

Cross-Reference Chart: High School Mathematics Standards Organized by Courses

Traditional Sequence	Integrated Sequence					Performance Expectation	
Algebra 1	Math 1		Math 2		Math 3		
A1.1.A	M1.1A	A1.1.A				Select and justify functions and equations to model and solve problems.	
A1.1.B	M1.1.B	A1.1.B				Solve problems that can be represented by linear functions, equations, and inequalities.	
A1.1.C	M1.1.C	A1.1.C				Solve problems that can be represented by a system of two linear equations or inequalities.	
A1.1.D			M2.1.C	A1.1.D		Solve problems that can be represented by quadratic functions and equations. (see also A2.1.C)	
A1.1.E	M1.1.D	A1.1.E	M2.1.D	A1.1.E		Solve problems that can be represented by exponential functions and equations.	
A1.2.A	M1.6.A	A1.2.A				Know the relationship between real numbers and the number line, and compare and order real numbers with and without the number line.	
A1.2.B	M1.6.C	A1.2.B				Recognize the multiple uses of variables, determine all possible values of variables that satisfy prescribed conditions, and evaluate algebraic expressions that involve variables.	
A1.2.C	M1.7.C	A1.2.C				Interpret and use integer exponents and square and cube roots, and apply the laws and properties of exponents to simplify and evaluate exponential expressions.	
A1.2.D	M1.6.B	A1.2.D				Determine whether approximations or exact values of real numbers are appropriate, depending on the context, and justify the selection.	
A1.2.E			M2.5.A	A1.2.E		Use algebraic properties to factor and combine like terms in polynomials.	
A1.2.F					M3.6.C	A1.2.F	Add, subtract, multiply, and divide polynomials.
A1.3.A	M1.2.A	A1.3.A				Determine whether a relationship is a function and identify the domain, range, roots, and independent and dependent variables.	
A1.3.B	M1.2.B	A1.3.B				Represent a function with a symbolic expression, as a graph, in a table, and using words, and make connections among these representations.	
A1.3.C	M1.2.C	A1.3.C				Evaluate $f(x)$ at a (i.e., $f(a)$) and solve for x in the equation $f(x) = b$.	
A1.4.A	M1.3.A	A1.4.A				Write and solve linear equations and inequalities in one variable.	

Traditional Sequence	Integrated Sequence						Performance Expectation
	Math 1		Math 2		Math 3		
A1.4.B	M1.3.D	A1.4.B					Write and graph an equation for a line given the slope and the y -intercept, the slope and a point on the line, or two points on the line, and translate between forms of linear equations.
A1.4.C	M1.3.C	A1.4.C					Identify and interpret the slope and intercepts of a linear function, including equations for parallel and perpendicular lines.
A1.4.D	M1.3.E	A1.4.D					Write and solve systems of two linear equations and inequalities in two variables.
A1.4.E	M1.3.B	A1.4.E					Describe how changes in the parameters of linear functions and functions containing an absolute value of a linear expression affect their graphs and the relationships they represent.
A1.5.A			M2.2.A	A1.5.A			Represent a quadratic function with a symbolic expression, as a graph, in a table, and with a description, and make connections among the representations.
A1.5.B			M2.2.B	A1.5.B			Sketch the graph of a quadratic function, describe the effects that changes in the parameters have on the graph, and interpret the x -intercepts as solutions to a quadratic equation.
A1.5.C			M2.2.D	A1.5.C			Solve quadratic equations that can be factored as $(ax + b)(cx + d)$ where a , b , c , and d are integers.
A1.5.D			M2.2.F	A1.5.D			Solve quadratic equations that have real roots by completing the square and by using the quadratic formula.
A1.6.A	M1.5.A	A1.6.A					Use and evaluate the accuracy of summary statistics to describe and compare data sets.
A1.6.B	M1.5.C	A1.6.B					Make valid inferences and draw conclusions based on data.
A1.6.C	M1.5.B	A1.6.C					Describe how linear transformations affect the center and spread of univariate data.
A1.6.D	M1.3.F	A1.6.D					Find the equation of a linear function that best fits bivariate data that are linearly related, interpret the slope and y -intercept of the line, and use the equation to make predictions.
A1.6.E	M1.3.G	A1.6.E					Describe the correlation of data in scatterplots in terms of strong or weak and positive or negative.
A1.7.A	M1.7.A	A1.7.A					Sketch the graph for an exponential function of the form $y = ab^n$ where n is an integer, describe the effects that changes in the parameters a and b have on the graph, and answer questions that arise in situations modeled by exponential functions.
A1.7.B	M1.7.B	A1.7.B					Find and approximate solutions to exponential equations.

