

Core Resources Available for Teachers for Instruction:

Algebra I, Common Core, Pearson

Marking Period	Unit Name	Objectives	Standards	Vocabulary	Assessments	Timeline
1	Foundations for Algebra	The students will learn how to use the properties of rational and irrational numbers, to reason quantitatively and use units to solve problems, and to interpret the structure of expressions.	<p>CC.2.1.HS.F.1 <i>Apply and extend the properties of exponents to solve problems with rational exponents.</i></p> <p>CC.2.1.HS.F.2 <i>Apply properties of rational and irrational numbers to solve real-world or mathematic</i></p>	quantity, variable, algebraic expression, numerical expression, power, exponent, base, simplify, evaluate, square root, radical, radicand, perfect square, set, element of a set, subset, rational numbers, whole numbers, integers, irrational numbers, real numbers, inequality, equivalent expressions, deductive	Quizzes, chapter test	14 days

			<p>al problems. CC.2.1.HS.F.3 Apply quantitative reasoning to choose and interpret units and scales in formulas, graphs, and data displays. CC.2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems. CC.2.2.HS.D.2 Write expressions in equivalent forms to solve problems.</p>	<p>reasoning, counterexample</p>		
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1	Solving Equations	Students will learn how to solve one-step, two-step, and multi-step equations, equations with variables on both sides of the equation, as well as literal equations, formulas, and proportions.	<p>CC.2.2.HS.C.5 <i>Construct and compare linear, quadratic, and exponential models to solve problems.</i></p> <p>CC.2.2.HS.D.9 <i>Use reasoning to solve equations and justify the solution method.</i></p>	Equivalent equations, Addition Property of Equality, Subtraction Property of Equality, Isolate, Inverse Operations, Multiplication Property of Equality, Division Property of Equality, Identity, Literal Equation, Formula, Proportion, cross products, Cross Products Property	Quizzes, chapter test	20 days
1	Solving Inequalities	Students will learn about graphs of inequalities. They will also learn how to use addition, subtraction, multiplication, and division to solve inequalities, including compound inequalities and inequalities involving absolute value.	<p>CC.2.2.HS.D.7 <i>Create and graph equations or inequalities to describe numbers or relationships.</i></p> <p>CC.2.2.HS.D.9 <i>Use reasoning to solve</i></p>	Solution of an inequality, equivalent inequalities, compound inequalities, absolute value equation, absolute value inequality	Quizzes, chapter test	12 days

			<p><i>equations and justify the solution method.</i></p> <p>CC.2.2.HS.D.10 <i>Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.</i></p>			
2	Introduction to Functions	Students will learn how to use graphs to relate 2 variables, how to graph a function rule, and how to write function rules.	<p>CC.2.2.HS.C.1 <i>Use the concept and notation of functions to interpret and apply them in terms of</i></p>	Dependent variable, independent variable, input, output, function, linear function, nonlinear function, continuous graph, discrete graph, relation, domain, range, vertical line test, function	Quizzes, chapter test	15 days

			<p><i>their context.</i></p> <p>CC.2.2.HS.C.2 <i>Graph and analyze functions and use their properties to make connections between the different representations.</i></p> <p>CC.2.2.HS.C.3 <i>Write functions or sequences that model relationships between two quantities.</i></p>	notation		
2	Linear Functions	Students will learn about rate of change and slope and how to graph functions using slope-intercept form, point-slope form, and standard form. They will also learn	<p>CC.2.2.HS.C.2 <i>Graph and analyze functions and use their</i></p>	Rate of change, slope, slope-intercept form of a line, point-slope form of a line, x-intercept,	Quizzes, chapter test	25 days

