

MATHEMATICS

IMPORTANT NOTE 1:

There are two levels – Math and Advanced Math – Instruction will be differentiated accordingly supporting the New Jersey Student Learning Standards for mathematics in both grades seven and eight.

IMPORTANT NOTE 2:

Students who merit participation in the high school level Honors Algebra 1 and Honors Geometry courses are presumed to already possess the content understanding and skills of Math-7 and Math-8 courses, and are expected to have a level of academic independence that would allow for success in the course without extraordinary measures.

Math Seven

The New Jersey Student Learning Standards -based course is designed to encourage student exploration and discovery while expanding on elementary mathematics. Many of the activities are based on the materials from the enVisionmath 2.0 Grade 7 program, and supported by additional recourses to promote student engagement in mathematical thinking. Instructional practices, activities and math assignments are designed to establish a deeper understanding of necessary fundamentals, thereby gaining greater confidence and experience in applying these fundamentals to solve problems. Aligned to the New Jersey Student Learning Standards the context of the content is the application of the mathematical concepts and problem solving strategies to real world situations. Students will develop an ability to communicate mathematically (in both oral and written forms) in the areas of basic number theory and operations styles, algebra and functional relationships, geometry and spatial sense, probability and statistics, data analysis and introductory algebraic concepts. This program is designed to meet the needs of all academic levels and learning styles.

Advanced Math Seven

Pre-requisites: Meeting Expectations on previous PARCC Assessments, AND other standardized math assessment scores as required

This course is designed for students to accelerate through all of the regular Math Seven course content to gain exposure to more advanced levels of algebraic instruction. Students will engage in the same activities as the regular grade seven course, but with more rigorous, challenging material and a faster pace to promote greater independent mastery of advanced levels of algebraic and mathematical study. Additionally, students will be challenged to extend their knowledge of mathematical principles utilizing graphical, spatial, logical and algebraic modeling skills in order to infer, differentiate and apply mathematical relationships. The pace of the course will assume mastery with numerical computational fluency, as well as proficiency in applying computational rules to expressions and equations.

Math Eight

Pre-requisites: Math Seven OR Advanced Math Seven

This course is a continuation of the New Jersey Student Learning Standards-based curriculum focused on numerical systems, algebra and functions, geometry, and data and probability. Students will be exposed to more challenging material and more sophisticated instruction designed to promote increasingly independent mastery of algebraic and mathematical study.

Advanced Math Eight

Pre-requisites: Advanced Math Seven, OR Math Seven AND teacher recommendation.

This course is designed for students to continue to accelerate through Math Eight. Students will be exposed to more advanced levels of instruction and more rigorous, challenging material at a more challenging pace that requires greater independent mastery of higher levels of mathematical study.

Honors Algebra I

Pre-requisites Grade 7: District determined benchmark scores on previous assessment measures, including MAP, PARCC, and Clearview Mathematics Readiness Test (CMRT).

Pre-requisites Grade 8: Advanced Math Seven AND teacher recommendation.

Note: Computational fluency and mathematical sophistication on par with 9th grade is assumed, as is a high degree of academic independence.

Algebra 1 is pivotal as the mathematical foundation of all academic high school courses. This course adheres to the same pacing and grading guidelines as a high school honors course. The grading guideline percentages are 60%-30%-10% for Major Assessments, Minor Assessments, and Daily Assignments, respectively. The course is designed for only the most mathematically able middle school students who have demonstrated a solid foundation in computation as well as knowledge and understanding of the real number system. Topics include: solving equations and inequalities, linear and non-linear functions, systems of equations and inequalities, exponents and exponential functions, polynomials and factoring, quadratic functions and equations, radical expressions and equations, and rational expressions and equations. Throughout each unit students are expected to solve complex problems that require high order thinking. This course is eligible for high school credit, based on student performance.

Honors Geometry Grade level 8

Pre-requisites: Honors Algebra I AND teacher recommendation

This course is the same as the High School Honors Geometry course, follows the same rigorous pace and curriculum, and includes the same major exams as well as the same 60%-30%-10% grading guideline

percentages for Major Assessments, Minor Assessments, and Daily Assessments (see HS Program of Studies).

It is designed to continue the Honors level high school program for the most mathematically able middle school students who have demonstrated a solid foundation in computation and algebraic understanding. The content focuses on geometric relationships among points, lines, planes, and angles, such as bisection; parallels and perpendiculars; congruence and similarity; chord, secant, tangent and arc connections in circles; applications and proofs with the Pythagorean Theorem; three practical applications. Weather data, for example, will be kept and analyzed to better understand the scientific use of data and statistics. Additionally, environmental issues will be addressed as they relate to the various Earth Science topics. Dimensional figures; area, surface area and volume; and an introduction to trigonometry. Students use and justify mathematical reasoning by developing informal and formal proofs. This course is eligible for high school credit, based on performance.