



Mathletics

Mathletics Common Core State Standards Alignment

Algebra I - Integrated Math III

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Powerful reporting

Student centered

CCSS Standards
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Mathletics and the CCSS Standards

The team at Mathletics is committed to providing a resource that is powerful, targeted, and, most importantly, relevant to all students.

Mathletics includes well over 1,200 individual adaptive practice activities. Our team of educational publishers has created a course that specifically follows the Common Core State Standards. You can be assured that students have access to relevant and targeted content.

Courses consist of topics based on domains, clusters, and standards. Activities within each topic provide adaptive practice and each topic has a pre and post assessment. What's more, Mathletics contains an extensive library of eBook—for use on screen or as a printable resource—that are also mapped to the requirements of the Common Core.

This document outlines this mapping and acts as a useful guide when using Mathletics in your school.

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CCSS Standards
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CCSS Algebra I

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Number and Quantity						
The Real Number System	Extend the properties of exponents to rational exponents.	N.RN.1	Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. *For example, we define $5^{1/3}$ to be the cube root of 5 because we want $(5^{1/3})^3 = 5^{(1/3)3}$ to hold, so $(5^{1/3})^3$ must equal 5.*	Exponents	Exponent Laws and Algebra Exponent Notation and Algebra Simplifying with Exponent Laws 2 Fractional Exponents Irrational Number to Exponent Form Zero Exponent and Algebra	Radicals and Exponents Exponents
The Real Number System	Extend the properties of exponents to rational exponents.	N.RN.2	Rewrite expressions involving radicals and rational exponents using the properties of exponents.	Exponents	Fractional Exponents Irrational Number to Exponent Form Zero Exponents and Algebra Simplifying with Exponent Laws 1 Multiplication with Exponents Exponent Laws and Algebra Exponent Laws with Brackets	Grade 8 Pythagoras' Theorem
The Real Number System	Use properties of rational and irrational numbers.	N.RN.3	Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational.	Irrational Numbers	Adding and Subtracting Irrational Numbers Multiplying Irrational Numbers Expanding Binomial Irrational Numbers	Under review
Quantities	Reason quantitatively and use units to solve problems.	N.Q.1	Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.	Under review	Under Consideration	Under review

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Number and Quantity						
Quantities	Reason quantitatively and use units to solve problems.	N.Q.2	Define appropriate quantities for the purpose of descriptive modeling.	Under review	Under Consideration	Under review
Quantities	Reason quantitatively and use units to solve problems.	N.Q.3	Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.	Quantities and Solving Linear Equations	Error in Measurement Percentage Error	Decimals
Conceptual Category: Algebra						
Seeing Structure in Expressions	Interpret the structure of expressions.	A.SSE.1.a	Interpret expressions that represent a quantity in terms of its context. Interpret parts of an expression, such as terms, factors, and coefficients.	Linear Expressions and Equations	Gradients for Real Write an Equation: Word Problems	Depreciation Interest
				Quadratic Equations and Inequalities	Vertex of a Parabola	
				Exponents	Compound Interest Compound Interest by Formula Depreciation Declining Balance Depreciation	
Seeing Structure in Expressions	Interpret the structure of expressions.	A.SSE.1.b	Interpret expressions that represent a quantity in terms of its context. Interpret complicated expressions by viewing one or more of their parts as a single entity. *For example, interpret $P(1+r)^n$ as the product of P and a factor not depending on P.*	Quadratic Equations and Inequalities	The Discriminant Constructing Formulae	Under review
Seeing Structure in Expressions	Interpret the structure of expressions.	A.SSE.2	Use the structure of an expression to identify ways to rewrite it. *For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$.*	Quadratic Equations and Inequalities	Factoring Quadratics 1 Factoring Quadratics 2 Grouping in Pairs	Expanding and Factorizing

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Conceptual Category: Algebra						
Seeing Structure in Expressions	Write expressions in equivalent forms to solve problems.	A.SSE.3.a	Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. Factor a quadratic expression to reveal the zeros of the function it defines.	Quadratic Equations and Inequalities	Highest Common Algebraic Factor Factoring Quadratics 1 Factoring Quadratics 2 Grouping in Pairs	Under review
Seeing Structure in Expressions	Write expressions in equivalent forms to solve problems.	A.SSE.3.b	Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.	Quadratic Equations and Inequalities	Completing the Square Completing the Square 2 Vertex of a Parabola	Under review
Seeing Structure in Expressions	Write expressions in equivalent forms to solve problems.	A.SSE.3.c	Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.Use the properties of exponents to transform expressions for exponential functions. *For example the expression 1.15t can be rewritten as* $(1.15^{1/12})^{12t} \approx 1.012^{12t}$ *to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.*	Under review	Under Consideration	Under review
Arithmetic with Polynomials and Rational Expressions	Perform arithmetic operations on polynomials.	A.APR.1	Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.	Add, Subtract, and Multiply Polynomials	Like Terms: Add and Subtract Simplifying Expressions Algebraic Fractions 1 Algebraic Fractions 2 Algebraic Multiplication Expand then Simplify Expanding Binomial Products Special Binomial Products	Expanding and Factorizing

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Algebra						
Creating Equations	Create equations that describe numbers or relationships.	A.CED.1	Create equations and inequalities in one variable and use them to solve problems. *Include equations arising from linear and quadratic functions, and simple rational and exponential functions.*	Linear Expressions and Equations	Writing Algebraic Expressions Equations to Solve Problems Writing Equations Write an Equation: Word Problems	Quadratic Equations Depreciation Interest
				Quadratic Equations and Inequalities	Constructing Formulae	
Creating Equations	Create equations that describe numbers or relationships.	A.CED.2	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.	Linear Expressions and Equations	Equation from Point and Gradient Equation from Two Points Graphing from a Table of Values Graphing from a Table of Values 2 Which Straight Line? $y=ax$ Determining a Rule for a Line Equation of a Line 1 Modeling Linear Relationships	Linear Relationships Exponential and Power Graphs
				Exponents	Graphing Exponentials	
				Quadratic Equations and Inequalities	Vertex of a Parabola Graphing Parabolas	
Creating Equations	Create equations that describe numbers or relationships.	A.CED.3	Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. *For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.*	Under review	Under Consideration	Under review

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Conceptual Category: Algebra						
Creating Equations	Create equations that describe numbers or relationships.	A.CED.4	Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. *For example, rearrange Ohm's law $V = IR$ to highlight resistance R.*	Quantities and Solving Linear Equations	Changing the Subject	Linear Relationships Depreciation
Reasoning with Equations and Inequalities	Understand solving equations as a process of reasoning and explain the reasoning.	A.REI.1	Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.	Quantities and Solving Linear Equations	Find the Mistake Addition Properties Multiplication Properties Using the Distributive Property	Equations Quadratic Equations

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Conceptual Category: Algebra						
Reasoning with Equations and Inequalities	Solve equations and inequalities in one variable.	A.REI.3	Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.	Quantities and Solving Linear Equations	Recognising Like Terms Checking Solutions Solving Simple Equations Solving More Equations Solve Two-Step Equations Equations with Grouping Symbols Solve Multi-Step Equations Equations: Variables, Both Sides Equations with Decimals Equations with Fractions Simple Substitution Simple Substitution 3 Real Formulae	Equations Equations and Inequalities
				Linear Expressions and Equations	Equations to Solve Problems Writing Equations Write an Equation: Word Problems	Equations Equations and Inequalities
				Linear Inequalities	Solve One-Step Inequalities 1 Solve One-Step Inequalities 2 Solve Two-Step Inequalities Solving Inequalities 1 Solving Inequalities 2 Solving Inequalities 3 Graphing Inequalities 1 Graphing Inequalities 2 Graphing Inequalities 3	Inequalities Equations and Inequalities
Reasoning with Equations and Inequalities	Solve equations and inequalities in one variable.	A.REI.4.a.	Solve quadratic equations in one variable. Use the method of completing the square to transform any quadratic equation in x into an equation of the form $(x - p)^2 = q$ that has the same solutions. Derive the quadratic formula from this form.	Quadratic Equations and Inequalities	Quadratic Equations 1 Quadratic Equations 2 Roots of the Quadratic	Quadratic Equations

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Conceptual Category: Algebra						
Reasoning with Equations and Inequalities	Solve equations and inequalities in one variable.	A.REI.4.b	Solve quadratic equations in one variable. Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as $a \pm bi$ for real numbers a and b.	Quadratic Equations and Inequalities	Quadratic Equations 1 Quadratic Equations 2 Quadratic Formula The Discriminant Grouping in Pairs Quadratic Inequalities	Equations and Inequalities Factorizing Quadratic Equations
Reasoning with Equations and Inequalities	Solve systems of equations.	A.REI.5	Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.	Under review	Under Consideration	Equations and Inequalities
Reasoning with Equations and Inequalities	Solve systems of equations.	A.REI.6	Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.	Systems of Linear Equations	Solve Systems by Graphing Are they Parallel? Simultaneous Linear Equations Breakeven Point Simultaneous Equations 1 Simultaneous Equations 2	Equations and Inequalities
Reasoning with Equations and Inequalities	Solve systems of equations.	A.REI.7	Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. *For example, find the points of intersection between the line $y = -3x$ and the circle $x^2 + y^2 = 3$.*	Linear and Quadratic Systems	Intersection: Line & Parabola Simultaneous Equations 3 Intersection: Line & Circle	Quadratic Equations
Reasoning with Equations and Inequalities	Represent and solve equations and inequalities graphically.	A.REI.10	Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).	Linear Expressions and Equations	Reading Values from a Line	Under review

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Conceptual Category: Algebra						
Reasoning with Equations and Inequalities	Represent and solve equations and inequalities graphically.	A.REI.11	Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.	Under review	Under Consideration	Under review
Reasoning with Equations and Inequalities	Represent and solve equations and inequalities graphically.	A.REI.12	Graph the solutions to a linear inequality in two variables as a halfplane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.	Linear Inequalities	Linear Regions Intersecting Linear Regions	Under review
Conceptual Category: Functions						
Interpreting Functions	Understand the concept of a function and use function notation.	F.IF.1	Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x. The graph of f is the graph of the equation $y = f(x)$.	Functions	Function Rules and Tables Horizontal and Vertical Lines	Functions
Interpreting Functions	Understand the concept of a function and use function notation.	F.IF.2	Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.	Functions	Function Notation 1 Function Notation 2 Function Notation 3	Functions

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Conceptual Category: Functions						
Interpreting Functions	Understand the concept of a function and use function notation.	F.IF.3	Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. *For example, the Fibonacci sequence is defined recursively by $f(0) = f(1) = 1$, $f(n+1) = f(n) + f(n-1)$ for $n \geq 1$.*	Arithmetic and Geometric Sequences	Table of Values Terms: Arithmetic Progressions Terms: Geometric Progressions 1 Terms: Geometric Progressions 2	Sequences & Series: Arithmetic Sequences & Series: Geometric
Interpreting Functions	Interpret functions that arise in applications in terms of a context.	F.IF.4	For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. *Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.*	Linear Expressions and Equations	Intercepts Slope of a Line $y=ax$ Gradients for Real	Linear Relationships
				Quadratic Equations and Inequalities	Vertex of a Parabola Graphing Parabolas Parabolas and Rectangles Parabolas and Marbles	Parabolas
Interpreting Functions	Interpret functions that arise in applications in terms of a context.	F.IF.5	Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. *For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.*	Under review	Under Consideration	Functions
Interpreting Functions	Interpret functions that arise in applications in terms of the context.	F.IF.6	Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.	Linear Expressions and Equations	Equation from Two Points	Under review

