

9-12 Review Process, Program Review Rubric, Program Review Score Sheets

(Final 10/21/08)

Typical Review Process

Reviewer checks schedule for assignments
Reviewer checks out material from the library for a specific grade level within a program, as assigned
Reviewer ensures all relevant material is included
Reviewer picks up two blank review instruments (Parts 1 & 2)
Using the publisher's alignment worksheet, reviewer completes Part 1 – Content/Standards Alignment
If necessary, reviewer checks out material from adjacent grade levels to identify where standards are met (dip up or down)
Reviewer completes Part 2 – Other Factors
Reviewer checks for completeness, then turns in both forms to data-entry staff and checks in materials to the library
Reviewer records optional comments

Expectations for Reviewers

- Complete at least 7 reviews (6 hrs each)
- Maintain high degree of professionalism and consistency
- Disclose any bias before reviewing text
- Help with careful materials management
- Participate in process review sessions
- Ask questions! *(Who are the go-to people?)*

Final Program Review Scoring Rubric (10/21/08)

<p>There is little or no content (0)</p>	<p>Important content is missing (1)</p>	<p>All or most content is present, but missing some key teaching and learning tools (2)</p>	<p>All content and key teaching and learning tools are present (3)</p>
<ul style="list-style-type: none"> • All or most of the content in the standard is missing in the program. <ul style="list-style-type: none"> - It may be completely absent. - It may be briefly mentioned, but it is not developed. - It may contain less sophisticated precursor content that would lead to the content in the standard. • <i>A typical student would not be able to achieve mastery with the core program materials.</i> 	<ul style="list-style-type: none"> • Some significant aspect of the content is not present. <ul style="list-style-type: none"> - Some of the content may be completely absent. - Some of the content may be less rigorous. • It would take significant time and knowledge to fill the content gaps in the program. • <i>A typical student would not be able to achieve mastery with the core program materials without some content supplementation.</i> 	<ul style="list-style-type: none"> • The key content from the standard exists in the program. • The core materials need supplementation to do such things as adding additional opportunities for practice or finding other representations to help students consolidate learning. • <i>Many students would achieve mastery with the core program material.</i> 	<ul style="list-style-type: none"> • The content from the standard is fully present. • There is adequate information about the content and sufficient teaching and learning ideas included program to ensure that students develop conceptual understanding and procedural skill. • There is sufficient practice to ensure mastery. • <i>A typical student would be able to achieve mastery with the core program materials.</i>

Algebra 1		Date:	
Program:		Reviewer #:	

(Rate each item on the scale 0-not met, 1-limited content, 2-limited practice, 3-fully met)

A1.1. Core Content: Solving problems (Algebra)		0	1	2	3	A2	Evidence
A1.1.A	Select and justify functions and equations to model and solve problems.	○	○	○	○	◇	
A1.1.B	Solve problems that can be represented by linear functions, equations, and inequalities.	○	○	○	○	◇	
A1.1.C	Solve problems that can be represented by a system of two linear equations or inequalities.	○	○	○	○	◇	
A1.1.D	Solve problems that can be represented by quadratic functions and equations.	○	○	○	○	◇	
A1.1.E	Solve problems that can be represented by exponential functions and equations.	○	○	○	○	◇	

A1.2. Core Content: Numbers, expressions, and operations (Numbers, Operations, Algebra)		0	1	2	3	A2	Evidence
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	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	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	Determine whether approximations or exact values of real numbers are appropriate, depending on the context, and justify the selection.	○	○	○	○	◇	
A1.2.E	Use algebraic properties to factor and combine like terms in polynomials.	○	○	○	○	◇	
A1.2.F	Add, subtract, multiply, and divide polynomials.	○	○	○	○	◇	

A1.3. Core Content: Characteristics and behaviors of functions (Algebra)		0	1	2	3	A2	Evidence
A1.3.A	Determine whether a relationship is a function and identify the domain, range, roots, and independent and dependent variables.	○	○	○	○	◇	
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	Evaluate $f(x)$ at a (i.e., $f(a)$) and solve for x in the equation $f(x) = b$.	○	○	○	○	◇	

