



Course Name:

Algebra 1 CP/Honors

Curriculum Proposal Date:

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Curriculum Developed by:

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ALGEBRA 1 - SOLVING ONE-VARIABLE EQUATIONS

STAGE 1 | DESIRED RESULTS

Context and relevance for student learning

Standards	Transfer	
<p>CC.2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships.</p>	<p><i>Students will be able to independently use their learning to keep considering...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Model and solve real world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations (CC.2.2.7.B.3) <input type="checkbox"/> Use reasoning to solve equations and justify the solution method (CC.2.2.HS.D.9) <input type="checkbox"/> Write expressions in equivalent forms to solve problems (CC.2.2.HS.D.2) 	
<p>CC.2.2.HS.D.8 Apply inverse operations to solve equations or formulas for a given variable.</p> <p>CC.2.2.HS.D.9 Use reasoning to solve equations and justify the solution method.</p>	Meaning	
<p>CC.2.2.HS.D.10 Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.</p>	<p>UNDERSTANDINGS <i>Students will understand that...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> The rules and relationships of arithmetic and algebra are useful for writing equivalent forms of expressions and solving equations. <input type="checkbox"/> Algebraic properties and processes are used to solve equations. 	<p>ESSENTIAL QUESTIONS <i>Students will keep considering...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> How can equations be used to represent relationships and solve problems?
	Acquisition	
	<p><i>Students will know...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Meaning of a variable <input type="checkbox"/> Inverse operations <input type="checkbox"/> Algebraic Properties <input type="checkbox"/> Absolute value <input type="checkbox"/> One solution, no solution, Infinitely many solutions 	<p><i>Students will be skilled at...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Write and solve one-variable equations. <input type="checkbox"/> Interpret solutions in the context of the problem.