		<p>about parallel lines, perpendicular lines, scatter plots and trend lines</p>	<p><i>properties to make connections between the different representations.</i></p> <p>CC.2.2.HS.D.2 Write expressions in equivalent forms 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.2.4.HS.B.2 Summarize, represent, and interpret data on two categorical</p>	<p>standard form of a linear equation, parallel lines, perpendicular lines, opposite reciprocals, scatter plot, positive correlation, negative correlation, no correlation, trend line, interpolation, extrapolation, line of best fit, correlation coefficient, causation</p>		
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			<p><i>l and quantitative variables.</i></p> <p>CC.2.4.HS.B.3 <i>Analyze linear models to make interpretations based on the data.</i></p>			
3	Systems of Equations and Inequalities	<p>Students will learn how to solve systems of equations by graphing, substitution, and elimination (linear combination) and will also learn how to apply applications of linear systems. Students will also learn how to solve and graph linear inequalities and systems of linear inequalities.</p>	<p>CC.2.2.HS.C.2 <i>Graph and analyze functions and use their properties to make connections between the different representations.</i></p> <p>CC.2.2.HS.C.6 <i>Interpret functions in terms</i></p>	<p>System of linear equations, solution of a system of linear equations, consistent, inconsistent, dependent, independent, substitution method, elimination method, modeling linear systems, linear inequality, solution of an inequality, system of linear inequalities,</p>	Quizzes, chapter test	25 days

			<p><i>of the situations they model.</i></p> <p>CC.2.2.HS.D.7 <i>Create and graph equations or inequalities to describe numbers or relationships.</i></p> <p>CC.2.2.HS.D.10 <i>Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.</i></p>	<p>solution of a system of linear inequalities</p>		
3	Exponents and Exponential Functions	Students will learn how to apply integer exponents and to apply both multiplication and division properties of	<p>CC.2.1.HS.F.1 <i>Apply and extend the properties</i></p>	Exponent, base, power, negative exponents, zero exponents,	Quizzes, chapter test	15 days

		exponents.	<p><i>of exponents to solve problems with rational exponents.</i></p> <p>CC.2.2.HS.D.2 <i>Write expressions in equivalent forms to solve problems.</i></p> <p>CC.2.2.HS.D.3 <i>Extend the knowledge of arithmetic operations and apply to polynomials.</i></p>			
3-4	Polynomials and Factoring	Students will learn how to add, subtract, multiply, and factor polynomials including special cases.	<p>CC.2.2.HS.D.3 <i>Extend the knowledge of arithmetic operations</i></p>	Monomial, degree of a monomial, polynomial, standard form of a polynomial, degree of a polynomial,	Quizzes, chapter test	23 days

			<p><i>and apply to polynomials.</i></p> <p>CC.2.2.HS.D.5 <i>Use polynomial identities to solve problems</i></p> <p>CC.2.2.HS.D.2 <i>Write expressions in equivalent forms to solve problems.</i></p> <p>.</p>	<p>binomial, trinomial, multiplying binomials, conjugates, factor, perfect square trinomial, difference of squares</p>		
4	Simplifying Radicals and Operations with Radical Expressions	Students will learn how to simplify radicals and how to perform operations with radical expressions.	<p>CC.2.2.HS.D.2 <i>Write expressions in equivalent forms to solve problems.</i></p>	<p>Radical expression, rationalize the denominator, simplify a radical. Expression, like radicals, unlike radicals, conjugates</p>	Quiz or small test	5 days

4	Rational Expressions and Equations	Students will learn how to simplify rational expressions and to solve rational equations.	<p>CC.2.1.HS.F.2 <i>Apply properties of rational and irrational numbers to solve real-world or mathematical problems.</i></p> <p>CC.2.2.HS.D.2 <i>Write expressions in equivalent forms to solve problems.</i></p> <p>CC.2.2.HS.D.3 <i>Extend the knowledge of arithmetic operations and apply to polynomials.</i></p>	Rational expression, excluded value, rational equation	Quiz or small test	4 days (This section may be incorporated with Chapter 8, the Polynomial section.)
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4	Data Analysis and Probability	The students will learn about frequency, measures of central tendency, and dispersion and how to represent them in frequency tables, histograms, and box-and-whisker plots. They will also learn about samples, surveys, and the basics of probability combinations and permutations.	<p>C.2.4.HS.B.1 <i>Summarize, represent, and interpret data on a single count or measurement variable.</i></p> <p>CC.2.4.HS.B.2 <i>Summarize, represent, and interpret data on two categorical and quantitative variables.</i></p>	Frequency, frequency table, histogram, cumulative frequency table, measure of central tendency, outlier, mean, median, mode, measure of dispersion, range of a set of data, box-and-whisker plot, quartile, interquartile range, percentile, percentile rank, quantitative, qualitative, univariate, bivariate, population, sample, bias, multiplication counting principle, permutation, combination, factorial, order, outcome, sample space, event, probability, theoretical	Quizzes, chapter test	10 days
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