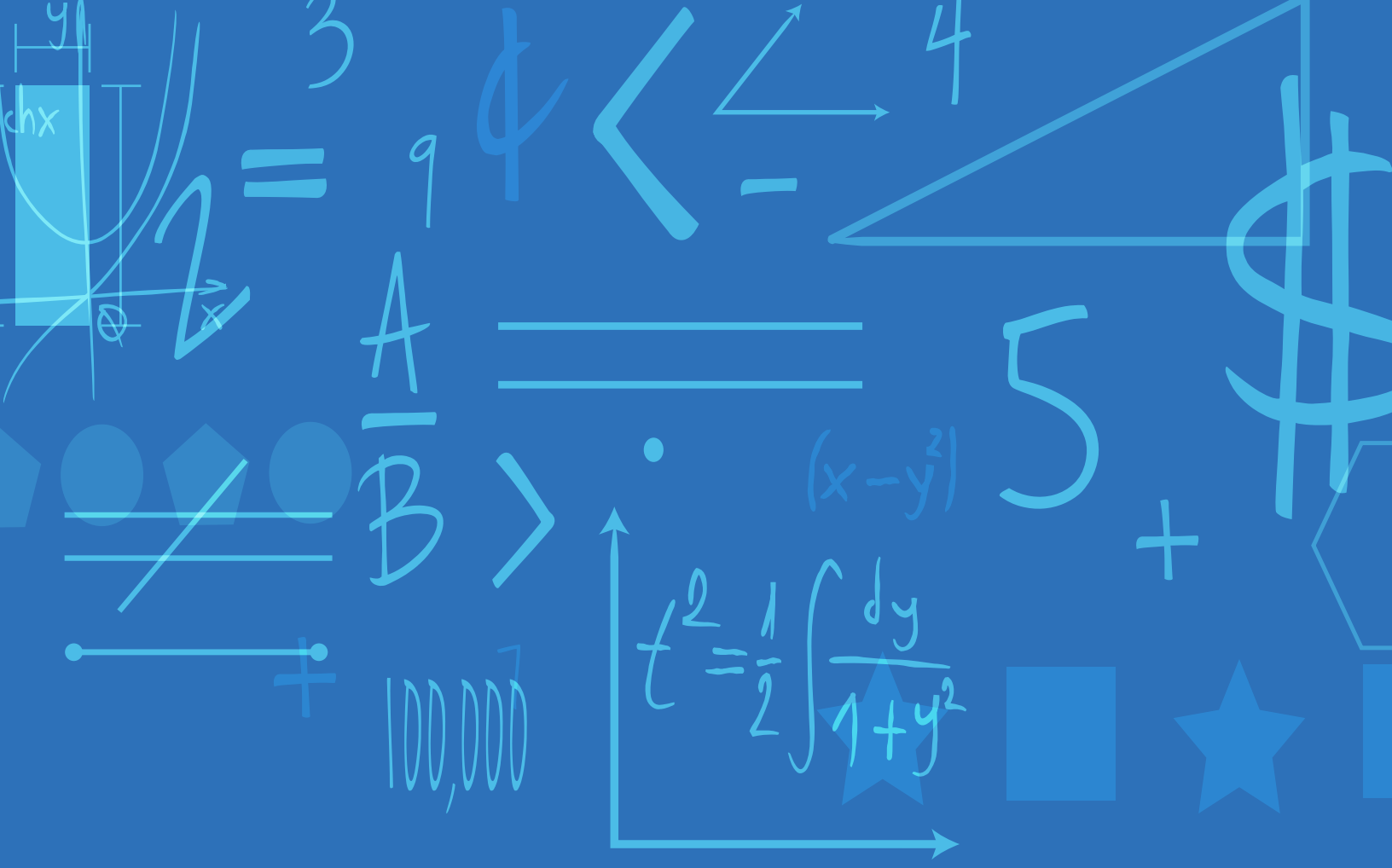

Introduction to the **Revised Mathematics TEKS**

GAP ANALYSIS JOURNAL
GRADES 9 - 12

Texas Education Agency

Gap Analysis Notes Page

Ahas	Oh-nos

Stations Reflection Sheet

	Grade 8 Rephrase the TEKS in your own words: What vocabulary is new?	Algebra I Rephrase the TEKS in your own words: What vocabulary is new?	Algebra II Rephrase the TEKS in your own words: What vocabulary is new?	Geometry Rephrase the TEKS in your own words: What vocabulary is new?
K What do you know about this concept?				
W What do you want to learn about this concept?				
L What did you learn about this concept?				
Additional Investigations or Questions				

Stations Reflection Sheet (cont.)