ALGEBRA 1 - LINEAR EQUATIONS

STAGE 1 | DESIRED RESULTS

Context and relevance for student learning

Standards	Transfer					
<p>CC.2.2.8.B.2 Understand the connections between proportional relationships, lines, and linear equations.</p> <p>CC.2.2.8.B.3 Analyze and solve linear equations and pairs of simultaneous linear equations.</p>	<p><i>Students will be able to independently use their learning to keep considering...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Model and solve real world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations (CC.2.2.7.B.3) <input type="checkbox"/> Use reasoning to solve equations and justify the solution method (CC.2.2.HS.D.9) <input type="checkbox"/> Write expressions in equivalent forms to solve problems (CC.2.2.HS.D.2) <input type="checkbox"/> Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically. (CC.2.2.HS.D.10) 					
<p>CC.2.2.HS.C.3 Write functions or sequences that model relationships between two quantities.</p>	<table border="1"> <thead> <tr> <th colspan="2" data-bbox="392 537 1136 578">Meaning</th> </tr> </thead> <tbody> <tr> <td data-bbox="392 578 1136 870"> <p>UNDERSTANDINGS</p> <p><i>Students will understand that...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms. <input type="checkbox"/> Linear equations are mathematical relationships that can be represented and analyzed using words, tables, graphs, and equations. </td> <td data-bbox="1136 578 1948 870"> <p>ESSENTIAL QUESTIONS</p> <p><i>Students will keep considering...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> How do we use linear models to answer questions in real-world contexts? <input type="checkbox"/> How do we use algebraic and/or graphical processes to solve problems? <input type="checkbox"/> How do you write, solve, graph, and interpret linear equations to model relationships between quantities? </td> </tr> </tbody> </table>		Meaning		<p>UNDERSTANDINGS</p> <p><i>Students will understand that...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Numbers, measures, expressions, equations, and inequalities can represent mathematical situations and structures in many equivalent forms. <input type="checkbox"/> Linear equations are mathematical relationships that can be represented and analyzed using words, tables, graphs, and equations. 	<p>ESSENTIAL QUESTIONS</p> <p><i>Students will keep considering...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> How do we use linear models to answer questions in real-world contexts? <input type="checkbox"/> How do we use algebraic and/or graphical processes to solve problems? <input type="checkbox"/> How do you write, solve, graph, and interpret linear equations to model relationships between quantities?
Meaning						
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<p>CC.2.2.HS.C.5 Construct and compare linear, quadratic, and exponential models to solve problems.</p> <p>CC.2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships.</p> <p>CC.2.2.HS.D.8 Apply inverse operations to</p>	<table border="1"> <thead> <tr> <th colspan="2" data-bbox="392 870 1136 911">Acquisition</th> </tr> </thead> <tbody> <tr> <td data-bbox="392 911 1136 1521"> <p><i>Students will know...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Linear equations as graphs, equations, tables, set of coordinates <input type="checkbox"/> Rate of change <input type="checkbox"/> Positive Slope, Negative Slope, Zero Slope, Undefined Slope <input type="checkbox"/> Standard Form, Slope-Intercept Form, and Point-Slope Form of Linear Equations </td> <td data-bbox="1136 911 1948 1521"> <p><i>Students will be skilled at...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> A1.1.2.1.1 Write, solve, and/or apply a linear equation (including problem situations). <input type="checkbox"/> A1.1.2.1.2 Use and/or identify an algebraic property to justify any step in an equation-solving process. Note: Linear equations only. <input type="checkbox"/> A1.1.2.1.3 Interpret solutions to problems in the context of the problem situation. Note: Linear equations only. <input type="checkbox"/> A1.2.1.1.1 Analyze a set of data for the existence of a pattern and represent the pattern algebraically and/or graphically <input type="checkbox"/> A1.2.1.2.1 Create, interpret, and/or use the equation, graph, or table of a linear function. <input type="checkbox"/> A1.2.1.2.2 Translate from one representation of a linear function to another (i.e., graph, table, and equation). <input type="checkbox"/> A1.2.2.1.3 Write or identify a linear equation when given <ul style="list-style-type: none"> • the graph of the line, • two points on the line, or • the </td> </tr> </tbody> </table>		Acquisition		<p><i>Students will know...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Linear equations as graphs, equations, tables, set of coordinates <input type="checkbox"/> Rate of change <input type="checkbox"/> Positive Slope, Negative Slope, Zero Slope, Undefined Slope <input type="checkbox"/> Standard Form, Slope-Intercept Form, and Point-Slope Form of Linear Equations 	<p><i>Students will be skilled at...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> A1.1.2.1.1 Write, solve, and/or apply a linear equation (including problem situations). <input type="checkbox"/> A1.1.2.1.2 Use and/or identify an algebraic property to justify any step in an equation-solving process. Note: Linear equations only. <input type="checkbox"/> A1.1.2.1.3 Interpret solutions to problems in the context of the problem situation. Note: Linear equations only. <input type="checkbox"/> A1.2.1.1.1 Analyze a set of data for the existence of a pattern and represent the pattern algebraically and/or graphically <input type="checkbox"/> A1.2.1.2.1 Create, interpret, and/or use the equation, graph, or table of a linear function. <input type="checkbox"/> A1.2.1.2.2 Translate from one representation of a linear function to another (i.e., graph, table, and equation). <input type="checkbox"/> A1.2.2.1.3 Write or identify a linear equation when given <ul style="list-style-type: none"> • the graph of the line, • two points on the line, or • the
Acquisition						
<p><i>Students will know...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Linear equations as graphs, equations, tables, set of coordinates <input type="checkbox"/> Rate of change <input type="checkbox"/> Positive Slope, Negative Slope, Zero Slope, Undefined Slope <input type="checkbox"/> Standard Form, Slope-Intercept Form, and Point-Slope Form of Linear Equations 	<p><i>Students will be skilled at...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> A1.1.2.1.1 Write, solve, and/or apply a linear equation (including problem situations). <input type="checkbox"/> A1.1.2.1.2 Use and/or identify an algebraic property to justify any step in an equation-solving process. Note: Linear equations only. <input type="checkbox"/> A1.1.2.1.3 Interpret solutions to problems in the context of the problem situation. Note: Linear equations only. <input type="checkbox"/> A1.2.1.1.1 Analyze a set of data for the existence of a pattern and represent the pattern algebraically and/or graphically <input type="checkbox"/> A1.2.1.2.1 Create, interpret, and/or use the equation, graph, or table of a linear function. <input type="checkbox"/> A1.2.1.2.2 Translate from one representation of a linear function to another (i.e., graph, table, and equation). <input type="checkbox"/> A1.2.2.1.3 Write or identify a linear equation when given <ul style="list-style-type: none"> • the graph of the line, • two points on the line, or • the 					