A1.4. Core Content: Linear functions, equations, and inequalities (Algebra)		0	1	2	3	A2	Evidence
A1.4.A	Write and solve linear equations and inequalities in one variable.	○	○	○	○	◇	
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	Identify and interpret the slope and intercepts of a linear function, including equations for parallel and perpendicular lines.	○	○	○	○	◇	
A1.4.D	Write and solve systems of two linear equations and inequalities in two variables.	○	○	○	○	◇	
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. Core Content: Quadratic functions and equations (Algebra)		0	1	2	3	A2	Evidence
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	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	Solve quadratic equations that can be factored as $(ax + b)(cx + d)$ where a , b , c , and d are integers.	○	○	○	○	◇	
A1.5.D	Solve quadratic equations that have real roots by completing the square and by using the quadratic formula.	○	○	○	○	◇	

A1.6. Core Content: Data and distributions (Data/Statistics/Probability)		0	1	2	3	A2	Evidence
A1.6.A	Use and evaluate the accuracy of summary statistics to describe and compare data sets.	○	○	○	○	◇	
A1.6.B	Make valid inferences and draw conclusions based on data.	○	○	○	○	◇	
A1.6.C	Describe how linear transformations affect the center and spread of univariate data.	○	○	○	○	◇	
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	Describe the correlation of data in scatterplots in terms of strong or weak and positive or negative.	○	○	○	○	◇	

A1.7. Additional Key Content (Algebra)		0	1	2	3	A2	Evidence
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	Find and approximate solutions to exponential equations.	○	○	○	○	◇	
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	Solve an equation involving several variables by expressing one variable in terms of the others.	○	○	○	○	◇	

A1.8. Core Processes: Reasoning, problem solving, and communication		0	1	2	3	A2	Evidence
A1.8.A	Analyze a problem situation and represent it mathematically.	○	○	○	○	◇	
A1.8.B	Select and apply strategies to solve problems.	○	○	○	○	◇	
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	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	Read and interpret diagrams, graphs, and text containing the symbols, language, and conventions of mathematics.	○	○	○	○	◇	
A1.8.F	Summarize mathematical ideas with precision and efficiency for a given audience and purpose.	○	○	○	○	◇	
A1.8.G	Synthesize information to draw conclusions, and evaluate the arguments and conclusions of others.	○	○	○	○	◇	
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.	○	○	○	○	◇	

Geometry		Date:	
Program:		Reviewer #:	

<i>(Rate each item on the scale 0-not met, 1-limited content, 2-limited practice, 3-fully met)</i>					
G.1. Core Content: Logical arguments and proofs (Logic)					Evidence
		0	1	2	3
G.1.A	Distinguish between inductive and deductive reasoning.	○	○	○	○
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	Use deductive reasoning to prove that a valid geometric statement is true.	○	○	○	○
G.1.D	Write the converse, inverse, and contrapositive of a valid proposition and determine their validity.	○	○	○	○
G.1.E	Identify errors or gaps in a mathematical argument and develop counterexamples to refute invalid statements about geometric relationships.	○	○	○	○
G.1.F	Distinguish between definitions and undefined geometric terms and explain the role of definitions, undefined terms, postulates (axioms), and theorems.	○	○	○	○

G.2. Core Content: Lines and angles (Geometry/Measurement)					Evidence
		0	1	2	3
G.2.A	Know, prove, and apply theorems about parallel and perpendicular lines.	○	○	○	○
G.2.B	Know, prove, and apply theorems about angles, including angles that arise from parallel lines intersected by a transversal.	○	○	○	○
G.2.C	Explain and perform basic compass and straightedge constructions related to parallel and perpendicular lines.	○	○	○	○
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. Core Content: Two- and three-dimensional figures (Geometry/Measurement)					Evidence
		0	1	2	3
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	Determine and prove triangle congruence, triangle similarity, and other properties of triangles.	○	○	○	○
G.3.C	Use the properties of special right triangles (30°–60°–90° and 45°–45°–90°) to solve problems.	○	○	○	○
G.3.D	Know, prove, and apply the Pythagorean Theorem and its converse.	○	○	○	○

