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Algebra I

Guiding Principle

A student at the proficient level in Algebra I will be able to demonstrate understanding of high school mathematics by solving problems, reasoning, communicating, representing, and making connections based on the following indicators:

Benchmark/Topics	As a result of studying Algebra I, I will be able to:
(1) Real Number System <ul style="list-style-type: none"> Sets of Numbers Properties/Identities Order of Operations 	2.1.1 Demonstrate an understanding of the real number system when I can <ul style="list-style-type: none"> <input type="checkbox"/> Classify real numbers as rational, irrational, integer, whole and/or natural <input type="checkbox"/> Apply and identify algebraic properties and identities of the real number system <input type="checkbox"/> Evaluate expressions using the order of operations
(2) Word Problems and Strategies <ul style="list-style-type: none"> Incorporate throughout 	1.1.2 Demonstrate an understanding of word problems and strategies when I can <ul style="list-style-type: none"> <input type="checkbox"/> Recognize and formulate problems from situations within and outside mathematics and apply solution strategies to those problems
(3) Solving Linear Equations <ul style="list-style-type: none"> Fractional Coefficients Decimal Coefficients 	3.3.3 Utilize algebraic methods to <ul style="list-style-type: none"> <input type="checkbox"/> Solve linear equations including those with fractional and decimal coefficients
(4) Solving and Graphing Inequalities <ul style="list-style-type: none"> Linear Compound 	3.3.4 Utilize algebraic methods to <ul style="list-style-type: none"> <input type="checkbox"/> Solve and graph linear inequalities <input type="checkbox"/> Solve and graph compound inequalities
(5) Introduction to Solving and Graphing Absolute Values <ul style="list-style-type: none"> Equations Inequalities 	3.0.5 Show understanding of absolute value when I can <ul style="list-style-type: none"> <input type="checkbox"/> Solve introductory absolute value equations <input type="checkbox"/> Solve introductory absolute value inequalities <input type="checkbox"/> Graph introductory absolute value equations <input type="checkbox"/> Graph introductory absolute value inequalities
(6) Exponents and Polynomials <ul style="list-style-type: none"> Simplify Basic Operations Rules of Exponents 	3.2.6 Show understanding of exponents and polynomials when I can <ul style="list-style-type: none"> <input type="checkbox"/> Simplify algebraic expressions <input type="checkbox"/> Perform basic operations on polynomials <input type="checkbox"/> Apply the rules of exponents
(7) Factoring <ul style="list-style-type: none"> GCF Trinomials Difference of Squares Grouping 	3.2.7 Factor polynomials completely using the following methods: <ul style="list-style-type: none"> <input type="checkbox"/> Greatest Common Factor <input type="checkbox"/> Trinomials factored into binomial factors <input type="checkbox"/> Difference of Squares <input type="checkbox"/> Grouping
(8) Introduction to Rational Expressions & Equations <ul style="list-style-type: none"> Basic Operations Simplify Solve 	3.0.8 Show understanding of rational expressions when I can <ul style="list-style-type: none"> <input type="checkbox"/> Perform basic operations (add, subtract, multiply, divide) on rational expressions <input type="checkbox"/> Simplify rational expressions <input type="checkbox"/> Solve basic rational equations
(9) Graphs and Linear Equations	7.1.9 Demonstrate knowledge of linear equations and their graphs by

<ul style="list-style-type: none"> • Slope • Plotting Points • x- and y-intercepts • Parallel and Perpendicular • Writing Equations • Standard/General Form • Slope-intercept Form • Point-slope Form • Line of Best Fit from Data 	<ul style="list-style-type: none"> <input type="checkbox"/> Determining the slope given two points or a graph <input type="checkbox"/> Recognizing parallel and perpendicular relationships <input type="checkbox"/> Using the following methods to graph <ul style="list-style-type: none"> <input type="checkbox"/> plotting points <input type="checkbox"/> x-intercept and y-intercept <input type="checkbox"/> slope and y-intercept <input type="checkbox"/> writing equations in the following forms <ul style="list-style-type: none"> <input type="checkbox"/> Standard/general <input type="checkbox"/> Slope-intercept <input type="checkbox"/> Point-slope <input type="checkbox"/> modeling data using the line of best fit
<p>(10) Solving Systems (2 Equations 2 Unknowns)</p> <ul style="list-style-type: none"> • Graphing • Substitution • Elimination (Add/Subtract or Linear Combinations) 	<p>3.4.10 Solve systems of equations containing two variables using the following methods:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Graphing <input type="checkbox"/> Substitution <input type="checkbox"/> Elimination (Add/Subtract or Linear Combinations)
<p>(11) Introduction to Radicals</p> <ul style="list-style-type: none"> • Basic Operation • Simplify • Rationalize (monomial denominators) 	<p>3.2.11 Show understanding of radicals when I can</p> <ul style="list-style-type: none"> <input type="checkbox"/> Perform basic operations (add, subtract, multiply, divide) with radicals <input type="checkbox"/> Simplify radicals <input type="checkbox"/> Rationalize monomial denominators
<p>(12) Quadratic Equations</p> <ul style="list-style-type: none"> • Solving using Factoring • Solve using Completing the square • Solve using Quadratic Formula 	<p>3.3.12 Utilize the following methods to solve quadratic equations:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Factoring <input type="checkbox"/> Completing the square <input type="checkbox"/> Quadratic formula
<p>(13) Introduction to Probability</p> <ul style="list-style-type: none"> • Experimental • Theoretical • Tree Diagrams • Expected Values 	<p>6.4.13 Show understanding of basic probability when I can</p> <ul style="list-style-type: none"> <input type="checkbox"/> Perform simulations to find experimental probabilities <input type="checkbox"/> Calculate theoretical probabilities <input type="checkbox"/> Draw tree diagrams <input type="checkbox"/> Calculate expected values

1/30/04

*Benchmark Key – State Content Standard . State Benchmark . District Benchmark