HENRY LEARNING PROGRESSIONS

GSE Algebra I
Math

Quarter 1			Quarter 2	
Unit 1	**Unit 2**	**Unit 3**	**Unit 4**	**Unit 5**
4 Weeks	*2 Weeks*	*1 Week*	*3 Weeks*	*6 Weeks*
Relationships Between Quantities and Expressions	**Linear Equations and Inequalities**	**Function Fundamentals** *Revisit these standards throughout Units 4 - 7*	**Linear Functions**	**Modeling and Analyzing Exponential Functions**
Extend the properties of exponents to rational exponents. MGSE9-12.N.RN.2 (Properties of rational & irrational numbers) Use properties of rational and irrational numbers. MGSE9-12.N.RN.3 (Properties of rational & irrational numbers) Reason quantitatively and use units to solve problems. MGSE9-12.N.Q.1 MGSE9-12.N.Q.1a MGSE9-12.N.Q.1b MGSE9-12.N.Q.1c MGSE9-12.N.Q.2 MGSE9-12.N.Q.3 (Reason quantitatively & use units to solve problems) Interpret the structure of expressions MGSE9-12.A.SSE.1 (Interpret expressions in context) MGSE9-12.A.SSE.1a MGSE9-12.A.SSE.1b (Interpret formulas & expressions in context) Perform arithmetic operations on polynomials MGSE9-12.A.APR.1 (Add, subtract & multiply polynomials)	Create equations that describe numbers or relationships MGSE9-12.A.CED.1 (Create equations & inequalities in one variable) MGSE9-12.A.CED.2 (Linear equations in two or more variables) MGSE9-12.A.CED.3 (Represent constraints with equations, inequalities, and systems) MGSE9-12.A.CED.4 (Rearrange formulas to highlight a quantity of interest) Understand solving equations as a process of reasoning and explain the reasoning MGSE9-12.A.REI.1 (Justify one-solution equations) Solve equations and inequalities in one variable. MGSE9-12.A.REI.3 Solve systems of equations MGSE9-12.A.REI.5 (Show and explain elimination) MGSE9-12.A.REI.6 (Linear equations systems)	Understand the concept of a function and use function notation MGSE9-12.F.IF.1 (Input vs. output) MGSE9-12.F.IF.2 (Function notation) Interpret functions that arise in applications in terms of the context MGSE9-12.F.IF.4 (Characteristics) MGSE9-12.F.IF.5 MGSE9-12.F.IF.6 (Rate of change) Analyze functions using different representations MGSE9-12.F.IF.9 (Compare functions) **Note: Expose students to various types of graphs to explore the various characteristics of functions without naming them.* *Once you have started naming the functions in Units 4, 5, and 6, continue to compare the new functions with previous functions learned.*	Represent and solve equations and inequalities graphically MGSE9-12.A.REI.10 (Connecting graphs & solutions of equations) MGSE9-12.A.REI.11 (Show f(x)=g(x) using graphs, tables, or successive approximations) MGSE9-12.A.REI.12 (Graph solution set to linear inequality in 2 variables) Build a function that models a relationship between two quantities MGSE9-12.F.BF.1 (Write a function) MGSE9-12.F.BF.1a (Explicit expression & recursive process MGSE9-12.F.BF.2 (arithmetic sequences) Understand the concept of a function and use function notation MGSE9-12.F.IF.3 (Arithmetic sequences) Analyze functions using different representations. MGSE9-12.F.IF.7 (Graph linear functions by hand and with technology) MGSE9-12.F.IF.7a (Graph linear functions and show characteristics)	Create equations that describe numbers or relationships MGSE9-12.A.CED.1 (Create equations & inequalities in one variable) MGSE9-12.A.CED.2 (Exponential equations in two or more variables) Build a function that models a relationship between two quantities MGSE9-12.F.BF.1 (Write a function explaining relationship between two quantities) MGSE9-12.F.BF.1a (Explicit expression & recursive process) MGSE9-12.F.BF.2 (Geometric sequences) Build new functions from existing functions MGSE9-12.F.BF.3 (Identify the effects on graphs) Understand the concept of a function and use function notation MGSE9-12.F.IF.3 (Geometric sequences) Analyze functions using different representations MGSE9-12.F.IF.7 (Graph exponential functions by hand and with technology) MGSE9-12.F.IF.7e (Graph exponential functions showing intercepts and end behavior)