G.3.E	Solve problems involving the basic trigonometric ratios of sine, cosine, and tangent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
G.3.F	Know, prove, and apply basic theorems about parallelograms.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
G.3.G	Know, prove, and apply theorems about properties of quadrilaterals and other polygons.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
G.3.H	Know, prove, and apply basic theorems relating circles to tangents, chords, radii, secants, and inscribed angles.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
G.3.I	Explain and perform constructions related to the circle.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
G.3.J	Describe prisms, pyramids, parallelepipeds, tetrahedra, and regular polyhedra in terms of their faces, edges, vertices, and properties.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
G.3.K	Analyze cross-sections of cubes, prisms, pyramids, and spheres and identify the resulting shapes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

G.4. Core Content: Geometry in the coordinate plane (<i>Geometry/Measurement, Algebra</i>)		0	1	2	3	Evidence
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.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
G.4.B	Determine the coordinates of a point that is described geometrically.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
G.4.C	Verify and apply properties of triangles and quadrilaterals in the coordinate plane.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
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).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

G.5. Core Content: Geometric transformations (<i>Geometry/Measurement</i>)		0	1	2	3	Evidence
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 $y = x$.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
G.5.B	Determine and apply properties of transformations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
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.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
G.5.D	Describe the symmetries of two-dimensional figures and describe transformations, including reflections across a line and rotations about a point.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

G.6. Additional Key Content (Measurement)		0	1	2	3	Evidence
G.6.A	Derive and apply formulas for arc length and area of a sector of a circle.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
G.6.B	Analyze distance and angle measures on a sphere and apply these measurements to the geometry of the earth.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
G.6.C	Apply formulas for surface area and volume of three-dimensional figures to solve problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
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.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
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.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
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.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

G.7. Core Processes: Reasoning, problem solving, and communication		0	1	2	3	Evidence
G.7.A	Analyze a problem situation and represent it mathematically.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
G.7.B	Select and apply strategies to solve problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
G.7.C	Evaluate a solution for reasonableness, verify its accuracy, and interpret the solution in the context of the original problem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
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.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
G.7.E	Read and interpret diagrams, graphs, and text containing the symbols, language, and conventions of mathematics.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
G.7.F	Summarize mathematical ideas with precision and efficiency for a given audience and purpose.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
G.7.G	Synthesize information to draw conclusions and evaluate the arguments and conclusions of others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
G.7.H	Use inductive reasoning to make conjectures, and use deductive reasoning to prove or disprove conjectures.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Algebra 2		Date:	
Program:		Reviewer #:	

<i>(Rate each item on the scale 0-not met, 1-limited content, 2-limited practice, 3-fully met)</i>							
A2.1. Core Content: Solving problems		0	1	2	3	A1	Evidence
A2.1.A	Select and justify functions and equations to model and solve problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	◇	
A2.1.B	Solve problems that can be represented by systems of equations and inequalities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	◇	
A2.1.C	Solve problems that can be represented by quadratic functions, equations, and inequalities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	◇	
A2.1.D	Solve problems that can be represented by exponential and logarithmic functions and equations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	◇	
A2.1.E	Solve problems that can be represented by inverse variations of the forms $f(x)=a/x+b$, $f(x)=a/x^2+b$, and $f(x)=a/(bx+c)$.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	◇	
A2.1.F	Solve problems involving combinations and permutations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	◇	

A2.2. Core Content: Numbers, expressions, and operations (Numbers, Operations, Algebra)		0	1	2	3	A1	Evidence
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.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	◇	
A2.2.B	Use the laws of exponents to simplify and evaluate numeric and algebraic expressions that contain rational exponents.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	◇	
A2.2.C	Add, subtract, multiply, divide, and simplify rational and more general algebraic expressions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	◇	

A2.3. Core Content: Quadratic functions and equations (Algebra)		0	1	2	3	A1	Evidence
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.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	◇	
A2.3.B	Determine the number and nature of the roots of a quadratic function.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	◇	
A2.3.C	Solve quadratic equations and inequalities, including equations with complex roots.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	◇	