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Conceptual Category: Functions						
Interpreting Functions	Analyze functions using different representations.	F.IF.7.a	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. Graph linear and quadratic functions and show intercepts, maxima, and minima.	Linear Expressions and Equations	Graphing from a Table of Values Graphing from a Table of Values 2 Which Straight Line?	Linear Relationships
				Quadratic Equations and Inequalities	Graphing Parabolas	Parabolas
Interpreting Functions	Analyze functions using different representations.	F.IF.7.b	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.	Absolute Value, Step, and Piecewise	Absolute Value Expressions Absolute Value Equations Absolute Value Graphs Step Graphs Piecemeal Functions	Under review
Interpreting Functions	Analyze functions using different representations.	F.IF.7.e	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.	Exponents	Graphing Exponentials	Exponential and Power Graphs
Interpreting Functions	Analyze functions using different representations.	F.IF.8.a	Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context.	Quadratic Equations and Inequalities	Factoring Quadratics 1 Factoring Quadratics 2 Grouping in Pairs Completing the Square Completing the Square 2 Vertex of a Parabola	Factorizing Parabolas Quadratic Equations

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Conceptual Category: Functions						
Interpreting Functions	Analyze functions using different representations.	F.IF.8.b	Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. Use the properties of exponents to interpret expressions for exponential functions. *For example, identify percent rate of change in functions such as* $y = (1.02)^t$, $y = (0.97)^t$, $y = (1.01)^{12t}$, $y = (1.2)^{t/10}$, *and classify them as representing exponential growth or decay.*	Exponents	Multiplication with Exponents	Under review
Interpreting Functions	Analyze functions using different representations.	F.IF.9	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.*	Under review	Under Consideration	Linear Relationships Exponential and Power Graphs
Building Functions	Build a function that models a relationship between two quantities.	F.BF.1.a	Write a function that describes a relationship between two quantities. Determine an explicit expression, a recursive process, or steps for calculation from a context.	Linear Expressions and Equations	Modeling Linear Relationships	Under review
				Exponents	Compound Interest Compound Interest by Formula Depreciation Declining Balance Depreciation	Depreciation Interest
				Quadratic Equations and Inequalities	Constructing Formulae	Parabolas

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Conceptual Category: Functions						
Building Functions	Build a function that models a relationship between two quantities.	F.BF.1.b	Write a function that describes a relationship between two quantities. Combine standard function types using arithmetic operations. *For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.*	Under review	Under Consideration	Under review
Building Functions	Build a function that models a relationship between two quantities.	F.BF.2	Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms.	Arithmetic and Geometric Sequences	Table of Values Terms: Arithmetic Progressions Terms: Geometric Progressions 1 Terms: Geometric Progressions 2	Sequences & Series: Arithmetic Sequences & Series: Geometric
Building Functions	Build new functions from existing functions.	F.BF.3	Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k\,f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. *Include recognizing even and odd functions from their graphs and algebraic expressions for them.*	Under review	Under Consideration	Exponential and Power Graphs Functions Parabolas
Building Functions	Build new functions from existing functions.	F.BF.4.a	Find inverse functions. Solve an equation of the form $f(x) = c$ for a simple function f that has an inverse and write an expression for the inverse. *For example, $f(x) = 2x^3$ or $f(x) = (x + 1)/(x - 1)$ for $x \neq 1$.*	Functions	Inverse Functions	Functions

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Conceptual Category: Functions						
Linear, Quadratic, and Exponential Models	Construct and compare linear, quadratic, and exponential models and solve problems.	F.LE.1.a	Distinguish between situations that can be modeled with linear functions and with exponential functions. Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.	Under review	Under Consideration	Sequences & Series: Arithmetic Sequences & Series: Geometric
Linear, Quadratic, and Exponential Models	Construct and compare linear, quadratic, and exponential models and solve problems.	F.LE.1.b	Distinguish between situations that can be modeled with linear functions and with exponential functions. Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.	Functions	What Type of Function?	Straight Lines Sequences & Series: Arithmetic
Linear, Quadratic, and Exponential Models	Construct and compare linear, quadratic, and exponential models and solve problems.	F.LE.1.c	Distinguish between situations that can be modeled with linear functions and with exponential functions. Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.	Functions	What Type of Function?	Depreciation Interest Sequences & Series: Geometric
Linear, Quadratic, and Exponential Models	Construct and compare linear, quadratic, and exponential models and solve problems.	F.LE.2	Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).	Functions	Find the Function Rule	Sequences & Series: Arithmetic
				Linear Expressions and Equations	Equations to Solve Problems Writing Equations Write an Equation: Word Problems Equation from Two Points Equation of a Line 1 Modeling Linear Relationships	
				Arithmetic and Geometric Sequences	Terms: Geometric Progressions 2	Depreciation Interest Sequences & Series: Geometric

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Conceptual Category: Functions						
Linear, Quadratic, and Exponential Models	Construct and compare linear, quadratic, and exponential models and solve problems.	F.LE.3	Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.	Under review	Under Consideration	Under review
Linear, Quadratic, and Exponential Models	Interpret expressions for functions in terms of the situation they model.	F.LE.5	Interpret the parameters in a linear or exponential function in terms of a context.	Linear Expressions and Equations	Gradients for Real	Under review
Conceptual Category: Statistics and Probability						
Interpreting Categorical and Quantitative Data	Summarize, represent, and interpret data on a single count or measurement variable.	S.ID.1	Represent data with plots on the real number line (dot plots, histograms, and box plots).	Descriptive Statistics	Dot Plots Histograms Box-and-Whisker Plots 1 Box-and-Whisker Plots 2	Data Interpreting Data
Interpreting Categorical and Quantitative Data	Summarize, represent, and interpret data on a single count or measurement variable.	S.ID.2	Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.	Descriptive Statistics	Data Terms Mean Mean 1 Median Median 1 Mode Calculating Interquartile Range Calculating Standard Deviation Interpreting Standard Deviation	Data Interpreting Data
Interpreting Categorical and Quantitative Data	Summarize, represent, and interpret data on a single count or measurement variable.	S.ID.3	Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).	Descriptive Statistics	Skewness of Data	Interpreting Data

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Conceptual Category: Statistics and Probability						
Interpreting Categorical and Quantitative Data	Summarize, represent, and interpret data on two categorical and quantitative variables.	S.ID.5	Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data.	Under review	Under Consideration	Under review
Interpreting Categorical and Quantitative Data	Summarize, represent, and interpret data on two categorical and quantitative variables.	S.ID.6.a	Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. Fit a function to the data; use functions fitted to data to solve problems in the context of the data. *Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models.*	Under review	Under Consideration	Under review
Interpreting Categorical and Quantitative Data	Summarize, represent, and interpret data on two categorical and quantitative variables.	S.ID.6.b	Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. Informally assess the fit of a function by plotting and analyzing residuals.	Under review	Under Consideration	Under review
Interpreting Categorical and Quantitative Data	Summarize, represent, and interpret data on two categorical and quantitative variables.	S.ID.6.c	Fit a linear function for a scatter plot that suggests a linear association.	Descriptive Statistics	Data Analysis: Scatter Plots Scatter Plots	Under review
Interpreting Categorical and Quantitative Data	Interpret linear models.	S.ID.7	Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.	Under review	Under Consideration	Under review
Interpreting Categorical and Quantitative Data	Interpret linear models.	S.ID.8	Compute (using technology) and interpret the correlation coefficient of a linear fit.	Descriptive Statistics	Correlation	Under review
Interpreting Categorical and Quantitative Data	Interpret linear models.	S.ID.9	Distinguish between correlation and causation	Under review	Under Consideration	Under review

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Geometry						
Congruence	Experiment with transformations in the plane.	G.CO.1	Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.	Line and Angle Basics	What Line Am I? Classifying Angles Labelling Angles Angles in a Revolution	Under review
Congruence	Experiment with transformations in the plane.	G.CO.2	Represent transformations in the plane using, e.g., transparencies and geometry software; describe transformations as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch).	Rigid Transformations	Transformations Transformations: Coordinate Plane Rotations: Coordinate Plane	Under review
Congruence	Experiment with transformations in the plane.	G.CO.3	Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself.	Rigid Transformations	Symmetry or Not 1 Symmetry or Not? Rotational Symmetry	Under review
Congruence	Experiment with transformations in the plane.	G.CO.4	Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.	Under review	Under Consideration	Under review
Congruence	Experiment with transformations in the plane.	G.CO.5	Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another.	Under review	Under Consideration	Under review

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Conceptual Category: Geometry						
Congruence	Understand congruence in terms of rigid motions.	G.CO.6	Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.	Rigid Transformations	Congruent Figures (Grid) Congruent Figures (Dots)	Under review
Congruence	Understand congruence in terms of rigid motions.	G.CO.7	Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.	Rigid Transformations	Congruent Triangles	Similarity and Congruence
Congruence	Understand congruence in terms of rigid motions.	G.CO.8	Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.	Under review	Under Consideration	Similarity and Congruence
Congruence	Prove Geometric Theorems.	G.CO.9	Prove theorems about lines and angles. *Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.*	Geometric Theorems	Parallel Lines Angles and Parallel Lines	Under review
Congruence	Prove Geometric Theorems.	G.CO.10	Prove theorems about triangles. *Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.*	Geometric Theorems	Angle Measures in a Triangle Plane Figure Theorems Ratio of Intercepts	Polygons and Angles

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Geometry						
Congruence	Prove geometric theorems.	G.CO.11	Prove theorems about parallelograms. *Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.*	Geometric Theorems	Plane Figure Theorems	Under review
Congruence	Make geometric constructions.	G.CO.12	Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). *Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.*	Under review	Under Consideration	Constructions
Congruence	Make geometric constructions.	G.CO.13	Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle.	Under review	Under Consideration	Constructions
Similarity, Right Triangles, and Trigonometry	Understand similarity in terms of similarity transformations.	G.SRT.1.a	Verify experimentally the properties of dilations given by a center and a scale factor: A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged.	Under review	Under Consideration	Under review

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Geometry						
Similarity, Right Triangles, and Trigonometry	Understand similarity in terms of similarity transformations.	G.SRT.1.b	Verify experimentally the properties of dilations given by a center and a scale factor: The dilation of a line segment is longer or shorter in the ratio given by the scale factor.	Similarity	Scale Measurement Scale Factor	Under review
Similarity, Right Triangles, and Trigonometry	Understand similarity in terms of similarity transformations.	G.SRT.2	Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.	Similarity	Similar Figures Similar Figures 1	Similarity and Congruence
Similarity, Right Triangles, and Trigonometry	Understand similarity in terms of similarity transformations.	G.SRT.3	Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar.	Similarity	Similarity Proofs	Similarity and Congruence
Similarity, Right Triangles, and Trigonometry	Prove theorems involving similarity.	G.SRT.4	Prove theorems about triangles. *Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.*	Geometric Theorems	Ratio of Intercepts	Under review
Similarity, Right Triangles, and Trigonometry	Prove theorems involving similarity.	G.SRT.5	Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.	Congruence	Congruent Figures: Find Values	Similarity and Congruence
				Similarity	Using Similar Triangles Using Similar Triangles 1	Similarity and Congruence

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CCSS Geometry

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Geometry						
Similarity, Right Triangles, and Trigonometry	Define trigonometric ratios and solve problems involving right triangles.	G.SRT.6	Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.	Trigonometry	Exact Trigonometric Ratios Sin A Cos A Tan A	Trigonometry
Similarity, Right Triangles, and Trigonometry	Define trigonometric ratios and solve problems involving right triangles.	G.SRT.7	Explain and use the relationship between the sine and cosine of complementary angles.	Under review	Under Consideration	Trigonometric Relationships
Similarity, Right Triangles, and Trigonometry	Define trigonometric ratios and solve problems involving right triangles.	G.SRT.8	Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.	Trigonometry	Pythagorean Theorem Find Unknown Sides Find Unknown Angles Elevation and Depression Trigonometry Problems 2	Pythagorean Theorem Trigonometry
Similarity, Right Triangles, and Trigonometry	Apply trigonometry to general triangles.	G.SRT.9	Derive the formula $A = 1/2\ ab\ \sin(C)$ for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side.	Trigonometry	Area Rule 1 Area Rule 2 Area Problems	Non Right Angled Triangles
Similarity, Right Triangles, and Trigonometry	Apply trigonometry to general triangles.	G.SRT.10	Prove the Laws of Sines and Cosines and use them to solve problems.	Trigonometry	Sine Rule 1 Cosine Rule 1 Cosine Rule 2	Non Right Angled Triangles
Similarity, Right Triangles, and Trigonometry	Apply trigonometry to general triangles.	G.SRT.11	Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g., surveying problems, resultant forces).	Trigonometry	Sine Rule 1 Cosine Rule 1 Cosine Rule 2	Non Right Angled Triangles
Circles	Understand and apply theorems about circles.	G.C.1	Prove that all circles are similar.	Under review	Under Consideration	Under review