- Keep in mind standards taught previously can still be revisited and connected to current topics of instruction. Additionally, it is encouraged that teachers integrate standards as much as possible to complete pacing rather than teach standards in isolation. If students are ready, they can move ahead of the progression.
- The Standards for Mathematical Practice are interwoven and should be addressed throughout the year in as many different units and tasks as possible.

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Quarter 3		Quarter 4	
Unit 6	**Unit 7**	**Unit 8**	**Unit 9**
8 Weeks	*3 Weeks*	*3 Weeks*	*4 Weeks*
Modeling and Analyzing Quadratic Functions	**Comparing & Contrasting Functions**	**Describing Data**	**All**
Interpret the structure of expressions MGSE9-12.A.SSE.2 (Equivalent forms of expressions) Write expressions in equivalent forms to solve problems MGSE9-12. A.SSE.3 (Equivalent form of expressions) MGSE9-12. A.SSE.3a (Factor quadratic to reveal zeroes) MGSE9-12.A.SSE.3b (Completing the square) Create equations that describe numbers or relationships. MGSE9-12.A.CED.1 (Create quadratic equations to solve problems) MGSE9-12.A.CED.2 (Quadratic equations in 2 variables) MGSE9-12.A.CED.4 (Rearrange formulas to highlight a quantity of interest) Solve equations and inequalities in one variable MGSE9-12.A.REI.4 (Solve quadratics in one variable) MGSE9-12.A.REI.4a (Completing the square) MGSE9-12.A.REI.4b (Solve quadratics by inspection) Build a function that models a relationship between two quantities MGSE9-12.F.BF.1 (Write a function explaining relationship between two quantities) Build new functions from existing functions MGSE9-12.F.BF.3 (Identify the effects on graphs) Analyze functions using different representations MGSE9-12.F.IF.7, 7a (Graph quadratic functions) MGSE9-12.F.IF.8, 8a (Equivalent forms of functions) (Factoring & completing the square to show zeroes, extremes and symmetry)	Construct and compare linear, quadratic, and exponential models and solve problems MGSE9-12.F.LE.1 (Linear vs exponential) MGSE9-12. F.LE.1a (Growth of linear v. exponential functions) MGSE9-12. F.LE.1b (Constant rate per unit) MGSE9-12. F.LE.1c (Growth or decay by constant percent rate per unit) MGSE9-12.F.LE.2 MGSE9-12.F.LE.3 (Changes in rate and relating to context) Interpret expressions for functions in terms of the situation they model MGSE9-12.F.LE.5 (Interpret parameters) Build new functions from existing functions MGSE9-12.F.BF.3 (Identify the effects on graphs) Analyze functions using different representations MGSE9-12.F.IF.7 (Graph functions)	Summarize, represent, and interpret data on a single count or measurement variable MGSE9-12.S.ID.1 (Dot plots, histograms & box plots) MGSE9-12.S.ID.2 (Compare data distribution) MGSE9-12.S.ID.3 (Shape, center & spread) Summarize, represent, and interpret data on two categorical and quantitative variables MGSE9-12.S.ID.5 MGSE9-12.S.ID.6 (Bivariate data) MGSE9-12.S.ID.6a MGSE9-12.S.ID.6c (Function of best fit) Interpret linear models MGSE9-12.S.ID.7 MGSE9-12.S.ID.8 MGSE9-12.S.ID.9 (Slope, correlation coefficient, causation & correlation)	1 Week Review of Standards 3 Weeks Continue to provide data-driven, personalized enrichment experiences to meet the needs of learners.

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