

Course Syllabus

Description:

Liberal Arts Mathematics 1 is a course designed to strengthen mathematical skills for study beyond Algebra 1. The course can be used as needed to fit individual district course progression plans and can be taken either before or after Algebra 1. The topics include, but are not limited to, linear equations and inequalities, operations with polynomials, data representation and analysis, geometric constructions, symmetry, similarity, systems of linear equations and inequalities, functions, quadratic equations, exponential equations, rational equations, radical equations, and graphing equations and functions.

Estimated Completion Time: 2 segments/32-36 weeks

Major Topics and Concepts:

Segment I:

Getting Started

- 00.01 Things to Know
- 00.02 Navigation
- 00.03 Lessons & Assessments
- 00.04 Course Specifics
- 00.05 Online Learning 101
- 00.06 Pace
- 00.07 Academic Integrity

Expressions and Equations

- 01.00 Checklist
- 01.01 Interpreting Linear Expressions
- 01.02 Solving Linear Equations
- 01.03 Solving Linear Inequalities
- 01.04 Adding and Subtracting Polynomials
- 01.05 Multiplying Monomials
- 01.06 Multiplying Polynomials
- 01.07 Module Practice Test
- 01.08 Discussion-Based Assessment
- 01.09 Module Exam

Data and Measurement

- 02.00 Checklist
- 02.01 Representing Data
- 02.02 Comparing Data Sets
- 02.03 Interpreting Differences in Data Sets
- 02.04 Using the Normal Distribution
- 02.05 Converting Units
- 02.06 Using Measurements
- 02.07 Module Practice Test
- 02.08 Discussion-Based Assessment

- 02.09 Module Exam

Geometry

- 03.00 Checklist
- 03.01 Defining Geometric Objects
- 03.02 Constructing Geometric Objects
- 03.03 Identifying Symmetry and Transformations
- 03.04 Proving and Using Similarity
- 03.05 Solving Problems with Geometry
- 03.06 Rearranging Formulas
- 03.07 Using Formulas to Solve Problems
- 03.08 Module Practice Test
- 03.09 Discussion-Based Assessment
- 03.10 Module Exam

Relations and Functions

- 04.00 Checklist
- 04.01 Representing Functions
- 04.02 Using Function Notation
- 04.03 Identifying Key Features of Linear Functions
- 04.04 Analyzing Linear Functions
- 04.05 Analyzing Piecewise Functions
- 04.06 Module Practice Test
- 04.07 Discussion-Based Assessment
- 04.08 Module Exam
- 04.09 Segment One Practice Test
- 04.10 Segment One Exam

Segment II

Linear Functions

- 05.00 Checklist
- 05.01 Using Different Forms of Linear Equations
- 05.02 Writing Linear Equations
- 05.03 Graphing Linear Equations
- 05.04 Solving Systems of Linear Equations Graphically
- 05.05 Solving Systems of Linear Equations Algebraically
- 05.06 Solving Linear Inequalities in Two Variables
- 05.07 Module Practice Test
- 05.08 Discussion-Based Assessment
- 05.09 Module Exam

Quadratic Functions

- 06.00 Checklist
- 06.01 Solving Quadratic Equations
- 06.02 Interpreting Quadratic Expressions
- 06.03 Graphing Quadratic Functions

- 06.04 Analyzing Quadratic Functions
- 06.05 Module Practice Test
- 06.06 Discussion-Based Assessment
- 06.07 Module Exam

Exponential Functions

- 07.00 Checklist
- 07.01 Writing Exponential Functions
- 07.02 Analyzing Exponential Functions
- 07.03 Graphing Exponential Functions
- 07.04 Module Practice Test
- 07.05 Discussion-Based Assessment
- 07.06 Module Exam

Other Types of Equations

- 08.00 Checklist
- 08.01 Solving Radical Equations
- 08.02 Solving Rational Equations
- 08.03 Segment Two Practice Test
- 08.04 Segment Two Exam

Course Assessment and Participation Requirements:

To achieve success, students are expected to submit work in each course weekly. Students can learn at their own pace; however, “any pace” still means that students must make progress in the course every week. To measure learning, students complete self-checks, practice lessons, multiple choice questions, projects, discussion-based assessments, and discussions. Students are expected to maintain regular contact with teachers; the minimum requirement is monthly. When teachers, students, and parents work together, students are successful.