WDHS Curriculum Map: created by Julia Holloway, Jen Stuart, Mike Seeley
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Time Interval/ Content	*Standards/ Strands*	*Essential Questions*	*Skills*	*Assessment*
Unit 1: Reasoning with Expressions and Equations *Holt Sections:* 2.1-2.5, 3.1-3.6, 6.1-6.6 (Algebra 1) *65 days*	• 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. • N-Q-2. Define appropriate quantities for the purpose of descriptive modeling. • N-Q-3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. • A-CED-1. Create equations and inequalities in one variable and use them to solve problems. • A-CED-2. Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. • 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. • A-CED-4. Represent constraints by equations or inequalities, and interpret solutions as viable or non-	• How do units help to solve problems? • What is an inequality? • What is an equation? • What do the algebraic and graphical solutions to an equation or inequality represent? • How do you choose the best method for solving a system of linear equations? • What does the solution to a system of equations represent?	*Students will understand that…* • Use of units is an important part of understanding and solving problems. • An inequality is a representation of two quantities which may not be equivalent. • The solution to an inequality represents a range of possible solutions that may or may not be relevant to a given situation. • Although any solution method for solving systems of equations will work, there is an optimal method based on the representation of the equations. • The solution to a system of equations is represented by its intersection (if there is an intersection). *Students will know…* • The definitions of inequality, compound inequality, intersection, union, and solution of an inequality. • How to solve inequalities using a variety of strategies. • The definitions of system of	• Classwork • District Assessments • Homework • Quizzes • Test • Projects

	viable options in a modeling context. • A-SSE-1a. Interpret parts of an expression, such as terms, factors, and coefficients. • A-SSE-1b. Interpret complicated expressions by viewing one or more of their parts as a single entity. • A-SSE- 3. Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. • A-REI-3. Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. • 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. • A-REI-6. Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables. • 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). • 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		linear equations, solutions of a system of linear equations. • The definition of a linear inequality and solutions of linear inequalities. *Students will be able to…* • Choose and implement a level of accuracy when solving problems. • Develop inequalities in order to represent real-world situations. • Determine the appropriateness of the model, method, and solution in regards to the situation. • Apply the solutions to these inequalities in context. • Solve systems of linear equations using the methods of substitution, elimination, and graphing. • Apply systems of linear equations in a real-world context.	

	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. • A-REI-12. Graph the solutions to a linear inequality in two variables as a half-plane (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.			
Unit 2: Interpreting and Building Functions *Holt Sections*: 4.1-4.6, 5.1-5.Ext, 9.1-9.1, 11.1-11.4 (Algebra 1) 65 days	• F-IF-1 Understand that a function from one set to another set assigns each element of the domain to 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)*. • F-IF-2 Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms	• What is a function? • How are the different representations of a function related? • What is represented by the x- and y-intercepts of a linear equation? • How can the slopes of lines be interpreted in a given situation? • What does the graph of a quadratic	*Students will understand that…* • A function is a type of relation that pairs each domain value with exactly one range value. • The equation, table, and graph of a function all provide the same information, but it is more evident in one representation than another. • The x- and y- intercepts can represent a "starting point" for each of the respective variables.	• Classwork • District Assessments • Homework • Quizzes • Test • Projects

	of a context. • F-IF-3. Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. • 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. • F-IF-5. Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. • 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. • F-BF-1a. Write a function that describes a relationship between two quantities (Determine an explicit expression, a recursive process, or steps for calculation from a context.) • 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. • F-LE-1a. Prove that linear functions grow by equal differences over equal intervals, and that	equation look like and how can it be changed? • What is an exponential function, how is it graphed and how can it be changed?	• Linear functions change at a constant rate, and the direction of the slope represents the relationship between variables. • The graph of a quadratic equation is a parabola, and it can be transformed in much the same way as a linear equation. • The definitions of axis of symmetry, parabola, discriminant, maximum, minimum, vertex, and zero of a function. *Students will know…* • The definitions of continuous graph, discrete graph, relation, domain, range, function, independent, dependent, function notation, correlation, and sequence. • How to identify, write, and graph functions. • How to recognize and continue arithmetic sequences. • The definitions of linear equation, linear function, parallel lines, perpendicular lines, rate of change, slope, x-intercept, y-intercept, transformation, parent function, axis of symmetry, vertex. • The slope formula, point-slope form of a linear function, slope-intercept form of a linear function.	