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CCSS Geometry

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Geometry						
Circles	Understand and apply theorems about circles.	G.C.2	Identify and describe relationships among inscribed angles, radii, and chords. *Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radiusintersects the circle.*	Circles	Circle Terms Circle Theorem Tangents and Secants	Tangents and Secants Chords and Angles
Circles	Understand and apply theorems about circles.	G.C.3	Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle.	Under review	Under Consideration	Under review
Circles	Understand and apply theorems about circles.	G.C.4	Construct a tangent line from a point outside a given circle to the circle.	Circles	Intersection: Line & Circle	Constructions
Circles	Find arc lengths and areas of sectors of circles.	G.C.5	Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector.	Circles	Converting Radians and Degrees Perimeter and Circles Arc Length Length of an Arc Area of a Sector (degrees and radians)	Perimeter and Area
Expressing Geometric Properties with Equations	Translate between the geometric description and the equation for a conic section.	G.GPE.1	Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation.	Circles	Centre and Radius 1 Centre and Radius 2 Graphing Circles	Circle Graphs
Expressing Geometric Properties with Equations	Translate between the geometric description and the equation for a conic section.	G.GPE.2	Derive the equation of a parabola given a focus and directrix.	Equations of Parabolas	Vertex of a Parabola Graphing Parabolas Focus and Directrix 1 Focus and Directrix 2 Focus and Directrix 3 Focus and Directrix 4	Under review

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CCSS Geometry

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Geometry						
Expressing Geometric Properties with Equations	Use coordinates to prove simple geometric theorems algebraically.	G.GPE.4	Use coordinates to prove simple geometric theorems algebraically. *For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point (1, √3) lies on the circle centered at the origin and containing the point (0, 2).*	Connecting Geometry and Algebra	Coordinate Methods in Geometry Perpendicular Distance 1 Perpendicular Distance 2	Coordinate Geometry Circle Graphs
				Circles	Intersection: Line & Circle	Circle Graphs
Expressing Geometric Properties with Equations	Use coordinates to prove simple geometric theorems algebraically.	G.GPE.5	Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).	Connecting Geometry and Algebra	Are they Parallel? Are they Perpendicular? Equation of a Line 3 Equation from Point and Gradient	Linear Relationships Straight Lines
Expressing Geometric Properties with Equations	Use coordinates to prove simple geometric theorems algebraically.	G.GPE.6	Find the point on a directed line segment between two given points that partitions the segment in a given ratio.	Connecting Geometry and Algebra	Midpoint by Formula	Coordinate Geometry
Expressing Geometric Properties with Equations	Use coordinates to prove simple geometric theorems algebraically.	G.GPE.7	Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.	Connecting Geometry and Algebra	Distance Between Two Points	Coordinate Geometry
Geometric Measurement and Dimension	Explain volume formulas and use them to solve problems.	G.GMD.1	Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. *Use dissection arguments, Cavalieri's principle, and informal limit arguments.*	Under review	Under Consideration	Under review

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CCSS Geometry

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Geometry						
Geometric Measurement and Dimension	Explain volume formulas and use them to solve problems.	G.GMD.3	Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.	Three-Dimensional Figures	Volume: Triangular Prisms Volume: Prisms Volume: Cylinders Volume Pyramids What Pyramid am I? Volume: Cones Volume: Spheres Volume Composite Figures Volume: Rearrange Formula	Measuring Solids
Geometric Measurement and Dimension	Visualize relationships between two-dimensional and three-dimensional objects.	G.GMD.4	Identify the shapes of two-dimensional cross-sections of three -dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.	Three-Dimensional Figures	Relate Shapes and Solids Nets	Under review
Modeling with Geometry	Apply geometric concepts in modeling situations.	G.MG.1	Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).	Three-Dimensional Figures	Right and Oblique Objects Match the Solid 2	Measuring Solids
Modeling with Geometry	Apply geometric concepts in modeling situations.	G.MG.2	Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).	Under review	Under Consideration	Under review
Modeling with Geometry	Apply geometric concepts in modeling situations.	G.MG.3	Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).	Trigonometry	Trigonometry Problems 2	Under review

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CCSS Geometry

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Statistics and Probability						
Conditional Probability and the Rules of Probability	Understand independence and conditional probability and use them to interpret data.	S.CP.1	Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events ("or," "and," "not").	Probability	Complementary Events Venn Diagrams Probability - 'And' and 'Or'	Probability
Conditional Probability and the Rules of Probability	Understand independence and conditional probability and use them to interpret data.	S.CP.2	Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent.	Under review	Under Consideration	Probability
Conditional Probability and the Rules of Probability	Understand independence and conditional probability and use them to interpret data.	S.CP.3	Understand the conditional probability of A given B as $P(A \text{ and } B)/P(B)$, and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B.	Under review	Under Consideration	Under review
Conditional Probability and the Rules of Probability	Understand independence and conditional probability and use them to interpret data.	S.CP.4	Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. *For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results.*	Probability	Two-way Table Probability Probability Tables	Probability

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CCSS Geometry

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Statistics and Probability						
Conditional Probability and the Rules of Probability	Understand independence and conditional probability and use them to interpret data.	S.CP.5	Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. *For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer.*	Under review	Under Consideration	Under review
Conditional Probability and the Rules of Probability	Use the rules of probability to compute probabilities of compound events in a uniform probability model.	S.CP.6	Find the conditional probability of A given B as the fraction of B's outcomes that also belong to A, and interpret the answer in terms of the model.	Under review	Under Consideration	Under review
Conditional Probability and the Rules of Probability	Use the rules of probability to compute probabilities of compound events in a uniform probability model.	S.CP.7	Apply the Addition Rule, $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$, and interpret the answer in terms of the model.	Probability	Find the Probability	Under review
Conditional Probability and the Rules of Probability	Use the rules of probability to compute probabilities of compound events in a uniform probability model.	S.CP.8	Apply the general Multiplication Rule in a uniform probability model, $P(A \text{ and } B) = P(A)P(B \mid A) = P(B)P(A \mid B)$, and interpret the answer in terms of the model.	Probability	Probability With Replacement Probability Without Replacement	Under review
Conditional Probability and the Rules of Probability	Use the rules of probability to compute probabilities of compound events in a uniform probability model.	S.CP.9	Use permutations and combinations to compute probabilities of compound events and solve problems.	Probability	Counting Techniques 1 Counting Techniques 2 Tree Diagrams	Under review
Using Probability to Make Decisions	Use probability to evaluate outcomes of decisions.	S.MD.6	Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator).	Probability	Fair Games	Under review

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CCSS Geometry

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Statistics and Probability						
Using Probability to Make Decisions	Use probability to evaluate outcomes of decisions.	S.MD.7	Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game).	Under review	Under Consideration	Under review

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Number and Quantity						
The Complex Number System	Perform arithmetic operations with complex numbers.	N.CN.1	Know there is a complex number i such that $i^2 = -1$, and every complex number has the form $a + bi$ with a and b real.	Complex Numbers	Introduction to Complex Numbers	Under review
The Complex Number System	Perform arithmetic operations with complex numbers.	N.CN.2	Use the relation $i^2 = -1$ and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers.	Complex Numbers	Powers of i Adding Complex Numbers Subtracting Complex Numbers Complex Multiplication	Under review
The Complex Number System	Use complex numbers in polynomial identities and equations.	N.CN.7	Solve quadratic equations with real coefficients that have complex solutions.	Under review	Under Consideration	Under review
The Complex Number System	Use complex numbers in polynomial identities and equations.	N.CN.8	Extend polynomial identities to the complex numbers. *For example, rewrite* $x^2 + 4$ *as* $(x + 2i)(x - 2i)$.	Under review	Under Consideration	Under review
The Complex Number System	Use complex numbers in polynomial identities and equations.	N.CN.9	Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials.	Under review	Under Consideration	Under review
Conceptual Category: Algebra						
Seeing Structure in Expressions	Interpret the structure of expressions.	A.SSE.1.a	Interpret expressions that represent a quantity in terms of its context. Interpret parts of an expression, such as terms, factors, and coefficients.	Modeling with Functions	Gradients for Real Exponential Growth and Decay	Sketching Polynomials
Seeing Structure in Expressions	Interpret the structure of expressions.	A.SSE.1.b	Interpret expressions that represent a quantity in terms of its context. Interpret complicated expressions by viewing one or more of their parts as a single entity. *For example, interpret* $P(1 + r)^n$ *as the product of* P *and a factor not depending on* P.	Solving Higher Order Equations	Factoring Expressions Equations Reducible to Quadratics	Geometric Series in Finance

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CCSS Algebra II

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Algebra						
Seeing Structure in Expressions	Interpret the structure of expressions.	A.SSE.2	Use the structure of an expression to identify ways to rewrite it. *For example, see* $x^4 - y^4$ *as* $(x^2)^2 - (y^2)^2$*, thus recognizing it as a difference of squares that can be factored as* $(x^2 - y^2)(x^2 + y^2)$.	Solving Higher Order Equations	Equations Reducible to Quadratics	Factorizing
				Polynomial Arithmetic	Polynomial Long Division Simplifying Binomial Expressions	Factorizing
Seeing Structure in Expressions	Write expressions in equivalent forms to solve problems.	A.SSE.4	Derive the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems. *For example, calculate mortgage payments.*	Sequences and Series	Limiting Sum Terms: Geometric Progressions 1 Terms: Geometric Progressions 2 Sum: Geometric Progressions	Sequences & Series: Geometric Geometric Series and Loan Repayments Geometric Series in Finance
Arithmetic with Polynomials and Rational Expressions	Perform arithmetic operations on polynomials.	A.APR.1	Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.	Polynomial Arithmetic	Like Terms: Add, Subtract Algebraic Multiplication Multiplication with Exponents Dividing Expressions Algebraic Fractions 1 Indirect Variation Special Binomial Products Expanding Brackets Expand then Simplify Expanding Binomial Products	Polynomials Equations Expanding and Factorizing Simplifying Algebra Binomials and Pascal's Triangle
Arithmetic with Polynomials and Rational Expressions	Understand the relationship between zeros and factors of polynomials.	A.APR.2	Know and apply the Remainder Theorem: For a polynomial $p(x)$ and a number a, the remainder on division by $x - a$ is $p(a)$, so $p(a) = 0$ if and only if $(x - a)$ is a factor of $p(x)$.	Solving Higher Order Equations	Polynomial Factor Theorem More Substitution in Formulae Rationalising the Denominator Rationalising and Binomials	Polynomials
Arithmetic with Polynomials and Rational Expressions	Understand the relationship between zeros and factors of polynomials.	A.APR.3	Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial.	Solving Higher Order Equations	Factoring Expressions Equations Reducible to Quadratics Polynomial Factor Theorem Graphing Cubics	Factorizing Polynomials Sketching Polynomials

