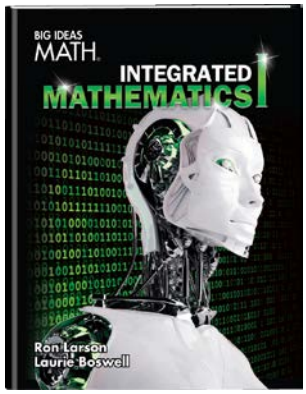
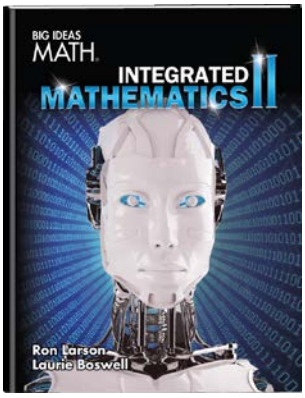
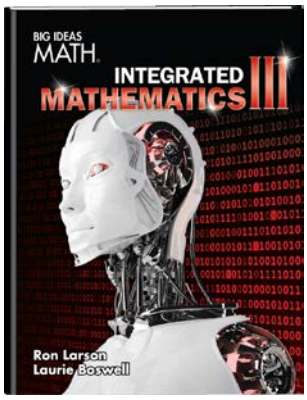
Scope and Sequence







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	Integrated Math I	Integrated Math II	Integrated Math III
Number and Quantity			
The Real Number System (N-RN)			
Properties of exponents to rational exponents			
Properties of exponents		●	◆
Radical notation		●	◆
Properties of rational and irrational numbers			
Sum or product of (non-zero) rational number and irrational number		●	
Sum or product of two rational numbers		●	
Quantities (N-Q)			
Reasoning and units to solve			
Accuracy to limitation on measurement	●		
Data display	●	◆	◆
Graphical display	●	◆	◆
Interpret units in a formula	●	◆	◆
Scale and origin in graph	●	◆	◆
Units to solve multi-step problems	●	◆	◆
The Complex Number System (N-CN)			
Arithmetic operations			
$a+bi$ form of a complex number, a and b real		●	
Add complex numbers		●	
Complex number i such that $i^2=-1$		●	
Conjugate of complex numbers		●	
Multiply complex numbers		●	
Subtract complex numbers		●	
Complex numbers in polynomial identities and equations			
Fundamental Theorem of Algebra		●	◆
Polynomial identities to complex numbers		●	◆
Quadratic equation with real coefficient(s) and complex solution(s)		●	
Algebra			
Seeing Structure in Expressions (A-SSE)			
Function concept and function notations			
Coefficient	●	◆	◆
Factor	●	◆	◆
Product in an expression		●	◆
Rewrite an expression		●	◆
Term	●	◆	◆
Equivalent forms of expressions to solve problems			
Complete the square		●	
Equivalent form production		●	
Properties of exponents: exponential function transformation		●	◆
Properties of exponents: sum of a finite geometric series formula			●
Property of quantity explanation		●	
Quadratic factoring		●	◆

	Integrated Math I	Integrated Math II	Integrated Math III
Arithmetic with Polynomials and Rational Expressions (A-APR)			
Arithmetic operations on polynomials			
Add polynomial expressions		●	◆
Multiply polynomial expressions		●	◆
Subtract polynomial expressions		●	◆
Zeros and factors of polynomials			
Factor to identify zeros		●	◆
Graph construction		●	◆
Remainder Theorem			●
Polynomial identities to solve problems			
Binomial Theorem			●
Polynomial identity proofs to describe numerical relationships			●
Rewrite rational expressions			
Add rational expressions			●
Computer algebra system			●
Divide rational expressions			●
Inspection			●
Long division			●
Multiply rational expressions			●
Rational expressions written in different forms			●
Subtract rational expressions			●
Create Equations (A-CED)			
Describe numbers or relationships			
Constraints by equations or inequalities	●	◆	◆
Constraints by systems of equations or inequalities	●		
Equation in one variable	●	◆	◆
Equation in two or more variables	●	◆	◆
Exponential functions	●		◆
Formula rearrangement to solve for a quantity of interest	●	◆	◆
Graph equations on coordinate axes	●	◆	◆
Inequality in one variable	●		
Linear functions	●		◆
Quadratic functions		●	◆
Rational functions			●
Viable/non-viable solutions for modeling	●	◆	◆
Reasoning with Equations and Inequalities (A-REI)			
Solving equations as a reasoning process			
Construct argument to justify solution method	●	◆	◆
Explain reasoning	●	◆	◆
Radical equation in one variable			●
Rational equation in one variable			●
Solving equations and inequalities in one variable			
Coefficients as a letter	●		