<p>solve equations or formulas for a given variable.</p> <p>CC.2.2.HS.D.10 Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.</p>		<p>slope and a point on the line. Note: Linear equations may be in point-slope, standard, and/or slope-intercept form.</p> <ul style="list-style-type: none">❑ A1.2.2.1.4 Determine the slope and/or y-intercept represented by a linear equation or graph.❑ A1.2.2.1.1 Identify, describe, and/or use constant rates of change.❑ A1.2.2.1.2 Apply the concept of linear rate of change (slope) to solve problems.
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STAGE 1 | DESIRED RESULTS

Context and relevance for student learning

Standards	Transfer	
<p>CC.2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships.</p> <p>CC.2.2.8.B.3 Analyze and solve linear equations and pairs of simultaneous linear equations.</p> <p>CC.2.2.HS.D.10 Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.</p>	<p><i>Students will be able to independently use their learning to keep considering...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Model and solve real world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations (CC.2.2.7.B.3) <input type="checkbox"/> Use reasoning to solve equations and justify the solution method (CC.2.2.HS.D.9) <input type="checkbox"/> Write expressions in equivalent forms to solve problems (CC.2.2.HS.D.2) <input type="checkbox"/> Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically. (CC.2.2.HS.D.10) 	
	Meaning	
	<p>UNDERSTANDINGS</p> <p><i>Students will understand that...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Systems of linear equations can be used to model problems. 	<p>ESSENTIAL QUESTIONS</p> <p><i>Students will keep considering...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> How can systems of equations be used to represent situations and solve problems? <input type="checkbox"/> How do we use algebraic and/or graphical processes to solve real-life linear systems of equations?
	Acquisition	
<p><i>Students will know...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Graphing, substitution, elimination methods for solving systems of equations. <input type="checkbox"/> Advantages and disadvantages of methods to solving systems of equations <input type="checkbox"/> One solution, no solution, infinitely many solutions 	<p><i>Students will be skilled at...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> A1.1.2.2.1 Write and/or solve a system of linear equations (including problem situations) using graphing, substitution, and/or elimination. Note: Limit systems to two linear equations. <input type="checkbox"/> A1.1.2.2.2 Interpret solutions to problems in the context of the problem situation. Note: Limit systems to two linear equations. 	

STAGE 1 | DESIRED RESULTS

Context and relevance for student learning

Standards	Transfer	
<p>CC.2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships.</p> <p>CC.2.2.HS.D.10 Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.</p>	<p><i>Students will be able to independently use their learning to keep considering...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Model and solve real world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations (CC.2.2.7.B.3) <input type="checkbox"/> Use reasoning to solve equations and justify the solution method (CC.2.2.HS.D.9) <input type="checkbox"/> Write expressions in equivalent forms to solve problems (CC.2.2.HS.D.2) <input type="checkbox"/> Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. (CC.2.2.HS.F.5) 	
	Meaning	
	<p>UNDERSTANDINGS</p> <p><i>Students will understand that...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> The rules and relationships of arithmetic and algebra are useful for writing equivalent forms of and solving inequalities. <input type="checkbox"/> Algebraic properties and processes are used to solve inequalities. <input type="checkbox"/> Inequalities have an infinite number of solutions and can be represented on a number line. 	<p>ESSENTIAL QUESTIONS</p> <p><i>Students will keep considering...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> How can inequalities be used to represent relationships and solve problems?
	Acquisition	
<p><i>Students will know...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Meaning of a variable <input type="checkbox"/> Inverse operations <input type="checkbox"/> Algebraic Properties <input type="checkbox"/> Compound Inequalities <input type="checkbox"/> Absolute value inequalities <input type="checkbox"/> Graphing solutions <input type="checkbox"/> Dividing or multiplying by a negative and its effect on the inequality 	<p><i>Students will be skilled at...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> A1.1.3.1.1 Write or solve compound inequalities and/or graph their solution sets on a number line (may include absolute value inequalities). <input type="checkbox"/> A1.1.3.1.2 Identify or graph the solution set to a linear inequality on a number line. <input type="checkbox"/> A1.1.3.1.3 Interpret solutions to problems in the context of the problem situation. Note: Linear inequalities only. 	