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Algebra						
Arithmetic with Polynomials and Rational Expressions	Use polynomial identities to solve problems.	A.APR.4	Prove polynomial identities and use them to describe numerical relationships. For example, the polynomial identity $(x^2 + y^2)^2 = (x^2 - y^2)^2 + (2xy)^2$ can be used to generate Pythagorean triples.	Solving Higher Order Equations	Equations Reducible to Quadratics	Factorizing
Arithmetic with Polynomials and Rational Expressions	Use polynomial identities to solve problems.	A.APR.5	Know and apply the Binomial Theorem for the expansion of $(x + y)^n$ in powers of x and y for a positive integer n, where x and y are any numbers, with coefficients determined for example by Pascal's Triangle.	Under review	Under Consideration	The Binomial Theorem Binomials and Pascal's Triangle
Arithmetic with Polynomials and Rational Expressions	Rewrite rational expressions.	A.APR.6	Rewrite simple rational expressions in different forms; write $a(x)/b(x)$ in the form $q(x) + r(x)/b(x)$, where $a(x)$, $b(x)$, $q(x)$, and $r(x)$ are polynomials with the degree of $r(x)$ less than the degree of $b(x)$, using inspection, long division, or, for the more complicated examples, a computer algebra system.	Polynomial Arithmetic	Polynomial Long Division Simplifying Binomial Expressions	Polynomials
Arithmetic with Polynomials and Rational Expressions	Rewrite rational expressions.	A.APR.7	Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions.	Rational Equations	Algebraic Fractions 2 Algebraic Fractions 3 Factoring and Fractions 1 Factoring and Fractions 2	Factorizing
Creating Equations	Create equations that describe numbers or relationships.	A.CED.1	Create equations and inequalities in one variable and use them to solve problems. *Include equations arising from linear and quadratic functions, and simple rational and exponential functions.*	Modeling with Functions	Write an Equation: Word Problems	Under review
Creating Equations	Create equations that describe numbers or relationships.	A.CED.2	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.	Modeling with Functions	$y=ax$ Find the Function Rule Modeling Linear Relationships Linear Modelling Parabolas and Marbles Parabolas and Rectangles	Under review

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Algebra						
Creating Equations	Create equations that describe numbers or relationships.	A.CED.3	Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. *For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.*	Under review	Under Consideration	Under review
Creating Equations	Create equations that describe numbers or relationships.	A.CED.4	Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. *For example, rearrange Ohm's law $V = IR$ to highlight resistance R.*	Inverse Functions	Inverse Functions	Under review
				Exponents and Logarithms	Change of Base	Logarithms
				Radical Equations	Surface Area: Rearrange Formula Volume: Rearrange Formula Rearranging the Equation	Under review
Reasoning with Equations and Inequalities	Understand solving equations as a process of reasoning and explain the reasoning.	A.REI.2	Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.	Radical Equations	Equations with Square Roots Equations with Cube Roots More Substitution in Formulae Rationalising the Denominator Rationalising and Binomials	Under review
Reasoning with Equations and Inequalities	Represent and solve equations and inequalities graphically.	A.REI.11	Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.	Solving Higher Order Equations	Solve Systems by Graphing	Under review
				Rational Equations	Graphing Hyperbolas	Under review

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CCSS Algebra II

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Functions						
Interpreting Functions	Interpret functions that arise in applications in terms of a context.	F.IF.4	For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. *Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.*	Modeling with Functions	Gradients for Real Parabolas and Marbles Parabolas and Rectangles	Sketching Polynomials
Interpreting Functions	Interpret functions that arise in applications in terms of a context.	F.IF.5	Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. *For example, if the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.*	Modeling with Functions	Perpendicular Distance 1 Absolute Value Graphs Conversion Graphs What Type of Function? Domain Domain and Range	Functions
Interpreting Functions	Interpret functions that arise in applications in terms of the context.	F.IF.6	Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.	Under review	Under Consideration	Under review
Interpreting Functions	Analyze functions using different representations.	F.IF.7.b	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.	Inverse Functions	Graphing Inverse Functions Piecemeal Functions	Under review

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CCSS Algebra II

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Functions						
Interpreting Functions	Analyze functions using different representations.	F.IF.7.c	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.	Solving Higher Order Equations	Graphing Cubics	Exponential and Power Graphs Sketching Polynomials
Interpreting Functions	Analyze functions using different representations.	F.IF.7.e	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.	Trigonometric Functions	Sine and Cosine Curves Trig Graphs in Radians Graph Inverse Trig Functions	Trigonometric Relationships
				Exponents and Logarithms	Graphing Exponentials Exponential or Log Graph?	Logarithms Simple Nonlinear Graphs
Interpreting Functions	Analyze functions using different representations.	F.IF.8.a	Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context.	Polynomial Arithmetic	Polynomial Long Division Simplifying Binomial Expressions	Factorizing Polynomials Sketching Polynomials
Interpreting Functions	Analyze functions using different representations.	F.IF.9	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.*	Under review	Under Consideration	Under review

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Functions						
Building Functions	Build a function that models a relationship between two quantities.	F.BF.1.a	Write a function that describes a relationship between two quantities. Determine an explicit expression, a recursive process, or steps for calculation from a context.	Modeling with Functions	Gradients for Real Write an Equation: Word Problems	Under review
Building Functions	Build a function that models a relationship between two quantities.	F.BF.1.b	Write a function that describes a relationship between two quantities. Combine standard function types using arithmetic operations. *For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.*	Under review	Under Consideration	Under review
Building Functions	Build new functions from existing functions.	F.BF.3	Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k\,f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. *Include recognizing even and odd functions from their graphs and algebraic expressions for them.*	Modeling with Functions	Odd and Even Functions	Exponential and Power Graphs Functions Sketching Polynomials
Building Functions	Build new functions from existing functions.	F.BF.4.a	Find inverse functions. Solve an equation of the form $f(x) = c$ for a simple function f that has an inverse and write an expression for the inverse. *For example, $f(x) = 2x^3$ or $f(x) = (x + 1)/(x - 1)$ for $x \neq 1$.*	Inverse Functions	Inverse Functions	Under review
Linear, Quadratic, and Exponential Models	Construct and compare linear, quadratic, and exponential models and solve problems.	F.LE.4	For exponential models, express as a logarithm the solution to $ab^{ct} = d$ where a, c, and d are numbers and the base b is 2, 10, or e; evaluate the logarithm using technology.	Exponents and Logarithms	Log Laws Equations with Logs Log Base 'e'	Logarithms

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Functions						
Trigonometric Functions	Extend the domain of trigonometric functions using the unit circle.	F.TF.1	Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle.	Trigonometric Functions	Converting Radians and Degrees Unit Circle Reductions	Under review
Trigonometric Functions	Extend the domain of trigonometric functions using the unit circle.	F.TF.2	Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle.	Trigonometric Functions	Sign of the Angle Unit Circle Reductions Trigonometric Relationships Trigonometric Intercepts Inverse Trigonometric Functions	Trigonometric Relationships
Trigonometric Functions	Model periodic phenomena with trigonometric functions.	F.TF.5	Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.	Trigonometric Functions	Period and Amplitude	Under review
Trigonometric Functions	Prove and apply trigonometric identities.	F.FT.8	Prove the Pythagorean identity $\sin^2(\theta) + \cos^2(\theta) = 1$ and use it to find $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ given $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ and the quadrant of the angle.	Trigonometric Functions	Rationalising the Denominator Trig Equations 1 Trig Equations 2 Trig Equations 3 Trig Equations 4	Under review
Conceptual Category: Statistics and Probability						
Interpreting Categorical and Quantitative Data	Summarize, represent, and interpret data on a single count or measurement variable.	S.ID.4	Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve.	Collecting and Analyzing Data	Normal Distribution Calculating z-scores Comparing z-scores Equivalent z-scores	Under review

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CCSS Algebra II

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Statistics and Probability						
Making Inferences and Justifying Conclusions	Understand and evaluate random processes underlying statistical experiments.	S.IC.1	Understand statistics as a process for making inferences about population parameters based on a random sample from that population.	Collecting and Analyzing Data	Capture Recapture Technique Probability Tables Two-way Table Probability	Under review
Making Inferences and Justifying Conclusions	Understand and evaluate random processes underlying statistical experiments.	S.IC.2	Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation. *For example, a model says a spinning coin falls heads up with probability 0.5. Would a result of 5 tails in a row cause you to question the model?*	Under review	Under Consideration	Under review
Making Inferences and Justifying Conclusions	Make inferences and justify conclusions from sample surveys, experiments, and observational studies.	S.IC.3	Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.	Under review	Under Consideration	Under review
Making Inferences and Justifying Conclusions	Make inferences and justify conclusions from sample surveys, experiments, and observational studies.	S.IC.4	Use data from a sample survey to estimate a population mean or proportion; develop a margin of error through the use of simulation models for random sampling.	Under review	Under Consideration	Under review
Making Inferences and Justifying Conclusions	Make inferences and justify conclusions from sample surveys, experiments, and observational studies.	S.IC.5	Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant.	Under review	Under Consideration	Under review
Making Inferences and Justifying Conclusions	Make inferences and justify conclusions from sample surveys, experiments, and observational studies.	S.IC.6	Evaluate reports based on data.	Under review	Under Consideration	Under review

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CCSS Algebra II

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Statistics and Probability						
Using Probability to Make Decisions	Use probability to evaluate outcomes of decisions.	S.MD.6	Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator).	Collecting and Analyzing Data	Fair Games	Under review
Using Probability to Make Decisions	Use probability to evaluate outcomes of decisions.	S.MD.7	Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game).	Under review	Under Consideration	Under review

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Integrated Math I

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Number and Quantity						
Quantities	Reason quantitatively and use units to solve problems.	N.Q.1	Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.	Under review	Under review	Under review
Quantities	Reason quantitatively and use units to solve problems.	N.Q.2	Define appropriate quantities for the purpose of descriptive modeling.	Under review	Under review	Under review
Quantities	Reason quantitatively and use units to solve problems.	N.Q.3	Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.	Number and Quantity	Error in Measurement Percentage Error	Decimals
Conceptual Category: Algebra						
Seeing Structure in Expressions	Interpret the structure of expressions.	A.SSE.1.a	Interpret expressions that represent a quantity in terms of its context. Interpret parts of an expression, such as terms, factors, and coefficients.	Writing and Graphing Linear Equations	Gradients for Real Write an Equation: Word Problems	Under review
Seeing Structure in Expressions	Interpret the structure of expressions.	A.SSE.1.a	Interpret expressions that represent a quantity in terms of its context. Interpret parts of an expression, such as terms, factors, and coefficients.	Exponential Equations and Functions	Compound Interest by Formula Depreciation Declining Balance Depreciation	Depreciation Interest
Seeing Structure in Expressions	Interpret the structure of expressions.	A.SSE.1.b	Interpret expressions that represent a quantity in terms of its context. Interpret complicated expressions by viewing one or more of their parts as a single entity. *For example, interpret $P(1 + r)^n$ as the product of P and a factor not depending on P.*	Exponential Equations and Functions	Compound Interest by Formula Depreciation Declining Balance Depreciation	Depreciation Interest

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Integrated Math I

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Algebra						
Creating Equations	Create equations that describe numbers or relationships.	A.CED.1	Create equations and inequalities in one variable and use them to solve problems. *Include equations arising from linear and quadratic functions, and simple rational and exponential functions.*	Writing and Graphing Linear Equations	Writing Algebraic Expressions Equations to Solve Problems Writing Equations Write an Equation: Word Problems	Under review
Creating Equations	Create equations that describe numbers or relationships.	A.CED.1	Create equations and inequalities in one variable and use them to solve problems. *Include equations arising from linear and quadratic functions, and simple rational and exponential functions.*	Exponential Equations and Functions	Compound Interest by Formula Depreciation Declining Balance Depreciation	Depreciation Interest
Creating Equations	Create equations that describe numbers or relationships.	A.CED.2	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.	Writing and Graphing Linear Equations	Equation from Point and Gradient Equation from Two Points $y=ax$ Determining a Rule for a Line Modeling Linear Relationships	Linear Relationships Exponential and Power Graphs
Creating Equations	Create equations that describe numbers or relationships.	A.CED.2	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.	Writing and Graphing Linear Equations	Which Straight Line? Equation of a Line 1	Straight Lines
Creating Equations	Create equations that describe numbers or relationships.	A.CED.2	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.	Exponential Equations and Functions	Graphing Exponentials	Under review
Creating Equations	Create equations that describe numbers or relationships.	A.CED.3	Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. *For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.*	Under review	Under review	Under review

