High School Mathematics – Curriculum Overview

	Algebra Basics 9	Algebra I 7-10	Geometry 8-11	Algebra II 9-12	FST 10-12	AP Calculus 12	Personal Finance 12
Quarter 1	**Connections to Algebra** • Order of Operations • Words into math symbols **Real Numbers** • Absolute Value • Distributive Property • Combining Like Terms **Solving Linear Equations** • Multi-Step • Ratio's/Rates/Percents **Graphing Linear Equations** • Coordinate Plane	**Exps/ Eqns/ Functions** • Order of Operations • Words into symbols **Real Numbers** • Absolute Value • Distributive Property • Combining Like Terms **Solving Linear Equations** • Multi-Step • Ratios/Rates/Percents **Graphing Linear Eqns** • Coordinate Plane	**Tools of Geometry** • Patterns/Points/ Lines, and Planes **Reasoning / Proof** • Cond/Bi-Cond **Parallel & Perpendicular Lines** • Transversals • Proving LinesParallel **Congruent Triangles** • SSS/SAS/ASA/AAS • CPCTC • HL Theorem	**Equations/Inequalities** • Rewrite Equations & Formulas • Solving Linear Eqns, Inequalities, Abs. Value **Linear Equations** • Graphing and writing linear equations • Piecewise Functions • Abs. Value Functions **Systems of Linear Eqns/Inequalities** • Solving Systems • Linear Programming • Systems in 3-Variables	**Function Analysis and Applications** • Parent Functions • Functions as Real-World Models • Transformations • Symmetries • Inverses • Continuity • End Behavior • Monotonicity & Extrema • Rational Functions	**Limits and Derivatives** • Limits: Graphs and Equations • Derivative Techniques • Continuity & Differentiability • Intermediate Value Th. & Mean Value Th.	**Introduction to Personal Finance** • Biblical Perspective on Money and Financial Responsibility • Stewardship and Tithing • Brief History of the Monetary System • Employment and Taxes • Foreign Currency • Financial Planning • ABC's of Saving
Quarter 2	• Slope of a Line • Slope-Intercept Form **Writing Linear Equations** • Given Two Points • Standard Form • Perpendicular Lines **Linear Inequalities** • Multi-Step • "And", "Or" • Absolute Value Inequalities **Systems of Equations** • Solve by graphing	• Slope of a Line • Slope-Intercept Form **Writing Linear Equations** • Given Two Points • Standard Form • Perpendicular Lines **Linear Inequalities** • Multi-Step • "And", "Or," & Absolute Value **Systems of Equations** • Solve by graphing • Solve by Substitution • Solve by Combinations	**Relationships w/in Triangles** • Midsegment/Bisector • Concurrent Lines **Quadrilaterals** • Classifying • Properties of Parallelograms, Trapezoids, Kites **Areas** • Parallelograms and Triangles • Pythagorean Theorem and its Converse	**Matrices** • Matrix Operations • Determinants • Cramer's Rule • Inverse Matrices • Solve Systems using Inverse Matrices **Quadratic Functions** • Graph Quadratics • Solving Quadratic Equations • Complex Numbers • Quadratic Inequalities **Polynomial Functions** • Polynomial Operations • Factoring	• Polynomial, Exponential & Logarithmic Applications **Trigonometry** • Right Triangle Trig • Trig Applications • Trigonometric (Circular) Functions • Transformations of Circular Functions • Inverse and Reciprocal Trig f(x)s	**Applications of Derivatives** • Related Rates • Straight Line Motion • Function Analysis • Optimization **Integrals** • Indefinite Integrals • U-Substitution • Area under a curve	• Investing • Checking Accounts: opening, maintaining, and reconciling • Budgeting including long and short term goals **Financing & Debt** • Credit Cards, terms, rates, and fees • Debit Cards • How to apply for a loan • Financing college • Automobiles: purchasing and leasing • Interest Rates • Bankruptcy • Credit Scores **Career Planning** • Entrepreneurship • Preparing a Resume
Quarter 3	• Solve by Substitution • Solve by Combinations **Exponents & Functions** **Quadratic Equations** • Solve by Graphing • Quadratic Formula • Discriminant **Polynomials/Factoring** • Add/Sub & Multiply • Quadratic Equations in Factored Form	• Solve Systems of Inequalities **Exponents & Functions** **Polynomials/Factoring** • Add, Subtract, Multiply • Quadratic Equations in Factored Form • Factoring $x^2 + bx + c$ • Factoring $ax^2 + bx + c$ **Quadratic Equations** • Solve by Graphing	• Special Right Triangles 30-60-90 and 45-45-90 • Trapezoids / Rhombus/ Kite • Circles/Arcs/Sectors • Geometric Probability **Similarity** • Ratios/ Proportions • Similar Polygons • Similarity in Right Triangles • Perimeters and Areas of Similar Figures	• Rational Zeros • Analyze the graphs of polynomial functions **Powers, Roots & Radicals** • Rational Exponents • Power Functions • Inverse Functions • Graph Square/Cube Root • Solve Radical Equations • Mean, Mode, Median • Box & Whisker Plots **Exponential/Log f(x)s** • Exponent Properties • Exp. Growth and Decay • Graph Exponential Functions • Logarithmic Functions	• Solving Trig Equations • Trigonometric Identities **Statistics** • Probability • Multiplication Counting Principle and Permutations • Independent / Mutually Exclusive Events • Expected Value	• Definite Integrals • Fundamental Theorem of Calculus **Applications of Integrals** • Straight Line Motion • Average Value • Areas and Volumes	
Quarter 4	• Factoring $x^2 + bx + c$ • Factoring $ax^2 + bx + c$ **Rational Expressions and Equations** • Proportions • Simplifying Rational Expressions	• Quadratic Formula • Discriminant • Complete the Square **Rational Expressions and Equations** • Proportions • Simplifying Rational Expressions	**Right Triangle Trig** • Sin/ Cos/ Tan **Surface Area and Volume** • Nets/ Prisms/ Cylinders • Pyramids and Cones • Spheres **Circles** • Tangent Lines, Chords/Arcs • Inscribed Angles	**Rational Equations & Functions** • Inverse/Joint Variation • Graph Hyperbolas • Rational expression operations **Conic Sections** • Distance/Midpt. Formulas • Parabolas • Circles • Ellipses / Hyperbolas	• Sequences • Series • Combinations, Pascal's Triangle, & the Binomial Theorem • Measures of Center and Spread • Binomial Probabilities • The Standard Normal Distribution	• Derivatives of e^x, ln x, inverse trig functions • Slope Fields • Separable Differential Equations **AP Review & Exam** • Additional Calculus Topics: Integration by Parts, etc.	

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