Upper School Track Overview

In the Upper School, there are two tracks in math class: Honors and AoPS (The Art of Problem Solving). The main difference between the tracks is the pace, not the depth in which the material is covered.

Students in both tracks also have the option of taking the Competition Prep elective.

Honors track sequence

- Algebra 1 (typically taken in 7th grade): The goal of this course is for the students to become very comfortable with using algebra tools in their work, using equations in problem solving, and graphing familiar functions. The major topics are: linear equations, ratios&rates, percents, graphing lines, inequalities, and quadratic equations.

- Geometry (typically taken in 8th grade): The goal of this course is for the students to acquire experience both in solving geometric problems and in writing mathematical proofs. The major topics are Deductive Reasoning, Congruent Triangles, Quadrilaterals, Inequalities in Geometry, Similar Polygons, Right Triangles, Circles, Areas of Plane Figures, Areas and Volumes of Solids, Coordinate Geometry, and Transformations.

- Algebra 2 (typically taken in 9th grade): The main goal of this course is to increase the number of functions that students are familiar and comfortable with. The main ones covered are polynomial, logarithmic, and trigonometric functions. In addition, students will learn about Complex Numbers, review Quadratic Equations, and work with Rational Expressions.

- Precalculus (typically taken in 10th grade): The main goal of this course is to continue working with polynomials, rational functions, logarithms, and trigonometric functions. Polar coordinates, vectors, and matrices are also introduced in this course.

- Calculus AP (typically taken in 11th grade): Students will take Calculus AB or BC, depending on their progress.

- In 12th grade, students will either take Statistics AP or Multivariable calculus.

AoPS track sequence

In the Art of Problem Solving track, students in 7th and 8th grades take courses through the Art of Problem Solving platform with support from an MLCA math teacher.
During those two years, students take Geometry, an equivalent of Algebra 2, and some selection from Introduction to Counting and Probability, Introduction to Number Theory, and a competition prep course.

In 9th grade, students join the honors track a year ahead. They take Precalculus in 9th grade and AP Calculus BC in 10th. In 11th and 12th grades, students choose between Aops courses in advanced Number Theory, Counting and Probability, and Group Theory, as well as Statistics AP and Multivariable Calculus.