STAGE 1 | DESIRED RESULTS

Context and relevance for student learning

Standards	Transfer	
<p>CC.2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships.</p> <p>CC.2.2.HS.D.10 Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.</p>	<p><i>Students will be able to independently use their learning to keep considering...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Model and solve real world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations (CC.2.2.7.B.3) <input type="checkbox"/> Use reasoning to solve equations and justify the solution method (CC.2.2.HS.D.9) <input type="checkbox"/> Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. (CC.2.2.HS.F.5) 	
	Meaning	
	<p>UNDERSTANDINGS <i>Students will understand that...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> The rules and relationships of arithmetic and algebra are useful for writing equivalent forms of and solving linear inequalities. <input type="checkbox"/> Algebraic properties and processes are used to solve linear inequalities. <input type="checkbox"/> Linear inequalities have an infinite number of solutions and can be represented on a coordinate plane using symbols and shading. 	<p>ESSENTIAL QUESTIONS <i>Students will keep considering...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> How can linear inequalities be used to represent relationships and solve problems?
	Acquisition	
<p><i>Students will know...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Graphing solutions <input type="checkbox"/> Boundaries <input type="checkbox"/> Solid lines, dotted lines <input type="checkbox"/> Direction of shading <input type="checkbox"/> Solutions and not solutions 	<p><i>Students will be skilled at...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> A1.1.3.1.2 Identify or graph the solution set to a linear inequality on a number line. <input type="checkbox"/> A1.1.3.1.3 Interpret solutions to problems in the context of the problem situation. Note: Linear inequalities only. <input type="checkbox"/> Translate from one representation of a linear inequality to another 	

STAGE 1 | DESIRED RESULTS

Context and relevance for student learning

Standards	Transfer	
<p>CC.2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships.</p> <p>CC.2.2.HS.D.10 Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.</p>	<p><i>Students will be able to independently use their learning to keep considering...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Model and solve real world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations (CC.2.2.7.B.3) <input type="checkbox"/> Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. (CC.2.2.HS.F.5) 	
	Meaning	
	<p>UNDERSTANDINGS <i>Students will understand that...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Systems of linear inequalities can be used to model problems. 	<p>ESSENTIAL QUESTIONS <i>Students will keep considering...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> How can systems of inequalities be used to represent situations and solve problems? <input type="checkbox"/> How do we use algebraic and/or graphical processes to solve real-life systems of linear inequalities situations?
Acquisition		
<p><i>Students will know...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Graphing solutions of systems <input type="checkbox"/> Multiple boundaries <input type="checkbox"/> Overlapping and no overlap and what that means for the solution set 	<p><i>Students will be skilled at...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> A1.1.3.2.1 Write and/or solve a system of linear inequalities using graphing. Note: Limit systems to two linear inequalities. <input type="checkbox"/> A1.1.3.2.2 Interpret solutions to problems in the context of the problem situation. Note: Limit systems to two linear inequalities. 	

