Scope and Sequence 2024 - 2025
Please Note: All standards in the state course description are designed to be learned by the end of the course. This guide represents a recommended timeline and sequence to be used voluntarily by teachers for planning purposes. Specific question regarding when content will be addressed in a specific course are best answered by the individual teacher.
Course Resources

Publisher Resource:
 	
   Math Nation (Clever – use your active directory; does not support Internet Explorer)
 	
Supplemental Resources:
 	
   Khan Academy (8th Grade; does not support Internet Explorer)
 	
   Illustrative Mathematics (8th Grade; does not support Internet Explorer)

In Grade 8, instructional time will emphasize five areas:
(1) Representing numbers in scientific notation and extending the set of numbers to the system of real numbers, which includes irrational numbers; (2) Generate equivalent numeric and algebraic expressions including using the Laws of Exponents; (3) Creating and reasoning about linear relationships including modeling an association in bivariate data with a linear equation; (4) Developing an understanding of the concept of a function and (5) Analyzing two-dimensional figures, particularly triangles, using distance, angle and applying the Pythagorean Theorem.

Quarter 1 (August 12 – October 11)

Unit 1: Equations and Inequalities
Students will be able to convert between fractions and decimals. Students will also be able to solve and write two step equations and inequalities in real-world contexts.

Unit 2: Rational and Irrational Numbers
Students will use geometric representations of squares and cubes. Students will discover the symmetry of outputs for the equation $y = x^2$ and understand that the equation has two solutions and solve equations such as $x^3 = -125$. Students will also learn to plot rational and irrational numbers on a number line.

Unit 3: Exponents and Scientific Notation
Students will build fluency in operations with rational numbers by using the Laws of Exponents. Students then will use powers of ten to express numbers in scientific notation.

Unit 4: Solving Problems with Rational Numbers
Students will continue to develop fluency with Laws of Exponents as students perform all four operations with numbers expressed in scientific notation. Students then will find the value of an expression that includes exponents, radicals, grouping symbols, and operations.

Quarter 2 (October 15 – December 20)

Unit 6: Relationships in Triangles
Students will apply their understanding of inequalities to the Triangle Inequality Theorem to determine side lengths. Students then extend their learning of side lengths that create a triangle to side lengths that create a right triangle, including using the Pythagorean Theorem, to find missing side lengths of triangles. Students then extend the learning into similar triangles where students apply their understanding of proportional relationships to solve mathematical and real-world problems.

Unit 10: Linear Relationships
Students understand linear relationships by beginning with exploring whether linear relationships are proportional relationships. Using multiple representations, including similar triangles, students connect the slope of a line to the change in y-values divided by the change in x-values. Students represent and determine key features of linear relationships represented by equations, tables of values, graphs, and written descriptions.

Unit 11: Solving Equations and Systems of Equations
Students solve multi-step equations and solve systems of equations by graphing.

Quarter 3 (January 6 – March 13)

Unit 12: Functions
Students explore the definition of a function and a relation using equations, tables, and graphs.

Unit 13: Representing Data
Students explore scatter plots that model linear relationships in bivariate data. Students will also identify key features of linear equations by interpreting the slope and y-intercept of a linear equation using multiple representations.

Unit 14: Equivalent Algebraic Expressions
Students use Laws of Exponents to generate equivalent algebraic expressions. Students will multiply two linear expressions and rewrite the sum of two algebraic expressions by factoring out a common monomial factor.

Quarter 4 (March 24 – May 30)

Unit 15: Transformations
Students will be able to transform figures in a plane and on the coordinate plane. Students then relate dilations to proportional relationships.

Unit 16: Properties and Theorems of Angles
Students will be able to find angle relationships in triangles to find missing angles in polygons.

Unit 17: Probability
Students will use sample spaces such as lists and tree diagrams. Students will also be able to calculate theoretical probability and theoretical probability of compound events and apply proportional reasoning to probability to make predictions.