Traditional Sequence	Integrated Sequence						Performance Expectation
	Algebra 1		Math 1		Math 2		
A1.7.C	M1.7.D	A1.7.C					Express arithmetic and geometric sequences in both explicit and recursive forms, translate between the two forms, explain how rate of change is represented in each form, and use the forms to find specific terms in the sequence.
A1.7.D	M1.6.D	A1.7.D					Solve an equation involving several variables by expressing one variable in terms of the others.
A1.8.A	M1.8.A	A1.8.A					Analyze a problem situation and represent it mathematically.
A1.8.B	M1.8.B	A1.8.B					Select and apply strategies to solve problems.
A1.8.C	M1.8.C	A1.8.C					Evaluate a solution for reasonableness, verify its accuracy, and interpret the solution in the context of the original problem.
A1.8.D	M1.8.D	A1.8.D					Generalize a solution strategy for a single problem to a class of related problems, and apply a strategy for a class of related problems to solve specific problems.
A1.8.E	M1.8.E	A1.8.E					Read and interpret diagrams, graphs, and text containing the symbols, language, and conventions of mathematics.
A1.8.F	M1.8.F	A1.8.F					Summarize mathematical ideas with precision and efficiency for a given audience and purpose.
A1.8.G	M1.8.G	A1.8.G					Synthesize information to draw conclusions, and evaluate the arguments and conclusions of others.
A1.8.H	M1.8.H (less algebra context)				M3.8.H	A1.8.H	Use inductive reasoning about algebra and the properties of numbers to make conjectures, and use deductive reasoning to prove or disprove conjectures.

Traditional Sequence	Integrated Sequence						Performance Expectation
	Math 1		Math 2		Math 3		
G.1.A	M1.4.A	G.1.A					Distinguish between inductive and deductive reasoning.
G.1.B	M1.4.B	G.1.B					Use inductive reasoning to make conjectures, to test the plausibility of a geometric statement, and to help find a counterexample.
G.1.C	M1.4.C	G.1.C	M2.3.A	G.1.C			Use deductive reasoning to prove that a valid geometric statement is true.
G.1.D			M2.3.C	G.1.D			Write the converse, inverse, and contrapositive of a valid proposition and determine their validity.
G.1.E			M2.3.B	G.1.E			Identify errors or gaps in a mathematical argument and develop counterexamples to refute invalid statements about geometric relationships.
G.1.F			M2.3.D	G.1.F			Distinguish between definitions and undefined geometric terms and explain the role of definitions, undefined terms, postulates (axioms), and theorems.
G.2.A	M1.4.E	G.2.A					Know, prove, and apply theorems about parallel and perpendicular lines.
G.2.B	M1.4.F	G.2.B					Know, prove, and apply theorems about angles, including angles that arise from parallel lines intersected by a transversal.
G.2.C	M1.4.G	G.2.C					Explain and perform basic compass and straightedge constructions related to parallel and perpendicular lines.
G.2.D					M3.5.A	G.2.D	Describe the intersections of lines in the plane and in space, of lines and planes, and of planes in space.
G.3.A			M2.3.E	G.3.A			Know, explain, and apply basic postulates and theorems about triangles and the special lines, line segments, and rays associated with a triangle.
G.3.B	M1.4.D	G.3.B	M2.3.F	G.3.B			Determine and prove triangle congruence, triangle similarity, and other properties of triangles.
G.3.C			M2.3.I	G.3.C			Use the properties of special right triangles (30° – 60° – 90° and 45° – 45° – 90°) to solve problems.
G.3.D			M2.3.G	G.3.D			Know, prove, and apply the Pythagorean Theorem and its converse.
G.3.E			M2.3.H	G.3.E			Solve problems involving the basic trigonometric ratios of sine, cosine, and tangent.
G.3.F			M2.3.J	G.3.F			Know, prove, and apply basic theorems about parallelograms.
G.3.G			M2.3.K	G.3.G			Know, prove, and apply theorems about properties of quadrilaterals and other polygons.