	Integrated Math I	Integrated Math II	Integrated Math III
Complex solutions		●	◆
Factorization		●	◆
Linear equation	●		
Linear inequality	●		
Quadratic equation: by inspection		●	◆
Quadratic equation: complete the square		●	
Quadratic formula		●	◆
System of equations			
Algebraic solution (exact)	●		
Graphical solution (approximate)	●		
Solution for two equations in two variables	●		
System of one linear equation and one quadratic equation		●	
System of two linear equations	●		
Graphical solutions for equations and inequalities			
Absolute value function		●	
Approximate solution from graph	●	◆	
Exponential function	●		◆
Graph on a coordinate plane	●	◆	◆
Intersection(s) as solution(s)	●		
Linear function	●		
Linear inequality solution as a half-plane	●		
Logarithmic function			●
Polynomial function			●
Rational function			●
Solution set to a system of inequalities as intersection of corresponding half-planes	●		
Table of values	●	◆	◆
Functions			
Interpreting Functions (F-IF)			
Function concept and function notations			
Element of the domain, *x*	●		
Element of the range, *f(x)*	●		
Function *f*	●		
Function notation	●		
Graph of *f* for equation *y=f(x)*	●		
Output of *f* corresponds to input *x*	●		
Sequence as a function	●		
Applications in context			
Average rate of change	●	◆	◆
Domain as related to graph	●	◆	◆
End behavior			●
Graph key features	●	◆	◆
Intercepts	●	◆	◆
Interval behavior (increase, decrease)			●
Periodicity			●
Relative maximum(s) and minimum(s)		●	◆
Symmetry		●	◆

	Integrated Math I	Integrated Math II	Integrated Math III
Table key features	●	◆	◆
Function representation by graph			
Absolute value		●	
Compare function represented graphically to algebraically	●	◆	◆
Cube root			●
Exponent properties		●	◆
Exponential	●	◆	◆
Exponential growth or decay	●	◆	◆
Graph key features	●	◆	◆
Linear	●		
Logarithmic			●
Piecewise-defined		●	
Polynomial			●
Quadratic		●	◆
Quadratic function expressed factored, completing the square		●	◆
Square root			●
Trigonometric			●
Building Functions (F-BF)			
Relationship between two quantities			
Arithmetic sequence	●		◆
Calculation from a context	●	◆	◆
Combine function types arithmetically			●
Explicit expression	●	◆	◆
Geometric sequence	●		◆
Recursive process	●	◆	◆
New function from existing function			
Even function		●	◆
Graph effect from change	●	◆	◆
Inverse function expression		●	◆
Odd function		●	◆
Linear, Quadratic, and Exponential Models (F-LE)			
Construct and compare linear, quadratic, exponential models			
Constant percent growth or decay rate of change	●	◆	
Constant rate of change	●	◆	
Exponential function growth exceeds polynomial function growth	●	◆	
Exponential model function growth	●	◆	◆
Function construction from a graph, relationship description, input-output pairs (tables)	●	◆	◆
Linear model function growth	●	◆	
Parameter interpretation	●		
Trigonometric Functions (F-TF)			
Domain from unit circle			
Counterclockwise traversal around unit circle			●

	Integrated Math I	Integrated Math II	Integrated Math III
Radian measure as arc length subtended by an angle in unit circle			●
Unit circle in coordinate plane			●
Periodic phenomena			
Amplitude			●
Frequency			●
Interpret solution			●
Midline			●
Trigonometric identities			
Pythagorean identity proof		●	◆
Pythagorean identity to find trigonometric value		●	◆
Geometry			
Congruence (G-CO)			
Transformations in the plane			
Defined terms: angle, circle, perpendicular line, parallel line, line segment	●	◆	
Definition of rotation, reflection, and translation	●		
Draw transformed figure	●		
Rotation and reflection	●		
Sequence of a transformation	●		
Transformation as a function	●		
Transformation representation	●		
Translation versus stretch	●		
Undefined terms: point, line, distance along a line, distance around a circular arc	●	◆	
Rigid motion congruence			
Determine congruency	●		
Transform a figure	●		
Triangle congruency criteria (ASA, SAS, SSS)	●	◆	
Prove geometric theorems			
Line and angle	●	◆	
Parallelogram		●	
Triangle	●	◆	
Geometric construction			
Compass	●	◆	
Equilateral triangle, square, regular hexagon inscribed in a circle	●	◆	
Paper folding	●		
Reflective devices	●		
Software	●	◆	
Straightedge	●	◆	
String	●		
Similarity, Right Triangles, Trigonometry (G-SRT)			
Similarity transformations			
AA triangle criterion		●	
Definition of similarity		●	