	exponential functions grow by equal factors over equal intervals. • F-LE-1b. Recognize situations in which one quantity changes at a constant rate per unit interval relative to another. • 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). • 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. • F-LE-5. Interpret the parameters in a linear or exponential function in terms of a context.		• Identify a quadratic function from a graph, equation, or a set of points. • Graph a quadratic equation. • How to transform the graph of a quadratic function. *Students will be able to…* • Discuss functions in terms of their domain and range. • Write a function using function notation. • Apply functions and arithmetic sequences in a real-life context. • Graph a line in different forms. • Transform a linear function. • Compare lines using slopes and y-intercepts. • Find the slope and intercepts of a line. • Apply linear functions in a real-world context.	
Unit 3: Congruence *Holt Sections:* 4.1-4.6, 12.1-12.7 (Geometry) 22 days	• 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. • G-CO-2. Represent transformations in the plane using, e.g., transparencies and geometry	• Can all terms be defined? Can all concepts be proven? Explain. • What does it mean for two figures to be congruent? • How can the congruence of two	*Students will understand that…* • Theorems about lines, angles, triangles, and parallelograms can be proven using other theorems, definitions, and postulates. • Some transformations preserve angle and distance, whereas others do not.	• Classwork • District Assessments • Homework • Quizzes • Test • Projects

	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). • G-CO-3. Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself. • G-CO-4. Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments. • 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. • 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. • G-CO-7. Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if	geometric figures be determined? • What effect do rigid motions have on geometric figures?	*Students will know…* • The definitions of congruence, angle, circle, perpendicular line, parallel line, line segment, point, line, distance on a line, and distance around a circular arc. • Definitions of reflections, rotations, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments. *Students will be able to…* • Construct transformations of geometric figures and determine the effect of these transformations on said figures. • Describe geometric figures using the language of transformations. • Discuss transformations in terms of the coordinate plane.	

	corresponding pairs of sides and corresponding pairs of angles are congruent. • 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. • 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*. • 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*. • 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*.			

Unit 4: Interpreting Categorical and Quantitative Data *Holt Sections:* 10.1-10.7 (Algebra 1) 22 days	• S-ID-1. Represent data with plots on the real number line (dot plots, histograms, and box plots). • 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. • 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). • 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. • 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. • S-ID-6. Represent data on two quantitative variables on a scatter	• How can one use data to come to conclusions about a population or experiment? • How can one determine the correct measure of center to use for a data set? • How does the context of a linear relationship allow one to interpret the slope and y-intercept?	*Students will understand that…* • Statistics can be misleading if not used correctly or used out of context. • Certain statistics are appropriate for certain data sets. • Summarizing and representing data graphically allows one to generate conclusions about a situation. *Students will know…* • The definitions of mean, median, mode, range, interquartile range, standard deviation, frequency, correlation, and causation. *Students will be able to…* • Create different statistical plots (dot plots, histograms, box plots, scatterplot) based on the data in a given situation. • Estimate population percentages by using the mean and standard deviation for a normalized data set. • Use technology to find the equation for a line of best fit.	• Classwork • District Assessments • Homework • Quizzes • Test • Projects

	plot, and describe how the variables are related. • S-ID-7. Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data. • S-ID-8. Compute (using technology) and interpret the correlation coefficient of a linear fit. • S-ID-9. Distinguish between correlation and causation.			