

K-12 Math Course of Study Updates and Approvals

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Introductions



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Goal of Presentation



- ✓ Share updated course of study documents for:
 - ✓ Elementary: Advanced Math 5
 - ✓ High School: Accelerated Algebra 1, Honors Geometry, Code and Create
- ✓ Seek approval for new course of study documents:
 - ✓ Middle School: Academic Math 6, Intervention Math 7, Intervention Math 8
 - ✓ High School: Introduction to Python, AP Cybersecurity, and Calculus 3



10-15 minutes

Agenda



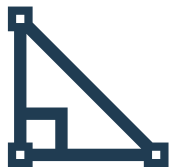
Background



Elementary Courses



Middle School Courses



High School Courses



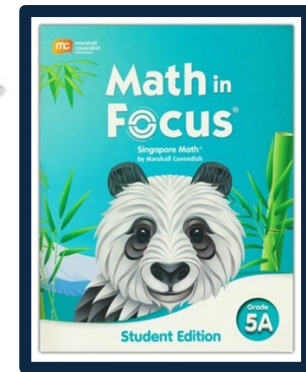
Background

Secondary Mathematics Sequence

	5	6	7	8	Credit 1	Credit 2	Credit 3	Credit 4
Academic	Academic Math 5	Academic Math 6	Academic Math 7	Academic Math 8	Academic Algebra 1A	Academic Algebra 1B	Academic Geometry	Academic Algebra 2 Applied Math
					Accelerated Algebra 1	Accelerated Geometry	Accelerated Algebra 2	Algebra 3/Trig Precalculus/Trig
Accelerated			Accelerated Math 7	Accelerated Algebra 1	Accelerated Geometry	Accelerated Algebra 2	Algebra 3/Trig Precalculus/Trig	Stat and Data Calculus 1
					Honors Geometry	Honors Algebra 2	Honors Precalculus/Trig	AP Calculus AB AP CS AP Statistics
Honors/ Advanced	Advanced Math 5	Advanced Math 6	Advanced Algebra 1	Advanced Geometry	Honors Algebra 2	Honors Precalculus	AP Calculus AB AP CS AP Statistics	AP Calculus BC AP CS AP Statistics

*This chart does not represent all the options. Please talk with your math teacher if you are interested in pursuing an alternative.

Advanced Math 5 – Update Only



Course Content

- Chapter 1: Whole Numbers and the Four Operations
- Chapter 2: Fractions and Mixed Numbers
- Chapter 3: Multiplying and Dividing Fractions and Mixed Numbers
- Chapter 4: Decimals
- Chapter 5: Four Operations of Decimals
- Chapter 6: Volume
- Chapter 7: Line Plots and Coordinate Plane
- Chapter 8: Polygons
- Chapter 9: Ratio
- Chapter 10: Percent
- Chapter 11: Integers and Rational Numbers

Course Overview

- ❑ Challenges students through both rigorous content and an accelerated pace
- ❑ Engages students in all Grade 5 mathematical standards, selected Grade 6 standards, and ongoing enrichment experiences that deepen understanding and reasoning
- ❑ Prepares students for the expectations and demands of the district's most advanced mathematics pathway
- ❑ Includes targeted updates in pacing, fluency, core enrichment, WIN, and assessment practices

Next Course: Advanced Math 6



Academic Math 6 – Seeking Approval

Course Content

- Unit 1: Number Systems and Operations
- Unit 2: Ratios and Rate Reasoning
- Unit 3: Expressions, Equations, and Inequalities
- Unit 4: Relationships in Geometry
- Unit 5: Data Collection and Analysis
- Unit 6: Rational Number Operations



Course Overview

- ☐ Replaces the existing Math 6 course
- ☐ Supports a structured transition from the elementary division to middle school expectations
- ☐ Addresses all Grade 6 mathematical standards using the *Into Math* curriculum
- ☐ Provides instruction within a double-block model with embedded small-group instruction, intervention, and enrichment
- ☐ Reflects targeted professional learning, with teachers participating in June training and receiving ongoing support throughout the year

