HENRY LEARNING PROGRESSIONS

GSE Algebra II
Math

Quarter 1			Quarter 2
Unit 1	**Unit 2**	**Unit 3**	**Unit 4**
4 Weeks	*4 Weeks*	*5 Weeks*	*8 Weeks (continues 2nd semester)*
Quadratics Revisited	**Operations with Polynomials**	**Polynomial Functions**	**Rational and Radical Relationships**
Perform arithmetic operations with complex numbers. MGSE9-12.N.CN.1 (Complex numbers) MGSE9-12.N.CN.2 (Complex numbers & properties) MGSE9-12.N.CN.3 (Conjugate of complex numbers) Use complex numbers in polynomial identities and equations. MGSE9-12.N.CN.7 (Solve quadratics with complex solutions) MGSE9-12.N.CN.8 (Factoring with complex solutions) Solve equations and inequalities in one variable MGSE9-12.A.REI.4 (Solve quadratics in 1 variable) MGSE9-12.A.REI.4b (Solve quadratic equations by inspection) Extend the properties of exponents to rational exponents. MGSE9-12.N.RN.1 (Rational exponents) MGSE9-12.N.RN.2 (Expressions with radicals & rational exponents)	Perform arithmetic operations on polynomials. MGSE9-12.A.APR.1 (Add, subtract & multiply polynomials) MGSE9-12.A.APR.5 (Binomial Theorem) Rewrite rational expressions. MGSE9-12.A.APR.6 (Rewrite rational expressions) Build a function that models a relationship between two quantities. MGSE9-12.F.BF.1 (Write a function) MGSE9-12.BF.1b (Combine standard functions) MGSE9-12.BF.1c (Compose functions) Build new functions from existing functions. MGSE9-12.F.BF.4 (Inverse functions) MGSE9-12.F.BF.4a (f(x)=c & inverse) MGSE9-12.F.BF.4b (Use composition to verify inverses) MGSE9-12.F.BF.4c (Values of inverse function from graph or table)	Use complex numbers in polynomial identities and equations. MGSE9-12.N.CN.9 (Fundamental Theorem of Algebra) Interpret the structure of expressions. MGSE9-12.A.SSE.1 MGSE9-12.A.SSE.1a MGSE9-12.A.SSE.1b (Interpret expressions; interpret parts & terms of expressions) MGSE9-12.A.SSE.2 (Equivalent expressions) Understand the relationship between zeros and factors of polynomials MGSE9-12.A.APR.2 (Remainder Theorem) MGSE9-12.A.APR.3 (Identify zeros) Use polynomial identities to solve problems. MGSE9-12.A.APR.4 (Polynomial identities) Interpret functions that arise in applications in terms of the context MGSE9-12.F.IF.4 (Characteristics of functions) Analyze functions using different representations MGSE9-12.F.IF.7 (Graph functions) MGSE9-12.F.IF.7c (Graph polynomial functions) MGSE9-12.F.IF.7d (Graph rational functions)	Rewrite rational expressions MGSE9-12.A.APR.7 (Rewrite rational expressions) Write expressions in equivalent forms to solve problems MGSE9-12.A.CED.1 (Create equations & inequalities – 1 variable) MGSE9-12.A.CED.2 (Create equations & inequalities – 2 variables) Understand solving equations as a process of reasoning and explain the reasoning MGSE9-12.A.REI.2 (Solve simple radical & rational equations) Interpret functions that arise in applications in terms of the context. MGSE9-12.F.IF.4 (Characteristics of functions) MGSE9-12.F.IF.5 (Domains of functions) Analyze functions using different representations. MGSE9-12.FIF.7 (Graph functions) MGSE9-12.F.IF.7b (Graph square root, cube root, piecewise, step & absolute value functions) MGSE9-12.F.IF.7d (Graph rational functions)

- 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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Math

Quarter 3		Quarter 4	
Unit 4	**Unit 5**	**Unit 6**	**Unit 7**
8 Weeks (cont'd from 1st semester)	*5 Weeks*	*5 Weeks*	*5 Weeks*
Rational and Radical Relationships	**Exponential and Logarithms**	**Mathematical Modeling**	**Inferences and Conclusions from Data**
(cont'd from Qtr. 2)	Write expressions in equivalent forms to solve problems MGSE9-12.A.SSE.3 (Equivalent expressions) MGSE9-12.A.SSE.3c (Properties of exponents) Analyze functions using different representation MGSE9-12.F.IF.7 (Graph functions) MGSE9-12.F.IF.7e (Graph exponential & logarithmic functions) MGSE9-12.F.IF.8 (Write a function) MGSE9-12.F.FI.8b (Interpret expressions) Build new functions from existing functions MGSE9-12.F.BF.5 (Inverse relationships) Construct and compare linear, quadratic, and exponential models and solve problems MGSE9-12.F.LE.4 (Express exponential models as logarithmic)	Write expressions in equivalent forms to solve problems MGSE9-12.A.SSE.4 (Derive formula for sum of finite geometric series) MGSE9-12.A.CED.1 (Create equations & inequalities – 1 variable) MGSE9-12.A.CED.2 (Create equations & inequalities – 2 variables) MGSE9-12.A.CED.3 (Represent constraints) MGSE9-12.A.CED.4 (Rearrange formulas) Represent and solve equations and inequalities graphically MGSE9-12.A.REI.11 (Solutions to equations) Interpret functions that arise in applications in terms of the context MGSE9-12.F.IF.6 (Average rate of change) MGSE9-12.F.IF.9 (Compare 2 functions) Build new functions from existing functions MGSE9-12.F.BF.3 (Build new functions from existing functions)	Summarize, represent, and interpret data on a single count or measurement variable MGSE9-12.S.ID.2 (Shape and data distribution) MGSE9-12.S.ID.4 (Fit to a normal distribution) Understand and evaluate random processes underlying statistical experiments MGSE9-12.S.IC.1 (Inferences from a random sample) MGSE9-12.S.IC.2 (Using simulations) Make inferences and justify conclusions form sample surveys, experiments, and observational studies MGSE9-12.S.IC.3 (Randomization) MGSE9-12.S.IC.4 (Population mean) MGSE9-12.S.IC.5 (Compare 2 treatments) MGSE9-12.S.IC.6 (Evaluate reports based on data)

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