A2.4. Core Content: Exponential and logarithmic functions and equations (Algebra)		0	1	2	3	A1	Evidence
A2.4.A	Know and use basic properties of exponential and logarithmic functions and the inverse relationship between them.	○	○	○	○	◇	
A2.4.B	Graph an exponential function of the form $f(x) = ab^x$ and its inverse logarithmic function.	○	○	○	○	◇	
A2.4.C	Solve exponential and logarithmic equations.	○	○	○	○	◇	

A2.5. Core Content: Additional functions and equations (Algebra)		0	1	2	3	A1	Evidence
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	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	Plot points, sketch, and describe the graphs of functions of the form $f(x) = a/x + b$, $f(x) = a/x^2 + b$, and $f(x) = a/(bx + c)$, and solve related equations.	○	○	○	○	◇	
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. Core Content: Probability, data, and distributions (Data/Statistics/Probability)		0	1	2	3	A1	Evidence
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	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	Compute permutations and combinations, and use the results to calculate probabilities.	○	○	○	○	◇	
A2.6.D	Apply the binomial theorem to solve problems involving probability.	○	○	○	○	◇	
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	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	Calculate and interpret margin of error and confidence intervals for population proportions.	○	○	○	○	◇	

A2.7. Additional Key Content (Algebra)		0	1	2	3	A1	Evidence
A2.7.A	Solve systems of three equations with three variables.	○	○	○	○	◇	
A2.7.B	Find the terms and partial sums of arithmetic and geometric series and the infinite sum for geometric series.	○	○	○	○	◇	

A2.8. Core Processes: Reasoning, problem solving, and communication		0	1	2	3	A1	Evidence
A2.8.A	Analyze a problem situation and represent it mathematically.	○	○	○	○	◇	
A2.8.B	Select and apply strategies to solve problems.	○	○	○	○	◇	
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	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	Read and interpret diagrams, graphs, and text containing the symbols, language, and conventions of mathematics.	○	○	○	○	◇	
A2.8.F	Summarize mathematical ideas with precision and efficiency for a given audience and purpose.	○	○	○	○	◇	
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	Synthesize information to draw conclusions and evaluate the arguments and conclusions of others.	○	○	○	○	◇	

Mathematics 1							Date:	
Program:							Reviewer #:	

(Rate each item on the scale 0-not met, 1-limited content, 2-limited practice, 3-fully met)

M1.1. Core Content: Solving problems (Algebra)		0	1	2	3	M2	M3	Evidence
M1.1.A	Select and justify functions and equations to model and solve problems.	○	○	○	○	◇	◇	
M1.1.B	Solve problems that can be represented by linear functions, equations, and inequalities.	○	○	○	○	◇	◇	
M1.1.C	Solve problems that can be represented by a system of two linear equations or inequalities.	○	○	○	○	◇	◇	
M1.1.D	Solve problems that can be represented by exponential functions and equations.	○	○	○	○	◇	◇	

M1.2. Core Content: Characteristics and behaviors of functions (Algebra)		0	1	2	3	M2	M3	Evidence
M1.2.A	Determine whether a relationship is a function and identify the domain, range, roots, and independent and dependent variables.	○	○	○	○	◇	◇	
M1.2.B	Represent a function with a symbolic expression, as a graph, in a table, and using words, and make connections among these representations.	○	○	○	○	◇	◇	
M1.2.C	Evaluate $f(x)$ at a (i.e., $f(a)$) and solve for x in the equation $f(x) = b$.	○	○	○	○	◇	◇	
M1.2.D	Plot points, sketch, and describe the graphs of functions of the form $f(x) = a/x + b$.	○	○	○	○	◇	◇	

M1.3 Core Cont.: Linear funcs., equations, and relationships (Alg., Geom./Meas., Data/Stats./Prob.)		0	1	2	3	M2	M3	Evidence
M1.3.A	Write and solve linear equations and inequalities in one variable.	○	○	○	○	◇	◇	
M1.3.B	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.	○	○	○	○	◇	◇	
M1.3.C	Identify and interpret the slope and intercepts of a linear function, including equations for parallel and perpendicular lines.	○	○	○	○	◇	◇	
M1.3.D	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.	○	○	○	○	◇	◇	
M1.3.E	Write and solve systems of two linear equations and inequalities in two variables.	○	○	○	○	◇	◇	