STAGE 1 | DESIRED RESULTS

Context and relevance for student learning

Standards	Transfer		
<p>CC.2.2.8.C.1 Define, evaluate, and compare functions.</p> <p>CC.2.2.8.C.2 Use concepts of functions to model relationships between quantities.</p> <p>CC.2.2.HS.C.1 Use the concept and notation of functions to interpret and apply them in terms of their context.</p> <p>CC.2.2.HS.C.2 Graph and analyze functions and use their properties to make connections between the different representations.</p> <p>CC.2.2.HS.C.3 Write functions or sequences that model relationships between two quantities.</p> <p>CC.2.2.HS.C.4 Interpret the effects transformations have on functions and find the inverses of functions.</p> <p>CC.2.2.HS.C.6 Interpret functions in terms of the situations they model.</p> <p>CC.2.4.HS.B.2 Summarize, represent, and interpret data on two categorical and quantitative variables.</p>	<p><i>Students will be able to independently use their learning to keep considering...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> CC.2.2.7.B.3 Model and solve real-world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations. <input type="checkbox"/> CC.2.1.HS.F.3 Apply quantitative reasoning to choose and interpret units and scales in formulas, graphs, and data displays. 		
	<p>UNDERSTANDINGS</p> <p><i>Students will understand that...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> The notation of a function and what it represents <input type="checkbox"/> Functions can be represented in multiple ways (table, graphing, mapping diagram, list of ordered pairs) 	<p>ESSENTIAL QUESTIONS</p> <p><i>Students will keep considering...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> How can functions describe and represent real-world situations? <input type="checkbox"/> How can functions model, predict and solve problems? 	
	<p><i>Students will know...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> How to identify the domain and range in multiple representations (table, graphing, mapping diagram, list of ordered pairs) <input type="checkbox"/> Evaluate in function notation <input type="checkbox"/> Relation vs. function <input type="checkbox"/> Function vs. not a function <input type="checkbox"/> Linear vs. nonlinear <input type="checkbox"/> Discrete vs. continuous <input type="checkbox"/> Function notation <input type="checkbox"/> Increasing, decreasing, and constant 	<p><i>Students will be skilled at...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> A.1.2.1.1.1 Analyze a set of data for the existence of a pattern and represent the pattern algebraically and/or graphically. <input type="checkbox"/> A.1.2.1.1.2 Determine whether a relation is a function, given a set of points or a graph. <input type="checkbox"/> A.1.2.1.1.3 Identify the domain or range of a relation (may be presented as ordered pairs, a graph, or a table). <input type="checkbox"/> Representing a relation and/or function in various forms <input type="checkbox"/> Write and/or represent a function based on a real-life situation <input type="checkbox"/> Inputting values and getting outputs and vice versa 	

ALGEBRA 1 - REAL NUMBER SYSTEM

STAGE 1 | DESIRED RESULTS

Context and relevance for student learning

Standards	Transfer	
<p>CC.2.1.8.E1 Distinguish between rational and irrational numbers using their properties.</p> <p>CC.2.1.8.E4 Estimate irrational numbers by comparing them to rational numbers.</p> <p>CC.2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real-world or mathematical problems.</p>	<p><i>Students will be able to independently use their learning to keep considering...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Write expressions in equivalent forms to solve problems (CC.2.2.HS.D.2) <input type="checkbox"/> Use estimation to solve problems (A1.1.1.4.1) 	
	Meaning	
	<p>UNDERSTANDINGS</p> <p><i>Students will understand that...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Numbers can be represented in multiple forms (e.g. integers, fractions, decimals, percents, square roots, and exponents) <input type="checkbox"/> The real number system is the basis of on which arithmetic and algebra are built 	<p>ESSENTIAL QUESTIONS</p> <p><i>Students will keep considering...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> What is the real number system and how does it apply to algebra?
	Acquisition	
<p><i>Students will know...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Real Number vs Complex Number systems <input type="checkbox"/> Rational vs Irrational numbers <input type="checkbox"/> Perfect squares <input type="checkbox"/> Order numbers from least to greatest <input type="checkbox"/> Compare real numbers 	<p><i>Students will be skilled at...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> A1.1.1.1.1 Compare and/or order any real numbers. Note: Rational and irrational may be mixed. <input type="checkbox"/> A1.1.1.1.2 Simplify square roots (e.g., $\sqrt{24} = 2\sqrt{6}$). 	

ALGEBRA 1 - EXPONENTS

STAGE 1 | DESIRED RESULTS

Context and relevance for student learning

Standards	Transfer	
<p>CC.2.1.HS.F1 Apply and extend the properties of exponents to solve problems with rational exponents.</p> <p>CC.2.2.8.B.1 Apply concepts of radicals and integer exponents to generate equivalent expressions.</p>	<p><i>Students will be able to independently use their learning to keep considering...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Write expressions in equivalent forms to solve problems (CC.2.2.HS.D.2) 	
	Meaning	
	<p>UNDERSTANDINGS</p> <p><i>Students will understand that...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Exponents can be used to rewrite numbers and expressions 	<p>ESSENTIAL QUESTIONS</p> <p><i>Students will keep considering...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> How can mathematical processes result in a simplified expression?
	Acquisition	
<p><i>Students will know...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Exponent Properties <input type="checkbox"/> Negative exponents <input type="checkbox"/> Zero power <input type="checkbox"/> How to identify a base and an exponent <input type="checkbox"/> Least common multiple <input type="checkbox"/> Rational exponents 	<p><i>Students will be skilled at...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> A1.1.1.2.1 Find the Greatest Common Factor (GCF) and/or the Least Common Multiple (LCM) for sets of monomials. <input type="checkbox"/> A1.1.1.3.1 Simplify/evaluate expressions involving properties/laws of exponents, roots, and/or absolute values to solve problems. Note: Exponents should be integers from -10 to 10. <input type="checkbox"/> Using rational exponents to convert and simplify expressions 	

