

MATHEMATICS

Purpose: The four years of elementary math, first through fourth grade, lay the foundation for our math curriculum which emphasizes a firm grasp of relationships between numbers and the use of concrete models and manipulatives to reinforce concepts. During the logic stage in grades five through eight, the students must learn to make the transition from the mental image mode of objects to the symbolic mode or use of numbers to represent meaning.

Overview: Mathematics across the grades levels, introduces, refines, and masters the following:

Sampling of Topics Covered:

Grades 1 – 3

- Numeration and number theory
- Basic computation using addition, subtraction, multiplication, and division
- Whole number computation and estimation
- Solve problems using estimation
- Identifying parts of a whole
- Identifying coins, understanding value, and applying to problems
- Solving simple problems using graphs
- Identifying shapes
- Using measurement and applying to authentic situations

Grades 4 – 5

- Complete mental computation of basic addition, subtraction, multiplication, and division.
- Understanding place value structure of the base-ten number system.
- Use of fractions, decimals, percents, and ratios.
- Identify, compare, and analyze attributes of two and three-dimensional shapes
- Construct, read, and interpret displays of data
- Explore patterns in numbers and arithmetic operations
- Identify mean, mode, median, and range
- Basic geometry

Grades 6-8

- Using the basic operations with positive and negative integers
- Identifying variables in a mathematical expression
- Solve multi-step equations
- Translating word problems to equations
- Calculate the prime factorization of integers
- Calculate the greatest and least common factor of integers and variable expressions
- Solve proportions
- Identify percents and solve percent problems using proportions
- Compute perimeter and circumference using the value of Pi
- Use rectangles, parallelograms, trapezoids, prisms, cylinders, cones, and spheres and compute area, surface and volume.
- Identify and graph quadratic functions
- Square roots
- Identify and use zero and negative exponents
- Use of the Pythagorean Theorem
- Add, subtract, multiply and factor polynomials