M1.3.F	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.	○ ○ ○ ○	◇	◇	
M1.3.G	Describe the correlation of data in scatterplots in terms of strong or weak and positive or negative.	○ ○ ○ ○	◇	◇	
M1.3.H	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.	○ ○ ○ ○	◇	◇	

M1.4. Core Content: Proportionality, similarity, and geometric reasoning (<i>Geometry/Measurement</i>)		0	1	2	3	M2	M3	Evidence
M1.4.A	Distinguish between inductive and deductive reasoning.	○ ○ ○ ○				◇	◇	
M1.4.B	Use inductive reasoning to make conjectures, to test the plausibility of a geometric statement, and to help find a counterexample.	○ ○ ○ ○				◇	◇	
M1.4.C	Use deductive reasoning to prove that a valid geometric statement is true.	○ ○ ○ ○				◇	◇	
M1.4.D	Determine and prove triangle similarity.	○ ○ ○ ○				◇	◇	

M1.4.E	Know, prove, and apply theorems about parallel and perpendicular lines.	○ ○ ○ ○				◇	◇	
M1.4.F	Know, prove, and apply theorems about angles, including angles that arise from parallel lines intersected by a transversal.	○ ○ ○ ○				◇	◇	
M1.4.G	Explain and perform basic compass and straightedge constructions related to parallel and perpendicular lines.	○ ○ ○ ○				◇	◇	

M1.5. Core Content: Data and distributions (<i>Data/Statistics/Probability</i>)		0	1	2	3	M2	M3	Evidence
M1.5.A	Use and evaluate the accuracy of summary statistics to describe and compare data sets.	○ ○ ○ ○				◇	◇	
M1.5.B	Describe how linear transformations affect the center and spread of univariate data.	○ ○ ○ ○				◇	◇	
M1.5.C	Make valid inferences and draw conclusions based on data.	○ ○ ○ ○				◇	◇	

M1.6. Core Content: Numbers, expressions, and operations (Numbers, Operations, Algebra)		0	1	2	3	M2	M3	Evidence
M1.6.A	Know the relationship between real numbers and the number line, and compare and order real numbers with and without the number line.	○	○	○	○	◇	◇	
M1.6.B	Determine whether approximations or exact values of real numbers are appropriate, depending on the context, and justify the selection.	○	○	○	○	◇	◇	
M1.6.C	Recognize the multiple uses of variables, determine all possible values of variables that satisfy prescribed conditions, and evaluate algebraic expressions that involve variables.	○	○	○	○	◇	◇	
M1.6.D	Solve an equation involving several variables by expressing one variable in terms of the others.	○	○	○	○	◇	◇	

M1.7. Additional Key Content (Numbers, Algebra)		0	1	2	3	M2	M3	Evidence
M1.7.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.	○	○	○	○	◇	◇	
M1.7.B	Find and approximate solutions to exponential equations.	○	○	○	○	◇	◇	
M1.7.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.	○	○	○	○	◇	◇	
M1.7.D	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.	○	○	○	○	◇	◇	

M1.8. Core Processes: Reasoning, problem solving, and communication		0	1	2	3	M2	M3	Evidence
M1.8.A	Analyze a problem situation and represent it mathematically.	○	○	○	○	◇	◇	
M1.8.B	Select and apply strategies to solve problems.	○	○	○	○	◇	◇	
M1.8.C	Evaluate a solution for reasonableness, verify its accuracy, and interpret the solution in the context of the original problem.	○	○	○	○	◇	◇	
M1.8.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.	○	○	○	○	◇	◇	
M1.8.E	Read and interpret diagrams, graphs, and text containing the symbols, language, and conventions of mathematics.	○	○	○	○	◇	◇	
M1.8.F	Summarize mathematical ideas with precision and efficiency for a given audience and purpose.	○	○	○	○	◇	◇	
M1.8.G	Synthesize information to draw conclusions, and evaluate the arguments and conclusions of others.	○	○	○	○	◇	◇	
M1.8.H	Use inductive reasoning to make conjectures, and use deductive reasoning to prove or disprove conjectures.	○	○	○	○	◇	◇	