Traditional Sequence	Integrated Sequence					Performance Expectation	
	Math 1		Math 2		Math 3		
G.3.H					M3.7.A	G.3.H	Know, prove, and apply basic theorems relating circles to tangents, chords, radii, secants, and inscribed angles.
G.3.I					M3.7.C	G.3.I	Explain and perform constructions related to the circle.
G.3.J					M3.5.B	G.3.J	Describe prisms, pyramids, parallelepipeds, tetrahedra, and regular polyhedra in terms of their faces, edges, vertices, and properties.
G.3.K					M3.5.C	G.3.K	Analyze cross-sections of cubes, prisms, pyramids, and spheres and identify the resulting shapes.
G.4.A	M1.3.H	G.4.A					Determine the equation of a line in the coordinate plane that is described geometrically, including a line through two given points, a line through a given point parallel to a given line, and a line through a given point perpendicular to a given line.
G.4.B			M2.3.L	G.4.B			Determine the coordinates of a point that is described geometrically.
G.4.C			M2.3.M	G.4.C			Verify and apply properties of triangles and quadrilaterals in the coordinate plane.
G.4.D					M3.7.B	G.4.D	Determine the equation of a circle that is described geometrically in the coordinate plane and, given equations for a circle and a line, determine the coordinates of their intersection(s).
G.5.A					M3.2.A	G.5.A	Sketch results of transformations and compositions of transformations for a given two-dimensional figure on the coordinate plane, and describe the rule(s) for performing translations or for performing reflections about the coordinate axes or the line $y = x$.
G.5.B					M3.2.B	G.5.B	Determine and apply properties of transformations.
G.5.C					M3.2.C	G.5.C	Given two congruent or similar figures in a coordinate plane, describe a composition of translations, reflections, rotations, and dilations that superimposes one figure on the other.
G.5.D					M3.2.D	G.5.D	Describe the symmetries of two-dimensional figures and describe transformations, including reflections across a line and rotations about a point.
G.6.A					M3.7.D	G.6.A	Derive and apply formulas for arc length and area of a sector of a circle.
G.6.B					M3.5.F	G.6.B	Analyze distance and angle measures on a sphere and apply these measurements to the geometry of the earth.
G.6.C					M3.5.D	G.6.C	Apply formulas for surface area and volume of three-dimensional figures to solve problems.

Traditional Sequence	Integrated Sequence						Performance Expectation	
	Geometry		Math 1		Math 2			Math 3
G.6.D						M3.5.E	G.6.D	Predict and verify the effect that changing one, two, or three linear dimensions has on perimeter, area, volume, or surface area of two- and three-dimensional figures.
G.6.E				M2.5.B	G.6.E			Use different degrees of precision in measurement, explain the reason for using a certain degree of precision, and apply estimation strategies to obtain reasonable measurements with appropriate precision for a given purpose.
G.6.F				M2.5.C	G.6.F			Solve problems involving measurement conversions within and between systems, including those involving derived units, and analyze solutions in terms of reasonableness of solutions and appropriate units.
G.7.A				M2.6.A	G.7.A			Analyze a problem situation and represent it mathematically.
G.7.B				M2.6.B	G.7.B			Select and apply strategies to solve problems.
G.7.C				M2.6.C	G.7.C			Evaluate a solution for reasonableness, verify its accuracy, and interpret the solution in the context of the original problem.
G.7.D				M2.6.D	G.7.D			Generalize a solution strategy for a single problem to a class of related problems, and apply a strategy for a class of related problems to solve specific problems.
G.7.E				M2.6.E	G.7.E			Read and interpret diagrams, graphs, and text containing the symbols, language, and conventions of mathematics.
G.7.F				M2.6.F	G.7.F			Summarize mathematical ideas with precision and efficiency for a given audience and purpose.
G.7.G				M2.6.G	G.7.G			Use inductive reasoning to make conjectures, and use deductive reasoning to prove or disprove conjectures.
G.7.H	M1.8.H	G.7.H		M2.6.H	G.7.H			Synthesize information to draw conclusions and evaluate the arguments and conclusions of others.

Traditional Sequence	Integrated Sequence						Performance Expectation
	Math 1		Math 2		Math 3		
A2.1.A			M2.1.A	A2.1.A	M3.1.A	A2.1.A	Select and justify functions and equations to model and solve problems.
A2.1.B			M2.1.B	A2.1.B	M3.1.B	A2.1.B	Solve problems that can be represented by systems of equations and inequalities.
A2.1.C			M2.1.C	A2.1.C	M3.1.C	A2.1.C	Solve problems that can be represented by quadratic functions, equations, and inequalities.
A2.1.D					M3.1.D	A2.1.D	Solve problems that can be represented by exponential and logarithmic functions and equations.
A2.1.E					M3.1.E	A2.1.E	Solve problems that can be represented by inverse variations of the forms $f(x) = \frac{a}{x} + b$, $f(x) = \frac{a}{x^2} + b$, and $f(x) = \frac{a}{(bx+c)}$.
A2.1.F			M2.1.E	A2.1.F			Solve problems involving combinations and permutations.
A2.2.A					M3.6.A	A2.2.A	Explain how whole, integer, rational, real, and complex numbers are related, and identify the number system(s) within which a given algebraic equation can be solved.
A2.2.B					M3.6.B	A2.2.B	Use the laws of exponents to simplify and evaluate numeric and algebraic expressions that contain rational exponents.
A2.2.C					M3.6.D	A2.2.C	Add, subtract, multiply, divide, and simplify rational and more general algebraic expressions.
A2.3.A			M2.2.C	A2.3.A			Translate between the standard form of a quadratic function, the vertex form, and the factored form; graph and interpret the meaning of each form.
A2.3.B			M2.2.E	A2.3.B			Determine the number and nature of the roots of a quadratic function.
A2.3.C			M2.2.G	A2.3.C			Solve quadratic equations and inequalities, including equations with complex roots.
A2.4.A					M3.3.A	A2.4.A	Know and use basic properties of exponential and logarithmic functions and the inverse relationship between them.
A2.4.B					M3.3.B	A2.4.B	Graph an exponential function of the form $f(x) = ab^x$ and its inverse logarithmic function.
A2.4.C					M3.3.C	A2.4.C	Solve exponential and logarithmic equations.

