

# MATHEMATICS

## **Math 4**

The fourth grade mathematics program provides students with a rigorous approach to learning, balancing the acquisition of basic skills with reasoning and inquiry. The curriculum covers whole numbers and operations, multiplication and division facts, time/temperature/data, multiplying and dividing 1 and 2 digit numbers, fractions/decimals, geometry, and measurement/probability. Problem-solving strategies and mathematical habits of mind are explored and practiced throughout the year to encourage critical thinking and reasoning. Many lessons use cooperative groups, games, and manipulatives to support students in exploring math concepts. Focus is placed on building verbal and visual models and written expressions of mathematical ideas.

## **Math 5**

The fifth grade mathematics program provides students with a rigorous approach to learning, balancing the acquisition of basic skills with reasoning and inquiry. The curriculum covers the use of whole numbers, decimal and fraction operations, number theory, data/graphing, ratios/percent, geometry, and pre-algebra. Problem-solving strategies and mathematical habits of mind are explored and practiced throughout the year to encourage critical thinking and reasoning. Many lessons use cooperative groups, games, and manipulatives to support students in exploring math concepts. Focus is placed on building verbal and visual models and written expressions of mathematical ideas.

## **Math 6**

The sixth grade mathematics program provides students with a rigorous approach to learning, balancing the acquisition of basic skills with reasoning and inquiry. The curriculum covers operations with whole numbers, integers, and rational numbers, data analysis, probability and statistics, expressions and equations, ratio and proportion, percent applications, geometry and measurement, coordinate graphing and number theory. Problem-solving strategies and mathematical habits of mind are explored and practiced throughout the year to encourage critical thinking and reasoning. Focus is placed on building verbal and written expression of mathematical ideas, as well as giving students many experiences with abstract and logical reasoning to prepare them for pre-algebra.

## **Pre-Algebra**

This course sets the foundation for higher mathematics studies by introducing students to abstract reasoning. This course reinforces basic algebraic skills while teaching students about variables and what they represent. By completing a comprehensive study of integers, rational and irrational numbers, equations and inequalities, percents, 2-D and 3-D shapes, and probability, students will understand how the different areas of math connect and how to apply their knowledge in the real world. Students work in cooperative groups, individually, and use technology to express their learning.

## **Math 8**

Math 8 is designed to help prepare students for Algebra. Students review their basic math skills including rational and irrational numbers and solving equations and inequalities. This course places a major emphasis on graphing linear equations, including slope intercept, point slope form, and standard form. Students apply their mathematical reasoning to solving systems of equations and deriving equations.

## **Algebra I**

Prerequisite: Department recommendation This course expands students' knowledge of the concepts of variables, expressions, solving equations, and graphing on the coordinate plane. Students become proficient working with the symbolic nature of mathematics such as operating on polynomial expressions, factoring, and translating words into symbols. Special emphasis is placed on problem solving. Topics include algebraic fractions, graphing linear functions, systems of linear equations, and work with quadratic expressions, exponents and roots.

## **Honors Algebra I**

Prerequisite: Department recommendation This eighth grade honors course is designed for students who have demonstrated a high level of mathematical ability as well as the motivation and maturity necessary to handle the high expectations inherent in an honors course. Students have more homework than in a traditional Algebra I class, due to the broader scope of material studied. Students are presented a variety of problems demanding that they integrate their knowledge of topics from general math, geometry, and algebra, and demonstrate excellent problem solving skills. Problems involving discrete math topics such as probability and statistics, matrices and determinants are interspersed with the more traditional algebra problems, making the course more interesting and challenging. Students

who do well in this course have an excellent preparation for future math courses and are eligible to take additional honors courses in mathematics.