Mathematics 2			Date:	
Program:			Reviewer #:	

<i>(Rate each item on the scale 0-not met, 1-limited content, 2-limited practice, 3-fully met)</i>										
M2.1. Core Content: Modeling situations and solving problems (Algebra)				0	1	2	3	M1	M3	Evidence
M2.1.A	Select and justify functions and equations to model and solve problems.			○	○	○	○	◇	◇	
M2.1.B	Solve problems that can be represented by systems of equations and inequalities.			○	○	○	○	◇	◇	
M2.1.C	Solve problems that can be represented by quadratic functions, equations, and inequalities.			○	○	○	○	◇	◇	
M2.1.D	Solve problems that can be represented by exponential functions and equations.			○	○	○	○	◇	◇	
M2.1.E	Solve problems involving combinations and permutations.			○	○	○	○	◇	◇	

M2.2. Core Content: Quadratic functions, equations, and relationships (Algebra)				0	1	2	3	M1	M3	Evidence
M2.2.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.			○	○	○	○	◇	◇	
M2.2.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.			○	○	○	○	◇	◇	
M2.2.C	Translate between the standard form of a quadratic function, the vertex form, and the factored form; graph and interpret the meaning of each form.			○	○	○	○	◇	◇	
M2.2.D	Solve quadratic equations that can be factored as $(ax + b)(cx + d)$ where $a, b, c,$ and d are integers.			○	○	○	○	◇	◇	
M2.2.E	Determine the number and nature of the roots of a quadratic function.			○	○	○	○	◇	◇	
M2.2.F	Solve quadratic equations that have real roots by completing the square and by using the quadratic formula.			○	○	○	○	◇	◇	
M2.2.G	Solve quadratic equations and inequalities, including equations with complex roots.			○	○	○	○	◇	◇	
M2.2.H	Determine if a bivariate data set can be better modeled with an exponential or a quadratic function and use the model to make predictions.			○	○	○	○	◇	◇	

M2.3. Core Content: Conjectures and proofs (Algebra, Geometry/Measurement)		0	1	2	3	M1	M3	Evidence
M2.3.A	Use deductive reasoning to prove that a valid geometric statement is true.	○	○	○	○	◇	◇	
M2.3.B	Identify errors or gaps in a mathematical argument and develop counterexamples to refute invalid statements about geometric relationships.	○	○	○	○	◇	◇	
M2.3.C	Write the converse, inverse, and contrapositive of a valid proposition and determine their validity.	○	○	○	○	◇	◇	
M2.3.D	Distinguish between definitions and undefined geometric terms and explain the role of definitions, undefined terms, postulates (axioms), and theorems.	○	○	○	○	◇	◇	
M2.3.E	Know, explain, and apply basic postulates and theorems about triangles and the special lines, line segments, and rays associated with a triangle.	○	○	○	○	◇	◇	
M2.3.F	Determine and prove triangle congruence and other properties of triangles.	○	○	○	○	◇	◇	
M2.3.G	Know, prove, and apply the Pythagorean Theorem and its converse.	○	○	○	○	◇	◇	
M2.3.H	Solve problems involving the basic trigonometric ratios of sine, cosine, and tangent.	○	○	○	○	◇	◇	
M2.3.I	Use the properties of special right triangles ($30^\circ-60^\circ-90^\circ$ and $45^\circ-45^\circ-90^\circ$) to solve problems.	○	○	○	○	◇	◇	
M2.3.J	Know, prove, and apply basic theorems about parallelograms.	○	○	○	○	◇	◇	
M2.3.K	Know, prove, and apply theorems about properties of quadrilaterals and other polygons.	○	○	○	○	◇	◇	
M2.3.L	Determine the coordinates of a point that is described geometrically.	○	○	○	○	◇	◇	
M2.3.M	Verify and apply properties of triangles and quadrilaterals in the coordinate plane.	○	○	○	○	◇	◇	