How does the activity provide some clarification about the intent of the TEKS?

What vertical connections are seen among the courses?

How do concepts build upon each other within courses?

Curriculum Analysis
Algebra I

What new content moved into the grade 8 curriculum?	*What student expectations in Algebra I may be affected by the change in curriculum?*
• Generalize that the ratio of corresponding sides of similar shapes are proportional, including a shape and its dilation. 8(3)(A) • Use similar right triangles to develop an understanding that slope, given as the rate comparing the change in *y*-values to the change in *x*-values $\left(\frac{y_2 - y_1}{x_2 - x_1}\right)$. 8(4)(A) • Interpret unit rate as the slope of the line that models a proportional relationship. 8(4)(B) • Use data from a table or graph to determine rate of change or slope and *y*-intercept in context. 8(4)(C) • Contrast bivariate sets of data that suggest a linear relationship with those that do not suggest a linear relationship from a graphical representation. 8(5)(C) • Identify functions using sets of ordered pairs, tables, mappings, and graphs. 8(5)(G)	• Determine the domain and range of a linear function in mathematical problems; determine reasonable domain and range values for real-world situations, both continuous and discrete; and represent domain and range using inequalities. A(2)(A) • Write linear equations in various forms given a point and the slope and two points, from a table of values, a graph, and a verbal description. A(2)(B), A(2)(C) • **Write the equation of a line that contains a given point and is parallel or perpendicular to a given line. A(2)(E), A(2)(F)** • **Write an equation of a line that is parallel or perpendicular to the X or Y axis, and determine whether the slope of the line is zero or undefined. A(2)(G)** • Determine the slope of a line given a table of values, a graph, two points on the line, and an equation written in various forms. A(3)(A) • Calculate the rate of change of a linear function represented tabularly, graphically, or algebraically in context of mathematical and real-world problems. A(3)(B) • Decide whether relations represented verbally, tabularly, graphically, and symbolically define a function. A(12)(A)
• Write one-variable inequalities and write and solve (with and without models) one-variable equations with variables on both sides using rational number coefficients and constants. 8(8)(A), 8(8)(C) • Write a real-world problem given an equation or inequality with variables on both sides using rational number coefficients and constants. 8(8)(B)	• Solve linear equations and inequalities, including those for which the application of the distributive property is needed and variables are included on both sides. A(5)(A), A(5)(B)
• Identify and verify the values of x and y that simultaneously satisfy two linear equations in the form $y = mx + b$ from the intersections of the graphed equations. 8(9)(A)	• Solve systems of two linear equations with two variables for mathematical and real-world problems. A(5)(C) • Graph systems of two linear equations in two variables on the coordinate plane and determine the solutions, if they exist. A(3)(F) • Estimate graphically the solutions to systems of two linear equations with two variables in real-world problems. A(3)(G)