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Integrated Math I

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Algebra						
Creating Equations	Create equations that describe numbers or relationships.	A.CED.4	Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. *For example, rearrange Ohm's law $V=IR$ to highlight resistance R.*	Number and Quantity	Changing the Subject	Linear Relationships Depreciation
Reasoning with Equations and Inequalities	Understand solving equations as a process of reasoning and explain the reasoning.	A.REI.1	Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.	Solving Linear Equations and Systems	Find the Mistake Addition Properties Multiplication Properties Using the Distributive Property	Equations
Reasoning with Equations and Inequalities	Understand solving equations as a process of reasoning and explain the reasoning.	A.REI.1	Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.	Exponential Equations and Functions	Exponent Laws and Algebra Exponent Laws with Brackets	Exponents
Reasoning with Equations and Inequalities	Understand solving equations as a process of reasoning and explain the reasoning.	A.REI.3	Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.	Solving Linear Equations and Systems	Solving Simple Equations Solving More Equations Solve Two-Step Equations Equations with Grouping Symbols Solve Multi-Step Equations Equations: Variables, Both Sides Equations with Decimals Equations with Fractions	Equations Equations and Inequalities

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Integrated Math I

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Algebra						
Reasoning with Equations and Inequalities	Understand solving equations as a process of reasoning and explain the reasoning.	A.REI.3	Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.	Solving Linear Equations and Systems	Equations to Solve Problems Writing Equations Write an Equation: Word Problems	Equations Equations and Inequalities
Reasoning with Equations and Inequalities	Solve equations and inequalities in one variable.	A.REI.3	Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.	Linear Inequalities	Solve One-Step Inequalities 1 Solve One-Step Inequalities 2 Solve Two-Step Inequalities Solving Inequalities 1 Solving Inequalities 2 Solving Inequalities 3 Graphing Inequalities 1 Graphing Inequalities 2 Graphing Inequalities 3	Inequalities Equations and Inequalities
Reasoning with Equations and Inequalities	Solve systems of equations.	A.REI.5	Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.	Under review	Under review	Equations and Inequalities
Reasoning with Equations and Inequalities	Solve systems of equations.	A.REI.6	Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.	Solving Linear Equations and Systems	Solve Systems by Graphing Simultaneous Linear Equations Breakeven Point Simultaneous Equations 1 Simultaneous Equations 2	Equations and Inequalities
Reasoning with Equations and Inequalities	Represent and solve equations and inequalities graphically.	A.REI.10	Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).	Writing and Graphing Linear Equations	Reading Values from a Line	Under review

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Integrated Math I

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Algebra						
Reasoning with Equations and Inequalities	Represent and solve equations and inequalities graphically.	A.REI.11	Explain why the x-coordinates of the points where the graphs of the equations $y=f(x)$ and $y=g(x)$ intersect are the solutions of the equation $f(x)=g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.	Under review	Under review	Under review
Reasoning with Equations and Inequalities	Represent and solve equations and inequalities graphically.	A.REI.12	Graph the solutions to a linear inequality in two variables as a halfplane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.	Linear Inequalities	Linear Regions Intersecting Linear Regions	Under review
Conceptual Category: Functions						
Interpreting Functions	Understand the concept of a function and use function notation.	F.IF.1	Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x. The graph of f is the graph of the equation $y = f(x)$.	Functions and Sequences	Function Rules and Tables	Functions
Interpreting Functions	Understand the concept of a function and use function notation.	F.IF.2	Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.	Functions and Sequences	Function Notation 1 Function Notation 2 Function Notation 3	Functions

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Functions						
Interpreting Functions	Understand the concept of a function and use function notation.	F.IF.3	Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. *For example, the Fibonacci sequence is defined recursively by* $f(0)=f(1)=1, f(n+1)=f(n)+f(n-1)$ *for* $n \geq 1$.	Functions and Sequences	Terms: Arithmetic Progressions Terms: Geometric Progressions 1 Terms: Geometric Progressions 2	Sequences & Series: Arithmetic Sequences & Series: Geometric
Interpreting Functions	Interpret functions that arise in applications in terms of a context.	F.IF.4	For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. *Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.*	Writing and Graphing Linear Equations	Intercepts Slope of a Line $y=ax$ Gradients for Real	Linear Relationships
Interpreting Functions	Interpret functions that arise in applications in terms of a context.	F.IF.5	Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. *For example, if the function* $h(n)$ *gives the number of person-hours it takes to assemble* n *engines in a factory, then the positive integers would be an appropriate domain for the function.*	Under review	Under review	Functions
Interpreting Functions	Interpret functions that arise in applications in terms of the context.	F.IF.6	Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.	Writing and Graphing Linear Equations	Equation from Two Points	Under review

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Integrated Math I

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Functions						
Interpreting Functions	Analyze functions using different representations.	F.IF.7.a	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. Graph linear and quadratic functions and show intercepts, maxima, and minima.	Writing and Graphing Linear Equations	Which Straight Line?	Linear Relationships
Interpreting Functions	Analyze functions using different representations.	F.IF.7.e	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.	Exponential Equations and Functions	Graphing Exponentials	Exponential and Power Graphs
Interpreting Functions	Analyze functions using different representations.	F.IF.9	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.	Under review	Under review	Linear Relationships Exponential and Power Graphs
Building Functions	Build a function that models a relationship between two quantities.	F.BF.1.a	Write a function that describes a relationship between two quantities. Determine an explicit expression, a recursive process, or steps for calculation from a context.	Writing and Graphing Linear Equations	Modeling Linear Relationships	Under review
Building Functions	Build a function that models a relationship between two quantities.	F.BF.1.a	Write a function that describes a relationship between two quantities. Determine an explicit expression, a recursive process, or steps for calculation from a context.	Exponential Equations and Functions	Compound Interest Compound Interest by Formula Depreciation Declining Balance Depreciation	Depreciation Interest

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Integrated Math I

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Functions						
Building Functions	Build a function that models a relationship between two quantities.	F.BF.1.b	Write a function that describes a relationship between two quantities. Combine standard function types using arithmetic operations. *For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.*	Under review	Under review	Under review
Building Functions	Build a function that models a relationship between two quantities.	F.BF.2	Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms.	Functions and Sequences	Table of Values Terms: Arithmetic Progressions Terms: Geometric Progressions 1 Terms: Geometric Progressions 2 Linear Expression for the Nth Term	Sequences & Series: Arithmetic Sequences & Series: Geometric
Building Functions	Build new functions from existing functions.	F.BF.3	Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k\,f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. *Include recognizing even and odd functions from their graphs and algebraic expressions for them.*	Writing and Graphing Linear Equations	Vertical and horizontal shift	Exponential and Power Graphs Functions
Linear, Quadratic, and Exponential Models	Construct and compare linear, quadratic, and exponential models and solve problems.	F.LE.1.a	Distinguish between situations that can be modeled with linear functions and with exponential functions. Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.	Under review	Under review	Sequences & Series: Arithmetic Sequences & Series: Geometric

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Functions						
Linear, Quadratic, and Exponential Models	Construct and compare linear, quadratic, and exponential models and solve problems.	F.LE.1.b	Distinguish between situations that can be modeled with linear functions and with exponential functions. Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.	Functions and Sequences	Terms: Arithmetic Progressions	Straight Lines Sequences & Series: Arithmetic
Linear, Quadratic, and Exponential Models	Construct and compare linear, quadratic, and exponential models and solve problems.	F.LE.1.c	Distinguish between situations that can be modeled with linear functions and with exponential functions. Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.	Functions and Sequences	Terms: Geometric Progressions 1 Terms: Geometric Progressions 2	Depreciation Interest Sequences & Series: Geometric
Linear, Quadratic, and Exponential Models	Construct and compare linear, quadratic, and exponential models and solve problems.	F.LE.2	Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).	Functions and Sequences	Find the Function Rule	Sequences & Series: Arithmetic
Linear, Quadratic, and Exponential Models	Construct and compare linear, quadratic, and exponential models and solve problems.	F.LE.2	Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).	Writing and Graphing Linear Equations	Equations to Solve Problems Writing Equations Write an Equation: Word Problems Equation from Two Points Equation of a Line 1 Modeling Linear Relationships	Under review
Linear, Quadratic, and Exponential Models	Construct and compare linear, quadratic, and exponential models and solve problems.	F.LE.2	Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).	Functions and Sequences	Terms: Geometric Progressions 2	Depreciation Interest Sequences & Series: Geometric

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Integrated Math I

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Functions						
Linear, Quadratic, and Exponential Models	Construct and compare linear, quadratic, and exponential models and solve problems.	F.LE.3	Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.	Under review	Under review	Under review
Linear, Quadratic, and Exponential Models	Interpret expressions for functions in terms of the situation they model.	F.LE.5	Interpret the parameters in a linear or exponential function in terms of a context.	Writing and Graphing Linear Equations	Gradients for Real	Under review
Conceptual Category: Geometry						
Congruence	Experiment with transformations in the plane.	G.CO.1	Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.	Line and Angle Basics	What Line Am I? Classifying Angles Labelling Angles Angles in a Revolution	Under review
Congruence	Experiment with transformations in the plane.	G.CO.2	Represent transformations in the plane using, e.g., transparencies and geometry software; describe transformations as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch).	Rigid Transformations	Transformations Transformations: Coordinate Plane Rotations: Coordinate Plane	Under review
Congruence	Experiment with transformations in the plane.	G.CO.3	Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself.	Rigid Transformations	Symmetry or Not? Rotational Symmetry	Under review

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Integrated Math I

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Geometry						
Congruence	Experiment with transformations in the plane.	G.CO.4	Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.	Under review	Under review	Under review
Congruence	Experiment with transformations in the plane.	G.CO.5	Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another.	Under review	Under review	Under review
Congruence	Understand congruence in terms of rigid motions.	G.CO.6	Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.	Rigid Transformations	Congruent Figures (Grid) Congruent Figures (Dots)	Under review
Congruence	Understand congruence in terms of rigid motions.	G.CO.7	Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.	Rigid Transformations	Congruent Triangles	Similarity and Congruence
Congruence	Understand congruence in terms of rigid motions.	G.CO.8	Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.	Under review	Under review	Similarity and Congruence

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Integrated Math I

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Geometry						
Congruence	Make geometric constructions.	G.CO.12	Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). *Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.*	Under review	Under review	Constructions
Congruence	Make geometric constructions.	G.CO.13	Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle.	Under review	Under review	Constructions
Expressing Geometric Properties with Equations	Use coordinates to prove simple geometric theorems algebraically.	G.GPE.4	Use coordinates to prove simple geometric theorems algebraically. *For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point (1, √3) lies on the circle centered at the origin and containing the point (0, 2).*	Connecting Geometry and Algebra	Coordinate Methods in Geometry Perpendicular Distance 1 Perpendicular Distance 2	Coordinate Geometry
Expressing Geometric Properties with Equations	Use coordinates to prove simple geometric theorems algebraically.	G.GPE.5	Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).	Connecting Geometry and Algebra	Are they Parallel? Are they Perpendicular? Perpendicular and Parallel Lines Equation of a Line 3	Linear Relationships Straight Lines
Expressing Geometric Properties with Equations	Use coordinates to prove simple geometric theorems algebraically.	G.GPE.7	Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.	Connecting Geometry and Algebra	Distance Between Two Points	Coordinate Geometry