M2.4. Core Content: Probability (Data/Statistics/Probability)		0	1	2	3	M1	M3	Evidence
M2.4.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).	○	○	○	○	◇	◇	
M2.4.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.	○	○	○	○	◇	◇	
M2.4.C	Compute permutations and combinations, and use the results to calculate probabilities.	○	○	○	○	◇	◇	
M2.4.D	Apply the binomial theorem to solve problems involving probability.	○	○	○	○	◇	◇	

M2.5. Additional Key Content (Algebra, Measurement)		0	1	2	3	M1	M3	Evidence
M2.5.A	Use algebraic properties to factor and combine like terms in polynomials.	○	○	○	○	◇	◇	
M2.5.B	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.	○	○	○	○	◇	◇	
M2.5.C	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.	○	○	○	○	◇	◇	
M2.5.D	Find the terms and partial sums of arithmetic and geometric series and the infinite sum for geometric series.	○	○	○	○	◇	◇	

M2.6. Core Processes: Reasoning, problem solving, and communication		0	1	2	3	M1	M3	Evidence
M2.6.A	Analyze a problem situation and represent it mathematically.	○	○	○	○	◇	◇	
M2.6.B	Select and apply strategies to solve problems.	○	○	○	○	◇	◇	
M2.6.C	Evaluate a solution for reasonableness, verify its accuracy, and interpret the solution in the context of the original problem.	○	○	○	○	◇	◇	
M2.6.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.	○	○	○	○	◇	◇	
M2.6.E	Read and interpret diagrams, graphs, and text containing the symbols, language, and conventions of mathematics.	○	○	○	○	◇	◇	
M2.6.F	Summarize mathematical ideas with precision and efficiency for a given audience and purpose.	○	○	○	○	◇	◇	
M2.6.G	Synthesize information to draw conclusions and evaluate the arguments and conclusions of others.	○	○	○	○	◇	◇	
M2.6.H	Use inductive reasoning to make conjectures, and use deductive reasoning to prove or disprove conjectures.	○	○	○	○	◇	◇	

Mathematics 3		Date:	
Program:		Reviewer #:	

<i>(Rate each item on the scale 0-not met, 1-limited content, 2-limited practice, 3-fully met)</i>								
M3.1. Core Content: Solving problems (Algebra)		0	1	2	3	M1	M2	Evidence
M3.1.A	Select and justify functions and equations to model and solve problems.	○	○	○	○	◇	◇	
M3.1.B	Solve problems that can be represented by systems of equations and inequalities.	○	○	○	○	◇	◇	
M3.1.C	Solve problems that can be represented by quadratic functions, equations, and inequalities.	○	○	○	○	◇	◇	
M3.1.D	Solve problems that can be represented by exponential and logarithmic functions and equations.	○	○	○	○	◇	◇	
M3.1.E	Solve problems that can be represented by inverse variations of the forms $f(x) = a/x + b$, $f(x) = a/x^2 + b$, and $f(x) = a/(bx + c)$.	○	○	○	○	◇	◇	

M3.2. Core Content: Transformations and functions (Algebra, Geometry/Measurement)		0	1	2	3	M1	M2	Evidence
M3.2.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 $y = x$.	○	○	○	○	◇	◇	
M3.2.B	Determine and apply properties of transformations.	○	○	○	○	◇	◇	
M3.2.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.	○	○	○	○	◇	◇	
M3.2.D	Describe the symmetries of two-dimensional figures and describe transformations, including reflections across a line and rotations about a point.	○	○	○	○	◇	◇	
M3.2.E	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).	○	○	○	○	◇	◇	

M3.3. Core Content: Functions and modeling (Algebra)		0	1	2	3	M1	M2	Evidence
M3.3.A	Know and use basic properties of exponential and logarithmic functions and the inverse relationship between them.	○	○	○	○	◇	◇	
M3.3.B	Graph an exponential function of the form $f(x) = ab^x$ and its inverse logarithmic function.	○	○	○	○	◇	◇	
M3.3.C	Solve exponential and logarithmic equations.	○	○	○	○	◇	◇	
M3.3.D	Plot points, sketch, and describe the graphs of functions of the form $f(x) = av(x - c) + d$, and solve related equations.	○	○	○	○	◇	◇	