	Integrated Math I	Integrated Math II	Integrated Math III
Dilation given center and scale factor		●	
Similar triangles		●	
Prove similarity theorems			
Geometric figure relationships		●	
Triangles		●	
Trigonometric ratios and right triangles			
Cosine as ratio of adjacent to hypotenuse		●	◆
Pythagorean Theorem		●	◆
Sine and cosine relationship		●	◆
Sine as ratio of opposite to hypotenuse		●	◆
Solve right triangles		●	◆
Tangent as ratio of opposite to adjacent		●	◆
Trigonometric ratio definitions for acute angles		●	◆
Trigonometry in general triangles			
Area formula			●
Law of Cosines			●
Law of Sines			●
Non-right triangles			●
Right triangles			●
Circles (G-C)			
Circle theorems			
Angles of a quadrilateral inscribed in a circle		●	
Chords		●	
Circumscribed circle in a triangle		●	
Inscribed angle		●	
Inscribed circle in a triangle		●	
Radii		●	
Similarity		●	
Tangent line to a circle construction		●	
Arc length and area of sectors			
Arc length intercepted by an angle as ratio		●	
Area of a sector formula		●	
Radian measure		●	
Expressing Geometric Properties with Equations (G-GPE)			
Conic section equation and geometry			
Center		●	
Complete the square		●	
Directrix		●	
Equation of a circle		●	
Equation of a parabola		●	
Focus		●	
Radius		●	
Algebraic proofs of geometric theorems			
Area computation, triangle and rectangle	●		
Coordinates	●	◆	
Perimeter computation, polygon	●		
Segment partition for a given ratio		●	

	Integrated Math I	Integrated Math II	Integrated Math III
Slope of parallel lines	●		
Slope of perpendicular lines	●		
Geometric Measurement and Dimension (G-GMD)			
Volume formulas			
Area of a circle		●	◆
Cavalieri's principle		●	
Circumference of a circle		●	
Problem solving		●	◆
Volume of a cone		●	◆
Volume of a cylinder		●	◆
Volume of a pyramid		●	◆
Volume of a sphere		●	
Two-dimensional and three-dimensional object relationships			
Cross-section of three-dimensional objects			●
Rotation of two-dimensional object			●
Modeling with Geometry (G-MG)			
Modeling situations			
Density based on area and volume			●
Describe objects			●
Design problem solutions			●
Statistics and Probability			
Interpreting Categorical and Quantitative Data (S-ID)			
Single count or measurement variable			
Box plot	●		
Compare centers and spreads of data sets	●		
Dot plot	●		
Effects of outliers	●		
Estimate area under the normal curve			●
Estimate population percentage			●
Histogram	●		
Interpret shapes, centers, and spreads of data sets	●		
Normal distribution			●
Two categorical and quantitative variables			
Fit a linear model to data	●		
Fit function to data (linear, quadratic, exponential)	●	◆	◆
Plot and analyze residuals	●		
Recognize associations and trends	●		
Relative frequencies (joint, marginal, conditional)	●		
Scatter plot	●		
Two-way frequency table	●		
Interpret linear models			
Correlation and causation	●		
Correlation coefficient for a linear fit	●		
Intercept (constant term)	●		
Slope (rate of change)	●		

	Integrated Math I	Integrated Math II	Integrated Math III
Making Inferences and Justifying Conclusions (S-IC)			
Random processes			
Inferences about a population			●
Model consistent with results			●
Sample surveys, experiments, and observational studies			
Compare a randomized experiment			●
Evaluate a report			●
Margin of error			●
Population mean or proportion			●
Randomization			●
Simulations			●
Conditional Probability and the Rules of Probability (S-CP)			
Independence and conditional probability			
Conditional probability		●	
Independent and conditional probability		●	
Independent probability determination		●	
Sample space description		●	
Two-way frequency table for probability		●	
Union (or), intersection (and), complement (not)		●	
Rules of probability			
Addition Rule of probability		●	
Conditional probability of A given B as a fraction		●	
Multiplication Rule of probability		●	
Permutation and combination to compute probability of a compound event		●	
Using Probability to Make Decisions (S-MD)			
Evaluate outcomes			
Fair decision using probability		●	◆
Probability concepts for decision-making		●	◆