Grade 8

Mathematics

These are the expectations for a student by the end of Eighth Grade.

Geometry

Students will be able to:

- Define and use geometric lines, angles, and polygons
- Use properties of perpendicular and parallel lines with transversals
- Calculate slope, distance and midpoints of segments
- Write 2 column proofs
- Classify triangles and angles, use properties of midsegments, medians and altitudes
- Apply the properties of special right triangles to solve problems
- Use CPCTC to prove that different triangles or polygons are congruent
- Define and use properties of quadrilaterals
- Use the properties of similar figures
- Use proportions to solve problems
- Use and apply the Pythagorean Theorem
- Define, identify and calculate segments, lines, angles and arcs related to circle
- Calculate area, surface area, and volume of solids
- Perform Transformations - Translations, Reflections, Dilations, Rotations
- Compute volume of a sphere, cylinder and cone
- Use the Pythagorean Theorem and its converse
- Find distance using the Pythagorean Theorem
- Construct and interpret Two-Way Frequency Tables

Grade 8 Algebra I

Students will be able to:

- Solve multi-step equations and inequalities (graph)
- Determine rates of change
- Solve and graph linear equations using slope, slope-intercept, standard, point-slope forms
- Solve systems of equations by graphing, elimination and substitution
- Use the properties of exponents to simplify expressions
- Perform operations with polynomials
- Factor polynomial expressions.
- Simplify radicals and expressions.
- Transformations - Translations, Reflections, Dilations, Rotations
- Compute volume of a sphere, cylinder and cone
- Use the Pythagorean Theorem and its converse
- Find distance using the Pythagorean Theorem
- Construct and interpret Two-Way Frequency Tables

Algebraic Concepts

By the end of this course, students will be able to:

- Understand, estimate and order Real numbers
- Find the square and cube roots
- Use exponent rules and scientific notation
- Represent proportional relationships with a table, graph, equation
- Interpret the unit rate as slope
- Represent nonproportional relationships with a table, graph, equation
- Solve multi-step linear equations
- Identify functions, analyze graphs
- Transformations - Translations, Reflections, Dilations, Rotations
- Compute volume of a sphere, cylinder and cone
- Use the Pythagorean Theorem and its converse
- Find distance using the Pythagorean Theorem.
- Construct and interpret Two-Way Frequency Tables
- Solve Systems of Equations