Next Course: Academic Math 7 or Accelerated Math 7



Intervention Math 7 and Intervention Math 8 – Seeking Approval

Grade 7

Unit 1: Number Systems and Operations

Unit 2: Rational Number Operations

Unit 3a: Model with Expressions, Equations

Unit 3b: Angle Relationships and Inequalities

Unit 4: Geometry

Unit 5: Sampling and Data Analysis

Unit 6: Probability

Grade 8

Unit 1: Transformational Geometry

Unit 2: Linear Equations and Applications

Unit 3: Relationships and Functions

Unit 4: Statistics and Probability

Unit 5: Real Numbers and Pythagorean Theorem

Unit 6: Exponents, Scientific Notation, and Volume

Course Overview

- ☐ Uses Zearn as the primary instructional resource
- ☐ Aligns to Academic Math 7 and Academic Math 8 course expectations
- ☐ Supports mid-year movement based on student progress and performance
- ☐ Integrates embedded assessments, including Progress Checks, Mid-Mission Assessments, and End-of-Mission Assessments
- ☐ Emphasizes growth and productivity as the primary components of grading, with progress monitoring incorporated
- ☐ Provides built-in flexible instructional days

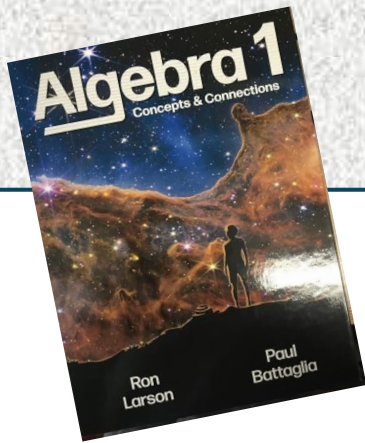




Accelerated Algebra 1 – Update Only

Course Content

- Chapter 1: Solving Linear Equations
- Chapter 2: Solving Linear Inequalities
- Chapter 3: Graphing Linear Functions
- Chapter 4: Writing Linear Functions
- Chapter 5: Solving Systems of Linear Equations
- Chapter 6: Exponents
- Chapter 7: Polynomial Equations and Factoring
- Chapter 9: Solving Quadratic Equations
- Chapter 11: Data Analysis and Displays
- Quadratics
- Radicals



Course Overview

- ☐ Introduces a new offering at the high school
- ☐ Offers multiple pathways at the middle and high school levels
 - ☐ Advanced Algebra 1 – Algebra 1 + 7th Grade Standards
 - ☐ Accelerated Algebra 1 – Algebra 1 + 8th Grade Standards
 - ☐ Academic Algebra 1A – Algebra 1 Standards (Ch. 1-5)
 - ☐ Academic Algebra 1B – Algebra 1 Standards (Ch. 6-11)
 - ☐ **Accelerated Algebra HS – Algebra 1 Standards (Ch. 1-11)**
- ☐ Prepares students to take the Algebra 1 Keystone and the PSSA (Advanced and Accelerated)
- ☐ Includes built-in **retention** activities

Next Course: Accelerated Geometry



Honors Geometry – Update Only

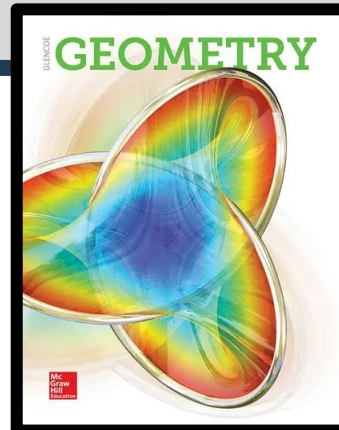
Course Content

- Unit 1: Tools of Geometry
- Unit 2: Logical Arguments and Line Relationships
- Unit 3: Triangle Foundations and Similarity
- Unit 4: Right Triangles and Trigonometry
- Unit 5: Congruent Triangles
- Unit 6: Quadrilaterals and Polygons
- Unit 7: Circles
- Unit 8: Mixed Area, Surface Areas, and Volume

