Liberal Arts Mathematics 1 Prescriptive addresses the need for an elective course that focuses on reinforcing, deepening, and extending a student's mathematical understanding. Liberal Arts Mathematics 1 starts with a review of problem-solving skills before moving on to a variety of key algebraic, geometric, and statistical concepts. Throughout the course, students hone their computational skills and extend their knowledge through problem solving and real-world applications.

Course topics include problem solving; real numbers and operations; functions and graphing; systems of linear equations; polynomials and factoring; geometric concepts such as coordinate geometry and properties of geometric shapes; and descriptive statistics.

Within each Liberal Arts Mathematics 1 lesson, students are supplied with a scaffolded note-taking guide, called a Study Sheet, and are given ample opportunity to practice computations in low-stakes Checkup activities before moving on to formal assessment. Additionally, students will have the opportunity to formulate and justify conclusions as they extend and apply concepts through printable exercises and "in-your-own-words" interactive activities.

This course is built to Florida's Next Generation Sunshine State Standards and Benchmarks.

Length: Two Semesters

Unit 1: Solving Equations and Inequalities

- Solving Linear Equations
- Solving Multistep Linear Equations
- Solving Linear Inequalities
- Literal Equations
- Solving Absolute Value Equations and Inequalities
- Measurement and Units
- Solving Equations and Inequalities Wrap-Up

Unit 2: Functions

- Domain and Range
- Identifying Functions
- Graphs of Functions
- Functions Wrap-Up

Unit 3: Linear Equations

- Slope
- Slope-Intercept Equation of a Line
- Point-Slope Equation of a Line
- Linear Inequalities
- Two-Variable Systems: Graphing

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- Two-Variable Systems: Substitution
- Two-Variable Systems: Elimination
- Two-Variable Systems of Inequalities
- Systems of Linear Equations Wrap-Up

Unit 4: Exponents and Exponential Functions

- Exponents
- Exponential Functions
- Graphs of Exponential Functions
- Exponential and Linear Growth
- Solving Exponential Equations
- Exponents and Exponential Functions Wrap-Up

Unit 5: Polynomials

- What Is a Polynomial?
- Adding and Subtracting Polynomials
- Multiplying Binomials
- Multiplying Polynomials
- Polynomials Wrap-Up

Unit 6: Quadratic Equations and Functions

- Solving Quadratic Equations
- Completing the Square
- The Quadratic Formula
- Graphs of Quadratic Functions
- Nonlinear Systems of Equations
- Linear, Quadratic, and Exponential Functions
- Performance Task: Pricing for Profit
- Quadratic Equations and Functions Wrap-Up

Unit 7: Nonlinear Functions

- Parent Functions
- Rational Expressions
- Solving Rational Functions
- Vertical Asymptotes
- Graphing Rational Functions
- Solving Radical Functions
- Nonlinear Functions Wrap-Up

Unit 8: Semester 1 Exam

Unit 9: Descriptive Statistics

- Measures of Center and Spread
- Dot Plots, Box Plots, and Histograms
- Describing Distributions
- Descriptive Statistics Wrap-Up

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Unit 10: Foundations of Geometry

- Introduction to Proofs
- Basic Postulates in Geometry
- Planes and the Space of Geometry
- Intersecting Lines and Proofs
- Parallel Lines and Proofs
- Foundations of Geometry Wrap-Up

Unit 11: Triangles

- What Is a Triangle?
- The Angles of a Triangle
- Congruence
- Congruence Postulates
- Proofs of Congruence
- Similar Triangles
- Similarity Theorems and Proportional Reasoning
- Triangle Theorems
- Medians and Altitudes
- Bisectors and Midsegments
- Performance Task: The Parallax Problem
- Triangles Wrap-Up

Unit 12: Right Triangles

- The Pythagorean Theorem
- Congruent Right Triangles
- Similar Right Triangles
- Right Triangles Wrap-Up

Unit 13: Circles Without Coordinates

- What Is a Circle?
- Chords
- Arcs
- Circles, Angles, and Proofs
- Circumference and Arc Length
- Circles and Triangles
- Circles and Polygons
- Circles Without Coordinates Wrap-Up

Unit 14: Constructions and Transformations

- Constructions
- Paper Folding
- Transformations
- Constructions and Transformations Wrap-Up

Unit 15: Three-Dimensional Solids

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- Three Dimensions
- What Is a Polyhedron?
- Cylinders and Cones
- Platonic Solids
- Surface Area
- Volume
- Spheres
- Similar Solids
- Performance Task: Three-Dimensional Solids
- Three-Dimensional Solids Wrap-Up

Unit 16: Semester 2 Exam

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