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Integrated Math I

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Statistics and Probability						
Interpreting Categorical and Quantitative Data	Summarize, represent, and interpret data on a single count or measurement variable	S.ID.1	Represent data with plots on the real number line (dot plots, histograms, and box plots).	Descriptive Statistics	Dot Plots Histograms Box-and-Whisker Plots 1 Box-and-Whisker Plots 2	Data Interpreting Data
Interpreting Categorical and Quantitative Data	Summarize, represent, and interpret data on a single count or measurement variable	S.ID.2	Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.	Descriptive Statistics	Mean Mean 1 Median Median 1 Mode Calculating Interquartile Range Calculating Standard Deviation Interpreting Standard Deviation	Data Interpreting Data
Interpreting Categorical and Quantitative Data	Summarize, represent, and interpret data on a single count or measurement variable	S.ID.3	Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).	Descriptive Statistics	Skewness of Data	Interpreting Data
Interpreting Categorical and Quantitative Data	Summarize, represent, and interpret data on two categorical and quantitative variables	S.ID.5	Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data.	Under review	Under review	Under review

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Integrated Math I

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Statistics and Probability						
Interpreting Categorical and Quantitative Data	Summarize, represent, and interpret data on two categorical and quantitative variables	S.ID.6.a	Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. Fit a function to the data; use functions fitted to data to solve problems in the context of the data. *Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models.*	Under review	Under review	Under review
Interpreting Categorical and Quantitative Data	Summarize, represent, and interpret data on two categorical and quantitative variables	S.ID.6.b	Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. Informally assess the fit of a function by plotting and analyzing residuals.	Under review	Under review	Under review
Interpreting Categorical and Quantitative Data	Summarize, represent, and interpret data on two categorical and quantitative variables	S.ID.6.c	Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. Fit a linear function for a scatter plot that suggests a linear association.	Descriptive Statistics	Scatter Plots	Under review
Interpreting Categorical and Quantitative Data	Interpret linear models.	S.ID.7	Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.	Under review	Under review	Under review
Interpreting Categorical and Quantitative Data	Interpret linear models.	S.ID.8	Compute (using technology) and interpret the correlation coefficient of a linear fit.	Descriptive Statistics	Correlation	Under review
Interpreting Categorical and Quantitative Data	Interpret linear models.	S.ID.9	Distinguish between correlation and causation.	Under review	Under review	Under review

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Integrated Math II

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Number and Quantity						
The Real Number System	Extend the properties of exponents to rational exponents.	N.RN.1	Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. *For example, we define $5^{1/3}$ to be the cube root of 5 because we want $(5^{1/3})^3=5^{(1/3)3}$ to hold, so $(5^{1/3})^3$ must equal 5.*	Exponents	Fractional Exponents Irrational Number to Exponent Form Zero Exponents and Algebra	Radicals and Exponents Exponents
The Real Number System	Extend the properties of exponents to rational exponents.	N.RN.2	Rewrite expressions involving radicals and rational exponents using the properties of exponents.	Exponents	Fractional Exponents Irrational Number to Exponent Form Zero Exponents and Algebra Simplifying with Exponent Laws 1 Simplifying with Exponent Laws 2 Multiplication with Exponents Exponent Laws and Algebra Exponent Laws with Brackets	Radicals and Exponents Exponents
The Real Number System	Use properties of rational and irrational numbers.	N.RN.3	Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational.	Irrational Numbers	Adding and Subtracting Irrational Numbers Multiplying Irrational Numbers Expanding Binomial Irrational Numbers	Under review
The Complex Number System	Perform arithmetic operations with complex numbers.	N.CN.1	Know there is a complex number i such that $i^2=-1$, and every complex number has the form $a + b^i$ with a and b real.	Complex Numbers	Introduction to Complex Numbers	Under review

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Integrated Math II

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Number and Quantity						
The Complex Number System	Perform arithmetic operations with complex numbers.	N.CN.2	Use the relation $i^2=-1$ and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers.	Complex Numbers	Powers of i Adding Complex Numbers Subtracting Complex Numbers Complex Multiplication	Under review
The Complex Number System	Use complex numbers in polynomial identities and equations.	N.CN.7	Solve quadratic equations with real coefficients that have complex solutions.	Under review	Under review	Under review
The Complex Number System	Use complex numbers in polynomial identities and equations.	N.CN.8	Extend polynomial identities to the complex numbers. *For example, rewrite $x^2 + 4$ as $(x + 2i)(x - 2i)$.*	Under review	Under review	Under review
The Complex Number System	Use complex numbers in polynomial identities and equations.	N.CN.9	Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials.	Under review	Under review	Under review
Conceptual Category: Algebra						
Seeing Structure in Expressions	Interpret the structure of expressions.	A.SSE.1.a	Interpret expressions that represent a quantity in terms of its context. Interpret parts of an expression, such as terms, factors, and coefficients.	Quadratic Functions and Equations	Vertex of a Parabola	Parabolas
Seeing Structure in Expressions	Interpret the structure of expressions.	A.SSE.1.b	Interpret expressions that represent a quantity in terms of its context. Interpret complicated expressions by viewing one or more of their parts as a single entity. *For example, interpret $P(1 + r)^n$ as the product of P and a factor not depending on P.*	Quadratic Functions and Equations	The Discriminant Constructing Formulae Equations Reducible to Quadratics	Under review

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Algebra						
Seeing Structure in Expressions	Interpret the structure of expressions.	A.SSE.1.b	Interpret expressions that represent a quantity in terms of its context. Interpret complicated expressions by viewing one or more of their parts as a single entity. *For example, interpret $P(1 + r)^n$ as the product of P and a factor not depending on P.*	Exponents	Fractional Exponents Compound Interest by Formula Depreciation Declining Balance Depreciation	Geometric Series in Finance
Seeing Structure in Expressions	Interpret the structure of expressions.	A.SSE.2	Use the structure of an expression to identify ways to rewrite it. For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$.	Quadratic Functions and Equations	Factoring Quadratics 1 Factoring Quadratics 2 Equations Reducible to Quadratics	Expanding and Factorizing
Seeing Structure in Expressions	Write expressions in equivalent forms to solve problems.	A.SSE.3.a	Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. Factor a quadratic expression to reveal the zeros of the function it defines.	Solving Quadratic Equations	Highest Common Algebraic Factor Factoring Quadratics 1 Factoring Quadratics 2 Grouping in Pairs	Quadratic Equations
Seeing Structure in Expressions	Write expressions in equivalent forms to solve problems.	A.SSE.3.b	Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.	Quadratic Functions and Equations	Completing the Square Completing the Square 2 Vertex of a Parabola	Quadratic Equations
Seeing Structure in Expressions	Write expressions in equivalent forms to solve problems.	A.SSE.3.c	Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. Use the properties of exponents to transform expressions for exponential functions. *For example the expression 1.15^t can be rewritten as $(1.15^{1/12})^{12t} \approx 1.012^{12t}$ to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.*	Under review	Under review	Under review

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Algebra						
Arithmetic with Polynomials and Rational Expressions	Perform arithmetic operations on polynomials.	A.APR.1	Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.	Polynomial Arithmetic	Like Terms: Add and Subtract Simplifying Expressions Algebraic Fractions 1 Algebraic Fractions 2 Algebraic Multiplication Expand then Simplify Expanding Brackets Expanding Binomial Products Special Binomial Products Multiplication with Exponents	Polynomials Equations Expanding and Factorizing Simplifying Algebra Binomials and Pascal's Triangle
Creating Equations	Create equations that describe numbers or relationships.	A.CED.1	Create equations and inequalities in one variable and use them to solve problems. *Include equations arising from linear and quadratic functions, and simple rational and exponential functions.*	Quadratic Functions and Equations	Constructing Formulae	Quadratic Equations
Creating Equations	Create equations that describe numbers or relationships.	A.CED.1	Create equations and inequalities in one variable and use them to solve problems. *Include equations arising from linear and quadratic functions, and simple rational and exponential functions.*	Exponents	Compound Interest by Formula Depreciation Declining Balance Depreciation	"Depreciation Interest"
Creating Equations	Create equations that describe numbers or relationships.	A.CED.2	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.	Exponents	Graphing Exponentials	Exponential and Power Graphs
Creating Equations	Create equations that describe numbers or relationships.	A.CED.2	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.	Quadratic Functions and Equations	Vertex of a Parabola Graphing Parabolas Constructing Formulae	Parabolas

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Algebra						
Creating Equations	Create equations that describe numbers or relationships.	A.CED.4	Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. *For example, rearrange Ohm's law $V=IR$ to highlight resistance R.*	Functions	Changing the Subject	Linear Relationships Depreciation
Reasoning with Equations and Inequalities	Solve equations and inequalities in one variable.	A.REI.4.a.	Solve quadratic equations in one variable. Use the method of completing the square to transform any quadratic equation in x into an equation of the form $(x - p)^2=q$ that has the same solutions. Derive the quadratic formula from this form.	Solving Quadratic Equations	Quadratic Equations 1 Quadratic Equations 2	Quadratic Equations
Reasoning with Equations and Inequalities	Solve equations and inequalities in one variable.	A.REI.4.b	Solve quadratic equations in one variable. Solve quadratic equations by inspection (e.g., for $x^2=49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as $a \pm bi$ for real numbers a and b.	Solving Quadratic Equations	Quadratic Equations 1 Quadratic Equations 2 Quadratic Formula The Discriminant Factoring Quadratics 1 Factoring Quadratics 2 Checking Quadratic Equations	Equations and Inequalities Factorizing Quadratic Equations
Reasoning with Equations and Inequalities	Solve systems of equations.	A.REI.7	Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. For example, find the points of intersection between the line $y=-3x$ and the circle $x^2 + y^2=3$.	Linear and Quadratic Systems	Intersection: Line & Parabola Simultaneous Equations 3 Intersection: Line & Circle	Quadratic Equations

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Functions						
Interpreting Functions	Interpret functions that arise in applications in terms of a context.	F.IF.4	For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. *Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.*	Quadratic Functions and Equations	Vertex of a Parabola Graphing Parabolas Parabolas and Rectangles Parabolas and Marbles	Parabolas
Interpreting Functions	Interpret functions that arise in applications in terms of a context.	F.IF.5	Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. *For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.*	Functions	Domain Domain and Range	Functions
Interpreting Functions	Interpret functions that arise in applications in terms of the context.	F.IF.6	Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.	Functions	Equation from Two Points	Under review
Interpreting Functions	Analyze functions using different representations.	F.IF.7.a	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. Graph linear and quadratic functions and show intercepts, maxima, and minima.	Quadratic Functions and Equations	Graphing Parabolas	Parabolas
Interpreting Functions	Analyze functions using different representations.	F.IF.7.b	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.	Absolute Value, Step, and Piecewise	Absolute Value Graphs Step Graphs Piecemeal Functions	Under review

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Functions						
Interpreting Functions	Analyze functions using different representations.	F.IF.8.a	Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context.	Quadratic Functions and Equations	Factoring Quadratics 1 Factoring Quadratics 2 Grouping in Pairs Completing the Square Completing the Square 2 Vertex of a Parabola	Factorizing Parabolas Quadratic Equations
Interpreting Functions	Analyze functions using different representations.	F.IF.8.b	Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. Use the properties of exponents to interpret expressions for exponential functions. *For example, identify percent rate of change in functions such as* $y=(1.02)^t$, $y=(0.97)^t$, $y=(1.01)^{12t}$, $y=(1.2)^{t/10}$, *and classify them as representing exponential growth or decay.*	Exponents	Multiplication with Exponents Fractional Exponents	Under review
Interpreting Functions	Analyze functions using different representations.	F.IF.9	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.*	Under review	Under review	Linear Relationships Exponential and Power Graphs
Building Functions	Build a function that models a relationship between two quantities.	F.BF.1.a	Write a function that describes a relationship between two quantities. Determine an explicit expression, a recursive process, or steps for calculation from a context.	Exponents	Compound Interest by Formula Depreciation Declining Balance Depreciation	Depreciation Interest
Building Functions	Build a function that models a relationship between two quantities.	F.BF.1.a	Write a function that describes a relationship between two quantities. Determine an explicit expression, a recursive process, or steps for calculation from a context.	Quadratic Functions and Equations	Constructing Formulae	Parabolas

