

# Math

## 7th & 8th Grades

The Math department is currently going through the process of updating curriculum. This year, the 7th and 8th grades are using Open Up Resources as interim curriculum. Open Up Resources is a problem-based curriculum authored by Illustrative Mathematics. It has student-facing tasks, cool downs, and practice problems that focus on recognizing patterns and problem solving in all four categories of mathematics.

## Math 1

Math 1 is a course designed to strengthen students' understanding of the concepts and skills learned in junior high. As students gain depth of knowledge, their foundations for higher math are solidified for success throughout high school. The categories of Number, Algebra, Geometry, and Data are expanded from the 7th & 8th grade level while maintaining a focus on the mathematical processes of problem solving, modeling and representation, communication, and making connections.

## Math 2

Math 2 is a course designed to bridge the gap between junior high math and the traditional high school classes of Algebra I, Geometry, and Algebra II. The focus is on pre-algebraic concepts, supported by number sense, problem solving with logical reasoning skills, and connections between math in the classroom and the real world.

## Algebra I

Course Description: This course is designed to emphasize the study of multiple representations of linear and non-linear functions. It includes mathematical concepts for working with rational numbers, various expressions, analyzing and solving linear equations & inequalities, data analysis, probability, statistics, and polynomials. Students will use hands-on materials and calculators when needed in solving problems where the algebra concepts are applied. Students who complete Algebra I should take Geometry next.

## Algebra II

Course Description: This course is designed to build on algebraic and geometric concepts. It develops advanced algebra skills such as systems of equations, advanced polynomials, imaginary and complex numbers, quadratics, and concepts and includes the study of trigonometric functions. It also introduces matrices and their properties. The content of this course are important for students' success on both the ACT and college mathematics entrance exams. Students who complete Algebra II should take Pre-Calculus next.

## Geometry

Course Description: This course is designed to emphasize the study of the properties and applications of common geometric figures in two and three dimensions. It includes the study of transformations and right triangle

trigonometry. Inductive and deductive thinking skills are used in problem solving situations, and applications to the real world are stressed. It also emphasizes writing proofs to solve (prove) properties of geometric figures. Students who complete Geometry should take Algebra II next.

### **Pre-Calculus**

Course Description: This course is designed to cover topics in Algebra ranging from polynomial, rational, and exponential functions to conic sections. Trigonometry concepts such as Law of Sines and Cosines will be introduced. Students will then begin analytic geometry and calculus concepts such as limits, derivatives, and integrals. This class is important for any student planning to take a college algebra or college pre-calculus class.

### **Statistics**

Course Description: This course is designed to provide a basic understanding of descriptive and inferential statistics. Topics include the measures of central tendency, standard deviation, combinations and permutations, probability, sampling, and various distributions. Emphasis is on applications of statistical concepts.