Traditional Sequence	Integrated Sequence					Performance Expectation	
	Math 1		Math 2		Math 3		
A2.5.A					M3.2.E	A2.5.A	Construct new functions using the transformations $f(x-h)$, $f(x)+k$, $cf(x)$, and by adding and subtracting functions, and describe the effect on the original graph(s).
A2.5.B					M3.3.D	A2.5.B	Plot points, sketch, and describe the graphs of functions of the form $f(x) = a\sqrt{x-c} + d$, and solve related equations.
A2.5.C	M1.2.D	A2.5.C			M3.3.E	A2.5.C	Plot points, sketch, and describe the graphs of functions of the form $f(x) = \frac{a}{x} + b$, $f(x) = \frac{a}{x^2} + b$, and $f(x) = \frac{a}{(bx+c)}$, and solve related equations.
A2.5.D					M3.3.F	A2.5.D	Plot points, sketch, and describe the graphs of cubic polynomial functions of the form $f(x) = ax^3 + d$ as an example of higher order polynomials and solve related equations.
A2.6.A			M2.4.A	A2.6.A			Apply the fundamental counting principle and the ideas of order and replacement to calculate probabilities in situations arising from two-stage experiments (compound events).
A2.6.B			M2.4.B	A2.6.B			Given a finite sample space consisting of equally likely outcomes and containing events A and B, determine whether A and B are independent or dependent, and find the conditional probability of A given B.
A2.6.C			M2.4.C	A2.6.C			Compute permutations and combinations, and use the results to calculate probabilities.
A2.6.D			M2.4.D	A2.6.D			Apply the binomial theorem to solve problems involving probability.
A2.6.E			M2.2.H	A2.6.E			Determine if a bivariate data set can be better modeled with an exponential or a quadratic function and use the model to make predictions.
A2.6.F					M3.4.A	A2.6.F	Calculate and interpret measures of variability and standard deviation and use these measures and the characteristics of the normal distribution to describe and compare data sets.
A2.6.G					M3.4.B	A2.6.G	Calculate and interpret margin of error and confidence intervals for population proportions.
A2.7.A					M3.3.G	A2.7.A	Solve systems of three equations with three variables.
A2.7.B			M2.5.D	A2.7.B			Find the terms and partial sums of arithmetic and geometric series and the infinite sum for geometric series.

Traditional Sequence	Integrated Sequence						Performance Expectation
	Algebra 2		Math 1	Math 2	Math 3		
A2.8.A					M3.8.A	A2.8.A	Analyze a problem situation and represent it mathematically.
A2.8.B					M3.8.B	A2.8.B	Select and apply strategies to solve problems.
A2.8.C					M3.8.C	A2.8.C	Evaluate a solution for reasonableness, verify its accuracy, and interpret the solution in the context of the original problem.
A2.8.D					M3.8.D	A2.8.D	Generalize a solution strategy for a single problem to a class of related problems and apply a strategy for a class of related problems to solve specific problems.
A2.8.E					M3.8.E	A2.8.E	Read and interpret diagrams, graphs, and text containing the symbols, language, and conventions of mathematics.
A2.8.F					M3.8.F	A2.8.F	Summarize mathematical ideas with precision and efficiency for a given audience and purpose.
A2.8.G					M3.8.G	A2.8.G	Use inductive reasoning and the properties of numbers to make conjectures, and use deductive reasoning to prove or disprove conjectures.
A2.8.H					M3.8.H	A2.8.H	Synthesize information to draw conclusions and evaluate the arguments and conclusions of others.