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Functions						
Building Functions	Build a function that models a relationship between two quantities.	F.BF.1.b	Write a function that describes a relationship between two quantities. Combine standard function types using arithmetic operations. *For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.*	Under review	Under review	Under review
Building Functions	Build new functions from existing functions.	F.BF.3	Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k\,f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. *Include recognizing even and odd functions from their graphs and algebraic expressions for them.*	Functions	Vertical and horizontal shift Symmetries of Graphs 1 Odd and Even Functions	Functions Parabolas Sketching Polynomials
Building Functions	Build new functions from existing functions.	F.BF.4.a	Find inverse functions. Solve an equation of the form $f(x)=c$ for a simple function f that has an inverse and write an expression for the inverse. For example, $f(x)=2x^3$ or $f(x)=(x + 1)/(x - 1)$ for $x\neq1$.	Functions	Inverse Functions	Functions
Linear, Quadratic, and Exponential Models	Construct and compare linear, quadratic, and exponential models and solve problems.	F.LE.3	Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.	Under review	Under review	Under review
Trigonometric Functions	Prove and apply trigonometric identities.	F.FT.8	Prove the Pythagorean identity $\sin^2(\theta) + \cos^2(\theta)=1$ and use it to find $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ given $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ and the quadrant of the angle.	Under review	Under review	Under review

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Integrated Math II

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Geometry						
Congruence	Prove Geometric Theorems	G.CO.9	Prove theorems about lines and angles. *Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.*	Similarity, Congruence, and Theorems	Angles and Parallel Lines Parallel Lines	Under review
Congruence	Prove Geometric Theorems	G.CO.10	Prove theorems about triangles. *Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.*	Similarity, Congruence, and Theorems	Angle Measures in a Triangle Plane Figure Theorems Ratio of Intercepts	Polygons and Angles
Congruence	Prove geometric theorems.	G.CO.11	Prove theorems about parallelograms. *Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.*	Similarity, Congruence, and Theorems	Plane Figure Theorems	Under review
Similarity, Right Triangles, and Trigonometry	Understand similarity in terms of similarity transformations.	G.SRT.1.a	Verify experimentally the properties of dilations given by a center and a scale factor: a. A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged.	Under review	Under review	Under review
Similarity, Right Triangles, and Trigonometry	Understand similarity in terms of similarity transformations.	G.SRT.1.b	Verify experimentally the properties of dilations given by a center and a scale factor: b. The dilation of a line segment is longer or shorter in the ratio given by the scale factor.	Similarity, Congruence, and Theorems	Scale Measurement Scale Factor	Under review

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Geometry						
Similarity, Right Triangles, and Trigonometry	Understand similarity in terms of similarity transformations.	G.SRT.2	Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.	Similarity, Congruence, and Theorems	Similar Figures 1	Similarity and Congruence
Similarity, Right Triangles, and Trigonometry	Understand similarity in terms of similarity transformations.	G.SRT.3	Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar.	Similarity, Congruence, and Theorems	Similarity Proofs	Similarity and Congruence
Similarity, Right Triangles, and Trigonometry	Prove theorems involving similarity.	G.SRT.4	Prove theorems about triangles. *Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.*	Similarity, Congruence, and Theorems	Ratio of Intercepts	Under review
Similarity, Right Triangles, and Trigonometry	Prove theorems involving similarity.	G.SRT.5	Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.	Similarity, Congruence, and Theorems	Similar Figures Using Similar Triangles Using Similar Triangles 1	Similarity and Congruence
Similarity, Right Triangles, and Trigonometry	Define trigonometric ratios and solve problems involving right triangles.	G.SRT.6	Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.	Trigonometry	Exact Trigonometric Ratios Sin A Cos A Tan A	Trigonometry
Similarity, Right Triangles, and Trigonometry	Define trigonometric ratios and solve problems involving right triangles.	G.SRT.7	Explain and use the relationship between the sine and cosine of complementary angles.	Under review	Under review	Trigonometric Relationships
Similarity, Right Triangles, and Trigonometry	Define trigonometric ratios and solve problems involving right triangles.	G.SRT.8	Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.	Trigonometry	Find Unknown Sides Find Unknown Angles Elevation and Depression Trigonometry Problems 2	Pythagorean Theorem Trigonometry

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Geometry						
Circles	Understand and apply theorems about circles.	G.C.1	Prove that all circles are similar.	Under review	Under review	Under review
Circles	Understand and apply theorems about circles.	G.C.2	Identify and describe relationships among inscribed angles, radii, and chords. *Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.*	Circles and Parabolas	Circle Theorem Tangents and Secants	Tangents and Secants Chords and Angles
Circles	Understand and apply theorems about circles.	G.C.3	Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle.	Under review	Under review	Constructions
Circles	Understand and apply theorems about circles.	G.C.4	Construct a tangent line from a point outside a given circle to the circle.	Under review	Under review	Constructions
Circles	Find arc lengths and areas of sectors of circles.	G.C.5	Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector.	Circles and Parabolas	Converting Radians and Degrees Perimeter and Circles Arc Length Length of an Arc Area of a Sector (degrees and radians)	Perimeter and Area
Expressing Geometric Properties with Equations	Translate between the geometric description and the equation for a conic section.	G.GPE.1	Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation.	Circles and Parabolas	Centre and Radius 1 Centre and Radius 2	Circle Graphs
Expressing Geometric Properties with Equations	Translate between the geometric description and the equation for a conic section.	G.GPE.2	Derive the equation of a parabola given a focus and directrix.	Circles and Parabolas	Focus and Directrix 1 Focus and Directrix 2 Focus and Directrix 3 Focus and Directrix 4	

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Geometry						
Expressing Geometric Properties with Equations	Use coordinates to prove simple geometric theorems algebraically.	G.GPE.4	Use coordinates to prove simple geometric theorems algebraically. *For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point (1, √3) lies on the circle centered at the origin and containing the point (0, 2).*	Circles and Parabolas	Centre and Radius 1 Centre and Radius 2 Focus and Directrix 1 Focus and Directrix 2 Focus and Directrix 3 Focus and Directrix 4	Coordinate Geometry Circle Graphs
Expressing Geometric Properties with Equations	Use coordinates to prove simple geometric theorems algebraically.	G.GPE.6	Find the point on a directed line segment between two given points that partitions the segment in a given ratio.	Similarity, Congruence, and Theorems	Midpoint by Formula	Coordinate Geometry
Geometric Measurement and Dimension	Explain volume formulas and use them to solve problems.	G.GMD.1	Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. *Use dissection arguments, Cavalieri's principle, and informal limit arguments.*	Under review	Under review	Under review
Geometric Measurement and Dimension	Explain volume formulas and use them to solve problems.	G.GMD.3	Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.	Three-Dimensional Figures	Volume: Cylinders Volume: Pyramids Volume: Cones Volume: Spheres Volume Composite Figures Volume: Rearrange Formula	Measuring Solids
Conceptual Category: Statistics and Probability						
Conditional Probability and the Rules of Probability	Understand independence and conditional probability and use them to interpret data.	S.CP.1	Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events ("or," "and," "not").	Probability	Venn Diagrams Probability - 'And' and 'Or'	Probability

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Statistics and Probability						
Conditional Probability and the Rules of Probability	Understand independence and conditional probability and use them to interpret data.	S.CP.2	Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent.	Under review	Under review	Probability
Conditional Probability and the Rules of Probability	Understand independence and conditional probability and use them to interpret data.	S.CP.3	Understand the conditional probability of A given B as $P(A \text{ and } B)/P(B)$, and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B.	Probability	Conditional Probability	Under review
Conditional Probability and the Rules of Probability	Understand independence and conditional probability and use them to interpret data.	S.CP.4	Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. *For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results.*	Probability	Two-way Table Probability Probability Tables	Probability
Conditional Probability and the Rules of Probability	Understand independence and conditional probability and use them to interpret data.	S.CP.5	Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. *For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer.*	Under review	Under review	Under review

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Statistics and Probability						
Conditional Probability and the Rules of Probability	Use the rules of probability to compute probabilities of compound events in a uniform probability model.	S.CP.6	Find the conditional probability of A given B as the fraction of B's outcomes that also belong to A, and interpret the answer in terms of the model.	Probability	Conditional probability	Under review
Conditional Probability and the Rules of Probability	Use the rules of probability to compute probabilities of compound events in a uniform probability model.	S.CP.7	Apply the Addition Rule, $P(A \text{ or } B)=P(A) + P(B) - P(A \text{ and } B)$, and interpret the answer in terms of the model.	Probability	Probability - 'And' and 'Or'	Under review
Conditional Probability and the Rules of Probability	Use the rules of probability to compute probabilities of compound events in a uniform probability model.	S.CP.8	Apply the general Multiplication Rule in a uniform probability model, $P(A \text{ and } B)=P(A)P(B \mid A)$ $=P(B)P(A \mid B)$, and interpret the answer in terms of the model.	Probability	Probability Without Replacement	Under review
Conditional Probability and the Rules of Probability	Use the rules of probability to compute probabilities of compound events in a uniform probability model.	S.CP.9	Use permutations and combinations to compute probabilities of compound events and solve problems.	Probability	Counting Techniques 1 Counting Techniques 2 Introduction to Permutations and Combinations Permutations and Probability Combinations and Probability	Under review
Using Probability to Make Decisions	Use probability to evaluate outcomes of decisions.	S.MD.6	Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator).	Probability	Fair Games	Under review
Using Probability to Make Decisions	Use probability to evaluate outcomes of decisions.	S.MD.7	Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game).	Under review	Under review	Under review

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Integrated Math III

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Number and Quantity						
The Complex Number System	Use complex numbers in polynomial identities and equations.	N.CN.8	Extend polynomial identities to the complex numbers. *For example, rewrite $x^2 + 4$ as $(x + 2i)(x - 2i)$.*	Solving Higher Order Equations	Complex Conjugate	Under review
The Complex Number System	Use complex numbers in polynomial identities and equations.	N.CN.9	Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials.	Under review	Under review	Under review
Conceptual Category: Algebra						
Seeing Structure in Expressions	Interpret the structure of expressions.	A.SSE.1.a	Interpret expressions that represent a quantity in terms of its context. Interpret parts of an expression, such as terms, factors, and coefficients.	Modeling with Functions	Gradients for Real Exponential Growth and Decay	Sketching Polynomials
				Rational Equations	Vertical and Horizontal Asymptotes	Under review
Seeing Structure in Expressions	Interpret the structure of expressions.	A.SSE.1.b	Interpret expressions that represent a quantity in terms of its context. Interpret complicated expressions by viewing one or more of their parts as a single entity. *For example, interpret $P(1 + r)^n$ as the product of P and a factor not depending on P.*	Solving Higher Order Equations	Factoring Expressions Equations Reducible to Quadratics	Geometric Series in Finance
Seeing Structure in Expressions	Interpret the structure of expressions.	A.SSE.2	Use the structure of an expression to identify ways to rewrite it. *For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$.*	Solving Higher Order Equations	Equations Reducible to Quadratics	Factorizing
				Polynomial Arithmetic	Polynomial Long Division Simplifying Binomial Expressions	Factorizing

