide polynomials by monomials and polynomials with various techniques, including synthetic division.	
		Also assesses MA.912.A.5.1.		
MC, FR	**MC, FR**	**MC**	**MC**	

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Algebra 1 End-of-Course Assessment					
Body of Knowledge Algebra					
Standard 5 Rational Expressions and Equations Simplify rational expressions, and solve rational equations using what has been learned about factoring polynomials.					
MA.912.A.5.1 Simplify algebraic ratios. Assessed with MA.912.A.4.3.	**MA.912.A.5.4** Solve algebraic proportions. **MC, FR**				
Standard 6 Radical Expressions and Equations Simplify and perform operations on radical expressions and equations. Rationalize square root expressions, and understand and use the concepts of negative and rational exponents. Add, subtract, multiply, divide, and simplify radical expressions and expressions with rational exponents. Solve radical equations and equations with terms that have rational exponents.					
MA.912.A.6.1 Simplify radical expressions. Assessed with MA.912.A.6.2.	**MA.912.A.6.2** Add, subtract, multiply, and divide radical expressions (square roots and higher). Also assesses MA.912.A.6.1. **MC**				

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Algebra 1 End-of-Course Assessment				
Body of Knowledge Algebra				
Standard 7 Quadratic Equations **Draw graphs of quadratic functions. Solve quadratic equations and solve these equations by factoring, completing the square, and by using the quadratic formula. Use graphing calculators to find approximate solutions of quadratic equations.**				
MA.912.A.7.1 Graph quadratic equations with and without graphing technology. Also assesses MA.912.A.7.8. MC	**MA.912.A.7.2** Solve quadratic equations over the real numbers by factoring and by using the quadratic formula. Also assesses MA.912.A.1.8 and MA.912.A.7.8. MC, FR	**MA.912.A.7.8** Use quadratic equations to solve real-world problems. Assessed with MA.912.A.7.1 and MA.912.A.7.2.	**MA.912.A.7.10** Use graphing technology to find approximate solutions of quadratic equations. Not assessed.	
Standard 10 Mathematical Reasoning and Problem Solving **In a general sense, all of mathematics is problem solving. In all of mathematics, use problem-solving skills, choose how to approach a problem, explain the reasoning, and check the results.**				
MA.912.A.10.1 Use a variety of problem-solving strategies, such as drawing a diagram, making a chart, guessing-and-checking, solving a simpler problem, writing an equation, working backwards, and creating a table. Assessed throughout.	**MA.912.A.10.2** Decide whether a solution is reasonable in the context of the original situation. Assessed throughout.	**MA.912.A.10.3** Decide whether a given statement is always, sometimes, or never true (statements involving linear or quadratic expressions, equations, or inequalities, rational or radical expressions, or logarithmic or exponential functions). Not assessed.		

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Algebra 1 End-of-Course Assessment				
Body of Knowledge Discrete Mathematics				
Standard 7 Set Theory Operate with sets, and use set theory to solve problems.				
MA.912.D.7.1 Perform set operations such as union and intersection, complement, and cross product. **MC, FR**	**MA.912.D.7.2** Use Venn diagrams to explore relationships and patterns and to make arguments about relationships between sets. **MC, FR**			
Algebra 1 End-of-Course Assessment				
Body of Knowledge Geometry				
Standard 1 Points, Lines, Angles, and Planes Understand geometric concepts, applications, and their representations with coordinate systems. Find lengths and midpoints of line segments, slopes, parallel and perpendicular lines, and equations of lines. Using a compass and straightedge, patty paper, a drawing program or other techniques, construct lines and angles, explaining and justifying the processes used.				
MA.912.G.1.4 Use coordinate geometry to find slopes, parallel lines, perpendicular lines, and equations of lines. Assessed with MA.912.A.3.10.				

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