Curriculum Analysis
Geometry

What new content moved into the grade 8 curriculum?	*What student expectations in Geometry may be affected by the change in curriculum?*
• Generalize that the ratio of corresponding sides of similar shapes are proportional, including a shape and its dilation. 8(3)(A)	• Apply the definition of similarity, in terms of a dilation, to identify similar figures and their proportional sides and the congruent corresponding angles. G(7)(A) • Prove theorems about similar triangles, including the Triangle Proportionality theorem, and apply these theorems to solve problems. G(8)(A)
• Use similar right triangles to develop an understanding of slope, given as the rate comparing the change in *y*-values to the change in *x*-values $\left(\frac{y_2 - y_1}{x_2 - x_1}\right)$. 8(4)(A)	• Derive and use the distance, slope, and midpoint formulas to verify geometric relationships, including congruence of segments and parallelism, or perpendicularity of pairs of lines. G(2)(B)
• Determine the distance between two points on a coordinate plane using the Pythagorean Theorem. 8(7)(D)	• Derive and use the distance, slope, and midpoint formulas to verify geometric relationships. G(2)(B)
• Use informal arguments to establish facts about the angle sum of triangles, exterior angles of triangles, angles created when parallel lines are cut by a transversal, and angle-angle criterion for similarity of triangles. 8(8)(D)	• Investigate patterns to make conjectures about geometric relationships, including angles formed by parallel lines cut by a transversal, criteria required for triangle congruence, special segments of triangles, diagonals of quadrilaterals, interior and exterior angles of polygons, and special segments and angles of circles choosing from a variety of tools. G(5)(A) • Verify theorems about angles formed by the intersection of lines and line segments, including vertical angles, and angles formed by parallel lines cut by a transversal, and prove equidistance between the endpoints of a segment and points on its perpendicular bisector and apply these relationships to solve problems. G(6)(A) • Apply the Angle-Angle criterion to verify similar triangles and apply the proportionality of the corresponding sides to solve problems. G(7)(B)

• Generalize properties of orientation and congruence of transformations, including rotations. 8(10)(A) • Differentiate between those transformations that preserve congruence and those that do not, including rotations. 8(10)(B) • Explain the effect of a transformation of a two-dimensional shape on a coordinate plane using an algebraic representation, **including rotations.** 8(10)(C)	• Describe and perform transformations of figures in a plane using coordinate notation. G(3)(A) • Determine the image or pre-image of a figure under a composition of rigid transformations, a composition of non-rigid transformations, and a composition of both, including dilations where the center can be any point in the plane. G(3)(B) • Identify the sequence of transformations that will carry a given pre-image onto an image on and off the coordinate plane. G(3)(C) • Identify and distinguish between reflectional and rotational symmetry in a plane figure. G(3)(D) • Apply the definition of congruence, in terms of rigid transformations, to identify congruent figures and their corresponding sides and angles. G(6)(C)
• Write the equation of a line that contains a given point and is parallel to a given line. A(2)(E) • Write the equation of a line that contains a given point and is perpendicular to a given line. A(2)(F) • Write an equation of a line that is parallel or perpendicular to the X or Y axis, and determine whether the slope of the line is zero or undefined. A(2)(G)	• Derive and use the distance, slope, and midpoint formulas to verify geometric relationships, including congruence of segments and parallelism or perpendicularity of pairs of lines. G(2)(B) • Determine an equation of a line parallel or perpendicular to a given line that passes through a given point. G(2)(C)