ALGEBRA 1 - POLYNOMIALS AND FACTORING

STAGE 1 | DESIRED RESULTS

Context and relevance for student learning

Standards	Transfer	
<p>CC.2.1.6.E.3 Develop and/or apply number theory concepts to find common factors and multiples.</p> <p>CC.2.2.HS.D.1 Interpret the structure of expressions to represent a quantity in terms of its context.</p> <p>CC.2.2.HS.D.2 Write expressions in equivalent forms to solve problems.</p> <p>CC.2.2.HS.D.3 Extend the knowledge of arithmetic operations and apply to polynomials.</p> <p>CC.2.2.HS.D.5 Use polynomial identities to solve problems</p>	<p><i>Students will be able to independently use their learning to keep considering...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Write expressions in equivalent forms to solve problems (CC.2.2.HS.D.2) 	
	Meaning	
	<p>UNDERSTANDINGS</p> <p><i>Students will understand that...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Factors allow options in solving polynomials. <input type="checkbox"/> Properties of real numbers apply to polynomials. 	<p>ESSENTIAL QUESTIONS</p> <p><i>Students will keep considering...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> How can polynomials be simplified and applied to solve problems? <input type="checkbox"/> How do I factor a non-linear expression?
	Acquisition	
<p><i>Students will know...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> How to completely factor expressions (GCF, difference of perfect squares, trinomials where $a=1$ and/or combination of the factoring types) <input type="checkbox"/> Simplify polynomial expressions by adding, subtracting and multiplying <input type="checkbox"/> Algebraic factors 	<p><i>Students will be skilled at...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> A1.1.1.2.1 Find the Greatest Common Factor (GCF) and/or the Least Common Multiple (LCM) for sets of monomials. <input type="checkbox"/> A1.1.1.5.1 Add, subtract, and/or multiply polynomial expressions (express answers in simplest form). Note: Nothing larger than a binomial multiplied by a trinomial. <input type="checkbox"/> A1.1.1.5.2 Factor algebraic expressions, including difference of squares and trinomials. Note: Trinomials are limited to the form $ax^2 + bx + c$ where a is equal to 1 after factoring out all monomial factors <input type="checkbox"/> A1.1.1.5.3 Simplify/reduce a rational algebraic expression. 	

ALGEBRA 1 - STATISTICS

STAGE 1 | DESIRED RESULTS

Context and relevance for student learning

Standards	Transfer	
<p>CC.2.4.HS.B.1 Summarize, represent, and interpret data on a single count or measurement variable.</p> <p>CC.2.4.HS.B.2 Summarize, represent, and interpret data on two categorical and quantitative variables.</p> <p>CC.2.4.HS.B.3 Analyze linear models to make interpretations based on the data.</p> <p>CC.2.4.HS.B.4 Recognize and evaluate random processes underlying statistical experiments.</p>	<p><i>Students will be able to independently use their learning to keep considering...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Use estimation to solve problems (A1.1.1.4.1) <input type="checkbox"/> Model and solve real-world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations (CC.2.2.7.B.3) <input type="checkbox"/> Apply quantitative reasoning to choose and interpret units and scales in formulas, graphs, and data displays (CC.2.1.HS.F.3) <input type="checkbox"/> Use units as a way to understand problems and to guide the solution of multi-step problems (CC.2.1.HS.F.4) <input type="checkbox"/> Choose a level of accuracy appropriate to limitations on measurement when reporting quantities (CC.2.1.HS.F.5) 	
	Meaning	
	<p>UNDERSTANDINGS</p> <p><i>Students will understand that...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> There are different methods to represent a set of one variable data. <input type="checkbox"/> Scatterplots can represent a set of two variable data. <input type="checkbox"/> Measures of center and spread can be used to understand a set of one variable data. <input type="checkbox"/> Line of Best Fit can be used to interpolate and extrapolate data points 	<p>ESSENTIAL QUESTIONS</p> <p><i>Students will keep considering...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> How can you make and interpret different representations of data? <input type="checkbox"/> How do we make predictions and informed decisions based on given numerical information?
Acquisition		
<p><i>Students will know...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Mean, Median, Mode, Range, Quartile and Interquartile range <input type="checkbox"/> Measures of Central Tendencies <input type="checkbox"/> Appropriate location of a Line of Best Fit <input type="checkbox"/> Correlation <input type="checkbox"/> Circle, Line, Bar Graph, Scatterplots, Box-and-Whisker Plots, Stem-and-Leaf Plots, and other representations 	<p><i>Students will be skilled at...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> A1.2.2.2.1 Draw, identify, find, and/or write an equation for a line of best fit for a scatter plot. <input type="checkbox"/> A1.2.3.2.1 Estimate or calculate to make predictions based on a circle, line, bar graph, measure of central tendency, or other representation. <input type="checkbox"/> A1.2.3.2.2 Analyze data, make predictions, and/or answer questions based on displayed data (box-and-whisker plots, stem-and-leaf plots, scatter plots, measures of central tendency, or other representations). <input type="checkbox"/> A1.2.3.1.1 Calculate and/or interpret the range, quartiles, and interquartile range of data. <input type="checkbox"/> A1.2.3.2.3 Make predictions using the equations or graphs of best-fit lines of scatter plots. <input type="checkbox"/> Finding a missing value given a mean 	