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Integrated Math III

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Algebra						
Seeing Structure in Expressions	Write expressions in equivalent forms to solve problems.	A.SSE.4	Derive the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems. *For example, calculate mortgage payments.*	Sequences and Series	Sum: Geometric Progressions Sigma Notation 1 Sigma Notation 2	Sequences & Series: Geometric Geometric Series and Loan Repayments Geometric Series in Finance
Arithmetic with Polynomials and Rational Expressions	Perform arithmetic operations on polynomials.	A.APR.1	Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.	Polynomial Arithmetic	Like Terms: Add, Subtract Algebraic Multiplication Multiplication with Exponents Special Binomial Products Expanding Brackets Expand then Simplify Expanding Binomial Products	Polynomials Equations Expanding and Factorizing Simplifying Algebra Binomials and Pascal's Triangle
Arithmetic with Polynomials and Rational Expressions	"Understand the relationship between zeros and factors of polynomials."	A.APR.2	Know and apply the Remainder Theorem: For a polynomial $p(x)$ and a number a, the remainder on division by $x - a$ is $p(a)$, so $p(a)=0$ if and only if $(x - a)$ is a factor of $p(x)$.	Solving Higher Order Equations	Polynomial Factor Theorem	Polynomials
Arithmetic with Polynomials and Rational Expressions	"Understand the relationship between zeros and factors of polynomials."	A.APR.3	Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial.	Solving Higher Order Equations	Factoring Expressions Equations Reducible to Quadratics Polynomial Factor Theorem Graphing Cubics	Factorizing Polynomials Sketching Polynomials
Arithmetic with Polynomials and Rational Expressions	Use polynomial identities to solve problems.	A.APR.4	Prove polynomial identities and use them to describe numerical relationships. *E20*	Solving Higher Order Equations	Equations Reducible to Quadratics	Factorizing

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Integrated Math III

Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Algebra						
Arithmetic with Polynomials and Rational Expressions	Use polynomial identities to solve problems.	A.APR.5	Know and apply the Binomial Theorem for the expansion of $(x + y)^n$ in powers of x and y for a positive integer n, where x and y are any numbers, with coefficients determined for example by Pascal's Triangle.	Polynomial Arithmetic	Pascal's Triangle, Expansion	The Binomial Theorem Binomials and Pascal's Triangle
Arithmetic with Polynomials and Rational Expressions	Rewrite rational expressions.	A.APR.6	Rewrite simple rational expressions in different forms; write $a(x)/b(x)$ in the form $q(x) + r(x)/b(x)$, where $a(x)$, $b(x)$, $q(x)$, and $r(x)$ are polynomials with the degree of $r(x)$ less than the degree of $b(x)$, using inspection, long division, or, for the more complicated examples, a computer algebra system.	Polynomial Arithmetic	Polynomial Long Division Simplifying Binomial Expressions	Polynomials
Arithmetic with Polynomials and Rational Expressions	Rewrite rational expressions.	A.APR.7	Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions.	Rational Equations	Algebraic Fractions 2 Algebraic Fractions 3 Factoring and Fractions 1 Factoring and Fractions 2	Factorizing
Creating Equations	Create equations that describe numbers or relationships.	A.CED.1	Create equations and inequalities in one variable and use them to solve problems. *Include equations arising from linear and quadratic functions, and simple rational and exponential functions.*	Modeling with Functions	Write an Equation: Word Problems	Under review
Creating Equations	Create equations that describe numbers or relationships.	A.CED.2	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.	Modeling with Functions	$y=ax$ Find the Function Rule Modeling Linear Relationships Linear Modeling Parabolas and Marbles Parabolas and Rectangles Constructing Formulae	Under review

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Algebra						
Creating Equations	Create equations that describe numbers or relationships.	A.CED.3	Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. *For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.*	Under review	Under review	Under review
Creating Equations	Create equations that describe numbers or relationships.	A.CED.4	Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. *For example, rearrange Ohm's law $V=IR$ to highlight resistance R.*	Inverse Functions	Inverse Functions Graphing Inverse Functions	Functions
Reasoning with Equations and Inequalities	Understand solving equations as a process of reasoning and explain the reasoning.	A.REI.2	Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.	Radical Equations	Equations with Square Roots Equations with Cube Roots	Under review
Reasoning with Equations and Inequalities	Represent and solve equations and inequalities graphically.	A.REI.11	Explain why the x-coordinates of the points where the graphs of the equations $y=f(x)$ and $y=g(x)$ intersect are the solutions of the equation $f(x)=g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.	Solving Higher Order Equations	Solve Systems by Graphing	Under review

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Functions						
Interpreting Functions	Interpret functions that arise in applications in terms of a context.	F.IF.4	For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. *Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.*	Modeling with Functions	Gradients for Real Parabolas and Marbles Parabolas and Rectangles	Sketching Polynomials
Interpreting Functions	Interpret functions that arise in applications in terms of a context.	F.IF.5	Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. *For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.*	Modeling with Functions	Domain Domain and Range	Functions
Interpreting Functions	Interpret functions that arise in applications in terms of the context.	F.IF.6	Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.	Modeling with Functions	Equation from Two Points	Under review
Interpreting Functions	Analyze functions using different representations.	F.IF.7.b	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.	Inverse Functions	Graph Inverse Functions	Under review
				Modeling with Functions	Absolute Value Graphs Piecemeal Functions Step Graphs	Under review

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Functions						
Interpreting Functions	Analyze functions using different representations.	F.IF.7.c	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.	Solving Higher Order Equations	Graphing Cubics	Sketching Polynomials
Interpreting Functions	Analyze functions using different representations.	F.IF.7.e	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.	Trigonometry	Sine and Cosine Curves Trig Graphs in Radians Graph Inverse Trig Functions	Trigonometric Relationships
				Exponents and Logarithms	Graphing Exponentials Exponential or Log Graph?	Exponential and Power Graphs Logarithms Simple Nonlinear Graphs
Interpreting Functions	Analyze functions using different representations.	F.IF.8.a	Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context.	Polynomial Arithmetic	Polynomial Long Division Simplifying Binomial Expressions	Factorizing Polynomials Sketching Polynomials
Interpreting Functions	Analyze functions using different representations.	F.IF.8.b	Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. Use the properties of exponents to interpret expressions for exponential functions. *For example, identify percent rate of change in functions such as* $y=(1.02)^t$, $y=(0.97)^t$, $y=(1.01)^{12t}$, $y=(1.2)^{t/10}$, *and classify them as representing exponential growth or decay.*	Exponents and Logarithms	Change of Base	Under review

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Functions						
Interpreting Functions	Analyze functions using different representations.	F.IF.9	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.*	Under review	Under review	Under review
Building Functions	Build a function that models a relationship between two quantities.	F.BF.1.b	Write a function that describes a relationship between two quantities. Combine standard function types using arithmetic operations. *For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.*	Under review	Under review	Under review
Building Functions	Build new functions from existing functions.	F.BF.3	Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k\,f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. *Include recognizing even and odd functions from their graphs and algebraic expressions for them.*	Modeling with Functions	Odd and Even Functions Symmetries of Graphs 1 Vertical and horizontal shift	Exponential and Power Graphs Functions Sketching Polynomials
Building Functions	Build new functions from existing functions.	F.BF.4.a	Find inverse functions. Solve an equation of the form $f(x)=c$ for a simple function f that has an inverse and write an expression for the inverse. For example, $f(x)=2x^3$ or $f(x)=(x + 1)/(x - 1)$ for $x\neq1$.	Inverse Functions	Inverse Functions	Functions

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Conceptual Category: Functions						
Linear, Quadratic, and Exponential Models	Construct and compare linear, quadratic, and exponential models and solve problems.	F.LE.4	For exponential models, express as a logarithm the solution to $ab^{ct}=d$ where a, c, and d are numbers and the base b is 2, 10, or e; evaluate the logarithm using technology.	Exponents and Logarithms	Log Laws Equations with Logs Log Base 'e'	Logarithms
Trigonometric Functions	Extend the domain of trigonometric functions using the unit circle.	F.TF.1	Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle.	Trigonometry	Converting Radians and Degrees Unit Circle Reductions	Under review
Trigonometric Functions	Extend the domain of trigonometric functions using the unit circle.	F.TF.2	Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle.	Trigonometry	Sign of the Angle Unit Circle Reductions Trigonometric Relationships	Trigonometric Relationships
Trigonometric Functions	Model periodic phenomena with trigonometric functions.	F.TF.5	Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.	Trigonometry	Period and Amplitude	Under review
Conceptual Category: Geometry						
Similarity, Right Triangles, and Trigonometry	Apply trigonometry to general triangles.	G.SRT.9	Derive the formula $A=1/2\ ab\ \sin(C)$ for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side.	Trigonometry	Area Rule 1 Area Rule 2 Area Problems	Non Right Angled Triangles
Similarity, Right Triangles, and Trigonometry	Apply trigonometry to general triangles.	G.SRT.10	Prove the Laws of Sines and Cosines and use them to solve problems.	Trigonometry	Sine Rule 1 Cosine Rule 1 Cosine Rule 2	Non Right Angled Triangles
Similarity, Right Triangles, and Trigonometry	Apply trigonometry to general triangles.	G.SRT.11	Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g., surveying problems, resultant forces).	Trigonometry	Sine Rule 1 Cosine Rule 1 Cosine Rule 2	Non Right Angled Triangles

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Geometry						
Geometric Measurement and Dimension	Visualize relationships between two-dimensional and three-dimensional objects.	G.GMD.4	Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.	Three-Dimensional Figures	Relate Shapes and Solids Nets	Under review
Modeling with Geometry	Apply geometric concepts in modeling situations.	G.MG.1	Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).	Three-Dimensional Figures	Match the Solid 2	Measuring Solids
Modeling with Geometry	Apply geometric concepts in modeling situations.	G.MG.2	Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).	Under review	Under review	Under review
Modeling with Geometry	Apply geometric concepts in modeling situations.	G.MG.3	Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).	Trigonometry	Trigonometry Problems 2	Under review
Conceptual Category: Statistics and Probability						
Interpreting Categorical and Quantitative Data	Summarize, represent, and interpret data on a single count or measurement variable	S.ID.4	Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve.	Collecting and Analyzing Data	Normal Distribution Normal Distribution Probability Calculating Standard Deviation Calculating z-scores Comparing z-scores Equivalent z-scores	Interpreting Data
Making Inferences and Justifying Conclusions	Understand and evaluate random processes underlying statistical experiments.	S.IC.1	Understand statistics as a process for making inferences about population parameters based on a random sample from that population.	Collecting and Analyzing Data	Capture Recapture Technique	Under review

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Domain	Cluster	Standard	Description	Topic	Activities	eBooks
Conceptual Category: Statistics and Probability						
Making Inferences and Justifying Conclusions	Understand and evaluate random processes underlying statistical experiments.	S.IC.2	Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation. *For example, a model says a spinning coin falls heads up with probability 0.5. Would a result of 5 tails in a row cause you to question the model?*	Under review	Under review	Under review
Making Inferences and Justifying Conclusions	Make inferences and justify conclusions from sample surveys, experiments, and observational studies.	S.IC.3	Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.	Under review	Under review	Under review
Making Inferences and Justifying Conclusions	Make inferences and justify conclusions from sample surveys, experiments, and observational studies.	S.IC.4	Use data from a sample survey to estimate a population mean or proportion; develop a margin of error through the use of simulation models for random sampling.	Under review	Under review	Under review
Making Inferences and Justifying Conclusions	Make inferences and justify conclusions from sample surveys, experiments, and observational studies.	S.IC.5	Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant.	Under review	Under review	Under review
Making Inferences and Justifying Conclusions	Make inferences and justify conclusions from sample surveys, experiments, and observational studies.	S.IC.6	Evaluate reports based on data.	Under review	Under review	Under review
Using Probability to Make Decisions	Use probability to evaluate outcomes of decisions.	S.MD.6	Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator).	Collecting and Analyzing Data	Fair Games	Under review
Using Probability to Make Decisions	Use probability to evaluate outcomes of decisions.	S.MD.7	Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game).	Under review	Under review	Under review

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