Integrated Math III Course Syllabus

Description:

This course allows students to learn while having fun. Interactive examples help guide students' journey through customized feedback and praise. Mathematical concepts are applied to everyday occurrences such as earthquakes, stadium seating, and purchasing movie tickets. Students investigate the effects of an equation on its graph through the use of technology. Students have opportunities to work with their peers on specific lessons.

Estimated Completion Time: 2 segments / 32-36 weeks

Major Topics and Concepts:

Segment I

Welcome

- W.00 Course Information

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

Basics of Geometry

- 01.00 Module One Checklist and Pretest
- 01.01 Basics of Geometry
- 01.02 Basic Constructions
- 01.03 Constructing with Parallel and Perpendicular Lines
- 01.04 Module One Quiz
- 01.05 Constructions with Technology
- 01.06 Introduction to Proofs
- 01.07 Module One Activity
- 01.08 Module One Review and Practice Test
- 01.09 Discussion-Based Assessment
- 01.10 Module One Test

Transformations and Congruence

- 02.00 Module Two Checklist and Pretest
- 02.01 Translations
- 02.02 Reflections
- 02.03 Rotations
- 02.04 Module Two Quiz
- 02.05 Rigid Motion and Congruence
- 02.06 Module Two Activity
- 02.07 Module Two Review and Practice Test
- 02.08 Discussion-Based Assessment
- 02.09 Module Two Test

Coordinate Geometry

- 03.00 Module Three Checklist and Pretest
- 03.01 Using the Coordinates
- 03.02 Slope
- 03.03 Module Three Quiz
- 03.04 Coordinate Applications
- 03.05 Module Three Activity
- 03.06 Module Three Review and Practice Test
- 03.07 Discussion-Based Assessment
- 03.08 Module Three Test

Volume and Figures

- 04.00 Module Four Checklist and Pretest
- 04.01 Formulas
- 04.02 Applications of Volume
- 04.03 Module Four Quiz
- 04.04 Density
- 04.05 3-D Figures
- 04.06 Module Four Activity
- 04.07 Module Four Review and Practice Test
- 04.08 Discussion-Based Assessment
- 04.09 Module Four Test

Trigonometry

- 05.00 Module Five Checklist and Pretest
- 05.01 Introduction to the Unit Circle
- 05.02 Unit Circle and the Coordinate Plane
- 05.03 Module Five Quiz
- 05.04 Trigonometric Functions with Periodic Phenomena
- 05.05 Pythagoras, Trigonometry, and Quadrants
- 05.06 Module Five Activity
- 05.07 Segment One Honors Project

- 05.08 Module Five Review and Practice Test
- 05.09 Discussion-Based Assessment
- 05.10 Module Five Test
- 05.11 Segment One Collaboration Component
- 05.12 Segment One Exam Review
- 05.13 Segment One Exam
- 05.14 Segment One Honors Extension Exam

Segment II

Dividing and Solving Polynomials

- 06.00 Module Six Checklist and Pretest
- 06.01 Polynomial Long Division
- 06.02 Polynomial Synthetic Division
- 06.03 Theorems of Algebra
- 06.04 Rational Root Theorem and Descartes' Rule of Signs
- 06.05 Solving Polynomial Equations
- 06.06 Module Six Quiz
- 06.07 Graphing Polynomial Functions
- 06.08 Polynomial Identities and Proofs
- 06.09 Module Six Review and Practice Test
- 06.10 Discussion-Based Assessment
- 06.11 Module Six Test

Rational Expressions

- 07.00 Module Seven Checklist and Pretest
- 07.01 Simplifying Rational Expressions
- 07.02 Multiplying and Dividing Rational Expression
- 07.03 Adding and Subtracting Rational Expressions
- 07.04 Simplifying Complex Fractions
- 07.05 Module Seven Quiz
- 07.06 Discontinuities of Rational Expressions
- 07.07 Asymptotes of Rational Functions
- 07.08 Solving Rational Equations
- 07.09 Applications of Rational Equations
- 07.10 Extending Algebraic Concepts
- 07.11 Module Seven Review and Practice Test
- 07.12 Discussion-Based Assessment
- 07.13 Module Seven Test

Exponential and Logarithmic Functions

- 08.00 Module Eight Checklist and Pretest
- 08.01 Exponential Functions

- 08.02 Logarithmic Functions
- 08.03 Properties of Logarithms
- 08.04 Solving Exponential Equations with Unequal Bases
- 08.05 Module Eight Quiz
- 08.06 Graphing Exponential Functions
- 08.07 Graphing Logarithmic Functions
- 08.08 Exponential and Logarithmic Functions
- 08.08B Functions of All Types
- 08.09 Module Eight Review and Practice Test
- 08.10 Discussion-Based Assessment
- 08.11 Module Eight Test

Sequences and Series

- 09.00 Module Nine Checklist and Pretest
- 09.02 Arithmetic Series
- 09.03 Geometric Sequences
- 09.04 Geometric Series
- 09.05 Module Nine Quiz
- 09.06 Sigma Notation
- 09.07 Infinite, Convergent, and Divergent Series
- 09.08 Graphing Sequences and Series
- 09.09 Module Nine Review and Practice Test
- 09.10 Discussion-Based Assessment
- 09.11 Module Nine Test

Statistics

- 10.00 Module Ten Checklist and Pretest
- 10.01 Normal Distribution
- 10.02 Models of Populations
- 10.03 Using Surveys
- 10.04 Using Experiments
- 10.05 Segment Two Honors Project
- 10.06 Module Ten Review and Practice Test
- 10.07 Discussion-Based Assessment
- 10.08 Module Ten Test
- 10.09 Segment Two Collaboration Component
- 10.10 Segment Two Exam Review
- 10.11 Segment Two Exam
- 10.12 Segment Two Honors Extension 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.