ALGEBRA 1 - PROBABILITY

STAGE 1 | DESIRED RESULTS

Context and relevance for student learning

Standards	Transfer					
<p>CC.2.4.7.B.3 Investigate chance processes and develop, use, and evaluate probability models.</p>	<p><i>Students will be able to independently use their learning to keep considering...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> A1.1.1.4.1 Use estimation to solve problems. <input type="checkbox"/> CC.2.2.7.B.3 Model and solve real-world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations. 					
<p>CC.2.4.HS.B.4 Recognize and evaluate random processes underlying statistical experiments.</p>	<table border="1"> <thead> <tr> <th colspan="2" data-bbox="392 527 1136 568">Meaning</th></tr> </thead> <tbody> <tr> <td data-bbox="392 568 1136 805"> <p>UNDERSTANDINGS <i>Students will understand that...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Probability models are useful tools for making decisions and predictions. <input type="checkbox"/> Experimental probability is different from theoretical probability. </td><td data-bbox="1136 568 1948 805"> <p>ESSENTIAL QUESTIONS <i>Students will keep considering...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> How can we base decisions on chance? <input type="checkbox"/> How can probability be used to simulate events and to predict future happenings? </td></tr> </tbody> </table>		Meaning		<p>UNDERSTANDINGS <i>Students will understand that...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Probability models are useful tools for making decisions and predictions. <input type="checkbox"/> Experimental probability is different from theoretical probability. 	<p>ESSENTIAL QUESTIONS <i>Students will keep considering...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> How can we base decisions on chance? <input type="checkbox"/> How can probability be used to simulate events and to predict future happenings?
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<p>CC.2.4.HS.B.7 Apply the rules of probability to compute probabilities of compound events in a uniform probability model.</p>	<table border="1"> <thead> <tr> <th colspan="2" data-bbox="392 846 1136 886">Acquisition</th></tr> </thead> <tbody> <tr> <td data-bbox="392 886 1136 1211"> <p><i>Students will know...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Fraction, decimal and percent conversions <input type="checkbox"/> Compound events <input type="checkbox"/> Probability models <input type="checkbox"/> Rules of probability </td><td data-bbox="1136 886 1948 1211"> <p><i>Students will be skilled at...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> A.1.2.3.3.1 Find probabilities for compound events (e.g., find probability of red and blue, find probability of red or blue) and represent as a fraction, decimal, or percent. </td></tr> </tbody> </table>		Acquisition		<p><i>Students will know...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Fraction, decimal and percent conversions <input type="checkbox"/> Compound events <input type="checkbox"/> Probability models <input type="checkbox"/> Rules of probability 	<p><i>Students will be skilled at...</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> A.1.2.3.3.1 Find probabilities for compound events (e.g., find probability of red and blue, find probability of red or blue) and represent as a fraction, decimal, or percent.
Acquisition						
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