Course Overview

- ❑ Updates Advanced Geometry to align with the high school schedule
- ❑ Undergoes a full rewrite in the 2026–27 school year
- ❑ Provides a rigorous, standards-aligned progression through geometric reasoning, proof, similarity, congruence, right-triangle trigonometry, polygons, circles, area, surface area, and volume, with continued emphasis on applying algebraic concepts to geometric situations

Next Course: Honors Algebra 2





Code and Create – Update Only

Course Content

- Unit 1: Getting to Know Your IDE
- Unit 2: Programming Basics
- Unit 3: Control Structures: Loops and Conditionals
- Unit 4: Smart Structures: Methods and Reuse
- Unit 5: Events and Handling

Course Overview

- ☐ Renames and updates the former *Introduction to Computer Programming* course
- ☐ Offers an entry-level elective that requires no prior computer science experience
- ☐ Introduces computer science through accessible, block-based coding in an object-oriented programming environment
- ☐ Aligns with K–12 Computer Science standards



Introduction to Python – Seeking Approval

Course Content

- Unit 1: Introduction to Programming with Graphics
- Unit 2: Introduction to Python Basics
- Unit 3: Conditionals
- Unit 4: Loops
- Unit 5: Functions
- Unit 6: Strings
- Unit 7: Data Structures

Course Overview

- ☐ Provides a new elective course in computer science
- ☐ Introduces students to the fundamentals of computer programming
- ☐ Requires no prerequisites, making computer science accessible to a broader range of students
- ☐ Develops logical thinking and problem-solving skills through designing, coding, testing, debugging, and refining Python programs
- ☐ Aligns with K–12 Computer Science standards

Next Course: AP Computer Science A



AP Cybersecurity – Seeking Approval

Course Content

- Unit 1: Introduction to Security
- Unit 2: Securing Spaces
- Unit 3: Securing Networks
- Unit 4: Securing Devices
- Unit 5: Securing Applications and Data

Course Overview

- ❑ Provides a new Advanced Placement course in computer science
- ❑ Introduces students to the principles, practices, and tools used to secure digital systems
- ❑ Emphasizes applied, hands-on learning through AP Classroom labs, real-world cybersecurity scenarios, formative assessments, and project-based experiences
- ❑ Develops both technical understanding and risk-based decision-making as students analyze vulnerabilities, threats, security controls, encryption, authentication, access control, and attack detection
- ❑ Connects cybersecurity to ethical, personal, and societal issues

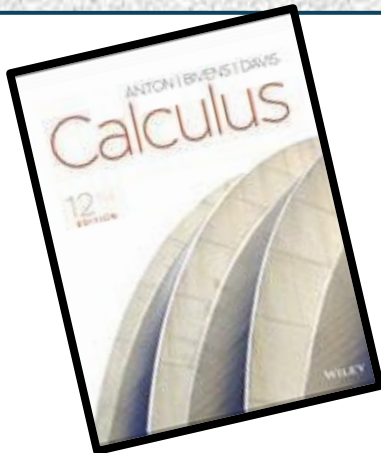
Next Course: N/A



Calculus 3 – Seeking Approval

Course Content

- Unit 1: Review of Single Variable Calculus
- Unit 2: Three-Dimensional Space
- Unit 3: Vector-Valued Functions
- Unit 4: Partial Derivatives
- Unit 5: Multiple Integrals
- Unit 6: Topics in Vector Calculus
- Unit 7: Second Order Differential Equations



Course Overview

- ☐ Introduces a new course that parallels a third-semester college course
- ☐ Launches in a hybrid format in 2026–27
- ☐ Engages students in inquiry-based exploration of multivariable concepts
- ☐ Uses multiple representations (graphical, algebraic, numerical, and verbal) to deepen understanding of functions of several variables
- ☐ Promotes mathematical discourse by requiring students to justify their reasoning, critique peers, and explain interpretations

Next Course: N/A



Next Steps

- Seeking Approval for New Course of Study Documents
- Implementation
- Common Assessments
- Data Review