M3.3.E	Plot points, sketch, and describe the graphs of functions of the form $f(x) = a/x^2 + b$ and $f(x) = a/(bx + c)$, and solve related equations.	○ ○ ○ ○	◇	◇	
M3.3.F	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.	○ ○ ○ ○	◇	◇	
M3.3.G	Solve systems of three equations with three variables.	○ ○ ○ ○	◇	◇	

M3.4. Core Content: Quantifying variability (Data/Statistics/Probability)		0	1	2	3	M1	M2	Evidence
M3.4.A	Calculate and interpret measures of variability and std. deviation and use these measures and the characteristics of the normal distribution to describe and compare data sets.	○	○	○	○	◇	◇	
M3.4.B	Calculate and interpret margin of error and confidence intervals for population proportions.	○	○	○	○	◇	◇	

M3.5. Core Content: Three-dimensional geometry (Geometry/Masurement)		0	1	2	3	M1	M2	Evidence
M3.5.A	Describe the intersections of lines in the plane and in space, of lines and planes, and of planes in space.	○	○	○	○	◇	◇	
M3.5.B	Describe prisms, pyramids, parallelepipeds, tetrahedra, and regular polyhedra in terms of their faces, edges, vertices, and properties.	○	○	○	○	◇	◇	
M3.5.C	Analyze cross-sections of cubes, prisms, pyramids, and spheres and identify the resulting shapes.	○	○	○	○	◇	◇	
M3.5.D	Apply formulas for surface area and volume of three-dimensional figures to solve problems.	○	○	○	○	◇	◇	
M3.5.E	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.	○	○	○	○	◇	◇	
M3.5.F	Analyze distance and angle measures on a sphere and apply these measurements to the geometry of the earth.	○	○	○	○	◇	◇	

M3.6. Core Content: Algebraic properties (Numbers, Algebra)		0	1	2	3	M1	M2	Evidence
M3.6.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.	○	○	○	○	◇	◇	
M3.6.B	Use the laws of exponents to simplify and evaluate numeric and algebraic expressions that contain rational exponents.	○	○	○	○	◇	◇	
M3.6.C	Add, subtract, multiply, and divide polynomials.	○	○	○	○	◇	◇	
M3.6.D	Add, subtract, multiply, divide, and simplify rational and more general algebraic expressions.	○	○	○	○	◇	◇	

M3.7. Additional Key Content (<i>Geometry/Measurement</i>)		0	1	2	3	M1	M2	Evidence
M3.7.A	Know, prove, and apply basic theorems relating circles to tangents, chords, radii, secants, and inscribed angles.	○	○	○	○	◇	◇	
M3.7.B	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).	○	○	○	○	◇	◇	
M3.7.C	Explain and perform constructions related to the circle.	○	○	○	○	◇	◇	
M3.7.D	Derive and apply formulas for arc length and area of a sector of a circle.	○	○	○	○	◇	◇	

M3.8. Core Processes: Reasoning, problem solving, and communication		0	1	2	3	M1	M2	Evidence
M3.8.A	Analyze a problem situation and represent it mathematically.	○	○	○	○	◇	◇	
M3.8.B	Select and apply strategies to solve problems.	○	○	○	○	◇	◇	
M3.8.C	Evaluate a solution for reasonableness, verify its accuracy, and interpret the solution in the context of the original problem.	○	○	○	○	◇	◇	
M3.8.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.	○	○	○	○	◇	◇	
M3.8.E	Read and interpret diagrams, graphs, and text containing the symbols, language, and conventions of mathematics.	○	○	○	○	◇	◇	
M3.8.F	Summarize mathematical ideas with precision and efficiency for a given audience and purpose.	○	○	○	○	◇	◇	
M3.8.G	Synthesize information to draw conclusions and evaluate the arguments and conclusions of others.	○	○	○	○	◇	◇	
M3.8.H	Use inductive reasoning and the properties of numbers to make conjectures, and use deductive reasoning to prove or disprove conjectures.	○	○	○	○	◇	◇	

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