



# Morristown-Beard School

## MATHEMATICS DEPARTMENT



### **Mission Statement:**

The Morristown-Beard School Mathematics Department produces students fluent in quantitative and abstract reasoning. We emphasize the importance of constructing and evaluating sound arguments while focusing on connections within and beyond mathematics. Within this framework we aim to cultivate resilience, critical thinking, creativity, and intellectual curiosity.

# UPPER SCHOOL MATHEMATICS CURRICULUM

Traditionally, courses in a school's math curriculum—Algebra 1, Geometry, Algebra 2, and Pre-Calculus—are studied separately (or in isolation). The MBS Integrated Math program blends different strands of mathematics and focuses on the connections among these mathematical concepts. Our Integrated Math program consists of three full-year courses: Integrated Math 1, Integrated Math 2, and Integrated Math 3.

## Integrated Math 1

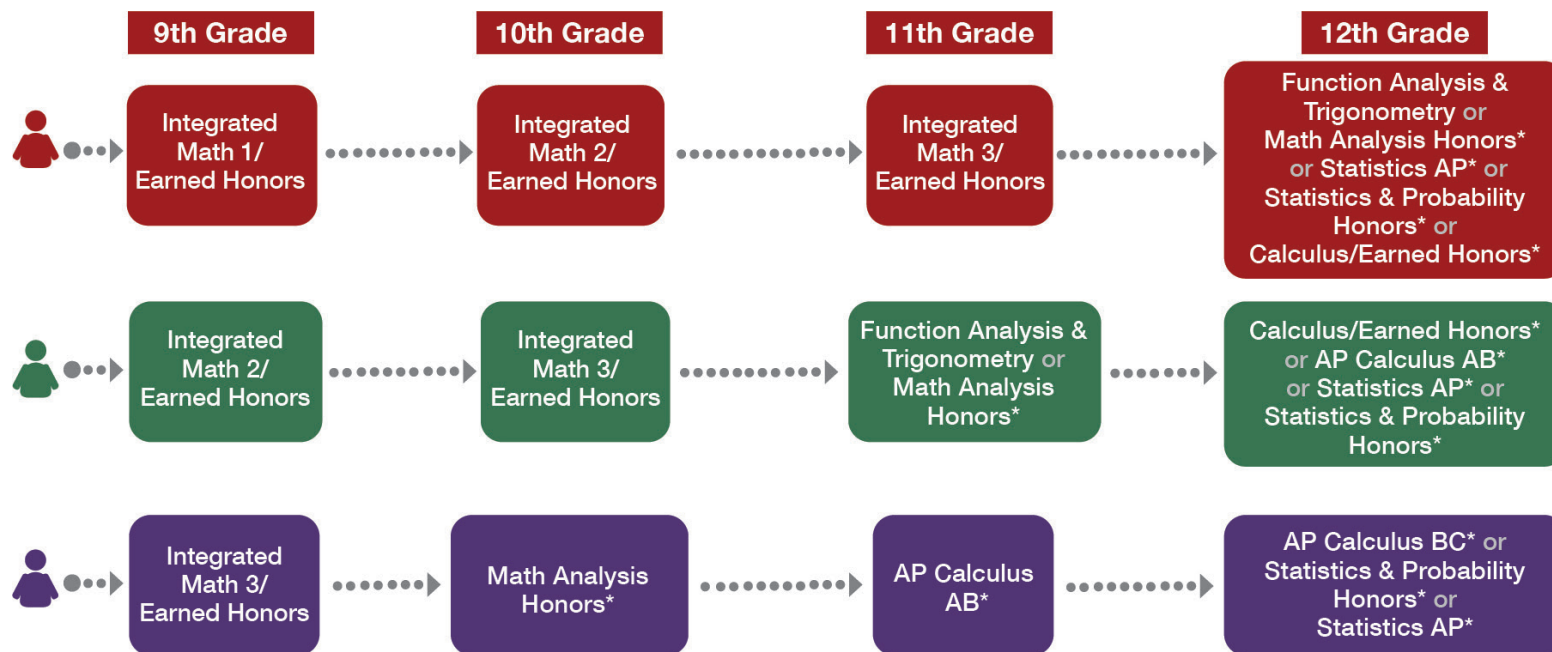
Integrated Math 1 (IM1) initiates the Upper School math sequence by engaging students in foundational concepts, skills and habits of thought. The course incorporates both algebraic and geometric elements covering concepts such as logic, algebraic modeling,

properties of lines and triangles, systems of equations, and properties of polynomials with factoring. Pedagogical techniques and assessments are diverse to allow for multiple ways of learning and demonstrating mathematical knowledge.

## MBS UPPER SCHOOL MATH SEQUENCE

### Sample Student Trajectories

After a placement test, students are placed in Integrated Math 1, 2 or 3 and then follow the appropriate trajectory.



\* Recommendation required

## Integrated Math 2

Integrated Math 2 (IM2) continues the Integrated Math sequence by building on the foundational concepts acquired in IM1. Students will encounter thought-provoking problems that require strong connections between algebra and geometry. Topics include applications of systems, behavior of functions, transformations, right triangle trigonometry, and quadratic functions. Each topic requires an added level of sophistication and abstraction as students achieve a higher level of mathematical fluency.

## Integrated Math 3

Integrated Math 3 (IM3) completes the Integrated Math sequence by building on the concepts and skills acquired in IM2 while incorporating another layer of depth and rigor. The central theme of learning mathematics through problem solving and exploration continues with topics including a study of polynomial, rational, logarithmic and exponential functions as well as circles and unit circle trigonometry. After successfully completing IM3, students have the background to take a variety of math electives.

### ADVANCED COURSES

- Function Analysis and Trigonometry (11, 12)
- Mathematical Analysis (Honors) (10, 11, 12)
- Calculus (12)
- AP Calculus AB (11, 12)
- AP Calculus BC (12)
- AP Statistics (12)
- Statistics and Probability Honors (12)

### SEMESTER ELECTIVES

- Math and Art (11,12)
- Probability Theory (10, 11, 12)
- Statistics and Data Analysis (10, 11, 12)
- Quantitative Business Analysis (12)

### EARNED HONORS MODEL (EH)

Students are not pre-slotted as "honors" or "regular" but are placed in heterogeneous classes and given the opportunity to earn honors on the basis of the work they produce. The honors distinction is measured by the qualitative rigor and analytical depth of the tasks undertaken to earn honors.

### HONORS COURSE (H)

Grade requirement and recommendation from Mathematics Department required.



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## Find Out More

Learn more about our offerings by looking at our Curriculum Guide at [www.mbs.net](http://www.mbs.net).

## Contact us

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