Curriculum Analysis
Algebra II

What new content moved into the Algebra I curriculum?	*What student expectations in Algebra II may be affected by the change in curriculum?*
• Determine the effects on the graph of the parent function $f(x) = x$ when $f(x)$ is replaced by $af(x)$, $f(x) + d$, $f(x - c)$, and $f(bx)$ for specific values of a, b, c, and d. A(3)(E) • Determine the effects on the graph of the parent function $f(x) = x^2$ when $f(x)$ is replaced by $af(x)$, $f(x) + d$, $f(x - c)$, and $f(bx)$ for specific values of a, b, c and d. A(7)(C)	• Determine the effect on the graph of $f(x) = \sqrt{x}$ when $f(x)$ is replaced by $af(x)$, $f(x) + d$, $f(bx)$, and $f(x - c)$ for specific positive and negative values of a, b, c, and d. 2A(4)(C) • Determine the effects on the key attributes on the graphs of $f(x) = b^x$ and $f(x) = \log_b(x)$, where b is 2, 10, and e when $f(x)$ is replaced by $af(x)$, $f(x) + d$, and $f(x - c)$ for specific positive and negative real values of a, c, and d. 2A(5)(A) • Analyze the effects on the graphs of $f(x) = x^3$ and $f(x) = \sqrt[3]{x}$ when $f(x)$ is replaced by $af(x)$, $f(bx)$, $f(x - c)$, and $f(x) + d$ for specific positive and negative real values of a, b, c, and d. 2A(6)(A) • Analyze the effect on the graph of $f(x) = 1/x$ when $f(x)$ is replaced by $af(x)$, $f(bx)$, $f(x-c)$, and $f(x) + d$ for specific positive and negative real values of a, b, c, and d. 2A(6)(G)
• Using technology, calculate the correlation coefficient between two quantitative variables and interpret this quantity as a measure of the strength of the linear association. A(4)(A) • Compare and contrast association and causation in real-world problems. A(4)(B) • Using technology, write quadratic functions that provide a reasonable fit to data to estimate solutions and make predictions for real-world problems. A(8)(B) • Using technology, write exponential functions that provide a reasonable fit to data and make predictions for real-world problems. A(9)(E)	• Using technology, formulate quadratic and square root equations given a table of data. 2A(4)(E) • Analyze data to select the appropriate model from among linear, quadratic, and exponential models. 2A(8)(A) • Using technology, use regression methods to write linear, quadratic, and exponential functions from a given set of data. 2A(8)(B) • Predict and make decisions and critical judgments from a given set of data using linear, quadratic, and exponential models. 2A(8)(C)

• Write equations of quadratic functions given the vertex and another point on the graph, write the equation in vertex form ($f(x) = a(x - h)^2 + k$), and rewrite the equation from vertex form to standard form ($f(x) = ax^2 + bx + c$). A(6)(B) • Write quadratic functions when given real solutions and graphs of their related equations. A(6)(C) • Graph quadratic functions on the coordinate plane and use the graph to identify key attributes, if possible, including x-intercept, y-intercept, zeros, maximum value, minimum value, vertex, and the equation of the axis of symmetry. A(7)(A)	• Write the quadratic function given three specified points in the plane. 2A(4)(A) • Write the equation of a parabola using given attributes, including vertex, focus, directrix, axis of symmetry, and direction of opening. 2A(4)(B) • Transform a quadratic function $f(x) = ax^2 + bx + c$ to the form $f(x) = a(x - h)^2 + k$ to identify the different attributes of $f(x)$. 2A(4)(D)
• Identify terms of arithmetic and geometric sequences when the sequences are given in function form using recursive processes. A(12)(C) • Write a formula for the n^{th} term of arithmetic and geometric sequences, given the value of several of their terms. A(12)(D)	• Formulate exponential and logarithmic equations that model real-world situations, including exponential relationships written in recursive notation. 2A(5)(B) • Analyze data to select the appropriate model from among linear, quadratic, and exponential models. 2A(8)(A)
• Determine the quotient of a polynomial of degree one and polynomial of degree two when divided by a polynomial of degree one and polynomial of degree two when the degree of the divisor does not exceed the degree of the dividend. A(10)(C)	• Determine the quotient of a polynomial of degree three and of degree four when divided by a polynomial of degree one and of degree two. 2A(7)(C) • Determine the sum, difference, product, and quotient of rational expressions with integral exponents of degree one and of degree two. 2A(7)(F)
• Simplify numerical radical expressions involving square roots. A(11)(A) • Simplify numeric and algebraic expressions using the laws of exponents, including integral and rational exponents. A(11)(B)	• Rewrite radical expressions that contain variables to equivalent forms. 2A(7)(G) • Solve equations involving rational exponents. 2A(7)(H)

Matrix: Curriculum Analysis

Course: _____

What new content moved into the grade 8 curriculum?	*What student expectations in Algebra I may be affected by the change in curriculum?*

Action Plan

Action Needed	Who is Responsible for this Action?	Possible Questions	Target Date	Resources Needed
	☐ Me ☐ Campus ☐ District			
	☐ Me ☐ Campus ☐ District			
	☐ Me ☐ Campus ☐ District			
	☐ Me ☐ Campus ☐ District			
Notes:				