

Algebra 2 - Grade 10

- Perform operations and solve equations with radicals
- Graph linear, quadratic and absolute value equations using translations
- Solve compound and absolute value inequalities
- Graph inequalities and absolute value equations
- Solve systems of equations using substitution, elimination, and Cramer's Rule
- Solve linear programming problems
- Graph and solve quadratic functions
- Perform operations with imaginary and complex numbers
- Use the properties of logarithms to solve equations
- Evaluate functions and composite functions
- Find equations for linear, quadratic and inverse functions
- Factor polynomial expressions
- Solve quadratic equations by completing the square, quadratic formula and factoring
- Solve everyday problems, which model quadratic functions
- Simplify rational expressions and solve rational equations
- Simplify expressions with all types of real exponents
- Use synthetic division to divide equations, create depressed equations and graph polynomial functions

AP Statistics - Grades 10, 11 & 12

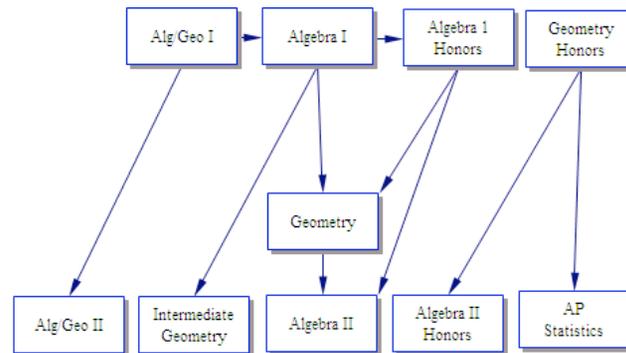
Students will be exposed to four broad conceptual themes:

- Exploring Data: Describing patterns and departures from patterns
- Sampling and Experimentation: Planning and conducting a study
- Anticipating Patterns: Exploring random events using probability and simulation
- Statistical Inference: Estimating population parameters and testing hypothesis

Mathematics Related Activities

- Math Team
- Competitions
 - New England Math League
 - American Mathematical Competition
 - Worcester Polytechnic Institute Math Competition
 - TEAMS Competition
 - Mathematics Association of Math League
- Boston University Math Day
- Mu Alpha Theta

Sequence of Courses



WESTFORD PUBLIC SCHOOLS



CURRICULUM BENCHMARKS

GRADES 9 AND 10

MATHEMATICS

Westford Academy

Compiled by the
Mathematics Curriculum Task Committee
under the direction of
Assistant Superintendent
Dr. Lorraine Tacconi-Moore

“Shaping the future one child at a time”

Visit our website at: westfordk12.us

June 2009

Algebra/Geometry 1 Grade 9

- Evaluate expressions using order of operations on integers and rational numbers
- Evaluate algebraic expressions that contain integer exponents, absolute values and grouping symbols
- Simplify algebraic expressions involving arithmetic operations, powers, grouping symbols and absolute value
- Simplify variable expressions by combining like terms and applying the distributive property
- Graph and write equations of linear functions
- Name and classify angles based on measure
- Determine the relationship between pairs of complementary, supplementary, and vertical angles
- Recognize and apply geometric properties to calculate the perimeter and area of common geometric figures such as parallelograms, trapezoids, and triangles
- Change rates through dimensional analysis
- Interpret graphical representations of data
- Analyze data using appropriate measures of central tendency
- Simplify Radicals

Algebra/Geometry 2 Grade 10

- Solve quadratic equations by factoring and using the quadratic formula
- Factor polynomials by finding the Greatest Common Factor and applying knowledge of the product of binomials, trinomials, difference of two squares and perfect squares
- Solving regular, absolute value, and compound inequalities.
- Simplify radical expressions
- Write and graph equations of lines using the x and y intercepts, point slope, slope intercept, and two point processes
- Identify parallel and perpendicular lines
- Solve everyday problems using linear and system of equations by making a chart
- Finding independent and dependent probability
- Finding volume and surface areas of solids.
Applications of the basic definitions and properties of Geometry

Algebra 1 Grades 9 & 10

- Solve one and two event number and geometric probability problems
- Evaluate expressions using order of operations on integers and rational numbers
- Evaluate algebraic expressions that contain integer exponents, absolute values and grouping symbols
- Simplify algebraic expressions involving arithmetic operations, powers, grouping symbols and absolute value
- Simplify variable expressions by combining like terms and applying the distributive property
- Model and solve equations that represent real life situations including consecutive integer problems and a variety of rate of speed and time problems
- Write and graph equations of lines using the x and y intercepts, point slope, slope intercept, and two point processes
- Identify parallel and perpendicular lines
- Solve and graph inequalities
- Solve system of equations
- Solve everyday problems using linear, and system of equations
- Factor binomial and quadratic expressions
- Solve quadratic equations by factoring
- Simplify rational expressions

Geometry Grades 9 & 10

- Name and classify angles based on measure
- Determine the relationship between pairs of complementary, supplementary, and vertical angles
- Use inductive and deductive reasoning to prove geometric theorems involving congruent and similar figures, and parallel and perpendicular lines
- Recognize and apply geometric properties to calculate the perimeter, circumference, and area of common geometric figures such as parallelograms, trapezoids, circles, and triangles
- Identify and calculate the volume, surface area, and lateral area of prisms, cones, pyramids, cylinders, and spheres
- Know and apply the Pythagorean Theorem and it's converse to real-life situations
- Identify and perform reflections, translations, rotations, and glide reflections
- Explore properties of similar triangles
- Introduce the sine, cosine, and tangent trigonometric functions