| Scope and Sequence 2022 - 2023 |
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| **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 |
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| **Publisher Resource:**<br><br>Math Nation (Clever – use your active directory; does not support Internet Explorer)<br><br>**Supplemental Resources:**<br><br>Khan Academy (Algebra 1; does not support Internet Explorer)<br><br>Illustrative Mathematics (Algebra 1; does not support Internet Explorer) |

| In Algebra 1 Honors, instructional time will emphasize five areas: |
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| (1) Performing operations with polynomials and radicals, and extending the Laws of Exponents to include rational exponents;<br><br>(2) Extending understanding of functions to linear, quadratic and exponential functions and using them to model and analyze real-world relationships;<br><br>(3) Solving quadratic equations in one variable and systems of linear equations and inequalities in two variables;<br><br>(4) Building functions, identifying their key features and representing them in various ways; and<br><br>(5) Representing and interpreting categorical and numerical data with one and two variables. |

## Quarter 1 (August 10 – October 14)

**Unit 1: Introduction to Functions**
Students will begin to learn about parent functions, function notation, evaluating functions, using Laws of Exponents to connect expressions with fractional exponents to radical expressions, and operations with radicals.

**Unit 2: Algebraic Expressions**
Students will focus on applying Laws of Exponents to generate equivalent algebraic expressions. Students will use operations with radicals and Laws of Exponents to provide a foundation for adding, subtracting, multiplying, and dividing algebraic expressions.

**Unit 3: Linear Functions**
Students will be able to rearrange equations of lines, write equations of lines from tables, graphs, and written descriptions. Students will also be able to fit linear functions to bivariate numerical data and understand the statistical importance of correlations.

**Unit 4: Key Features of Linear Functions**
Students be able to understand set-builder notation and identify and interpret key features from lines, graphs, and tables in real-world contexts.

## Quarter 2 (October 18 – December 21)

**Unit 4: Key Features of Linear Functions**
Students will be able to determine constraints, solve and compare problems of linear functions and write equations of parallel and perpendicular lines.

**Unit 5: Solving Equations**
Students will extend their understanding of solving multi-step linear equations to include writing and solving multi-step linear equations representing a real-world context.  Students will also be able to write a system of equations for real-world contexts and solve systems of equations by graphing, substitution and elimination.

**Unit 6: Linear Inequalities**
Students will focus on applying their understanding of linear equations and systems of equations to linear inequalities and systems of inequalities.

**Unit 7: Rewriting Polynomial Expressions**
Students will build on their knowledge of the distributive property and factor monomial expressions by rewriting polynomial expressions as a product of polynomials.

| Quarter 3 (January 5 – March 9) |
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**Unit 7: Rewriting Polynomial Expressions**
Students will factor perfect square trinomials and factor the difference of two squares.

**Unit 8: Quadratic Functions**
Students will begin to determine and interpret key features of quadratics from a graph. Students will also rewrite quadratic expressions in vertex form by completing the square.

**Unit 9: Writing and Solving Quadratic Equations**
Students will use graphs, tables, and key features to write a quadratic function. Students will also solve quadratics by using the square root, completing the square, factoring.

**Unit 10: Absolute Value Functions**
Students will understand key features of quadratic functions to key features of absolute value functions. They will write and solve absolute value equations and connect the solutions of an absolute value equation to the graph while also relating each piece of an absolute value function to a linear equation.

**Unit 11: Exponential Functions**
Students will explore exponential functions using multiple representations to understand exponential growth and exponential decay. Students will also apply their knowledge to write the equation of an exponential relationship.

| Quarter 4 (March 20 – May 25) |
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**Unit 12: Data Displays**
Students will analyze numerical and categorical data that is displayed using multiple visual representations. Students will also use data to make predictions for a population and understand the correlation and causation.

**Unit 13: Bring it Together**
Students will review simple and compound interest, compare key features of functions, explore transformations of horizontal and vertical shifts, identify and interpret parts of an expression or equation, calculate and interpret average rate of change and combine functions.

**Unit 14: Categorical Data**
Students will construct and interpret two-way frequency tables and use the information to determine join and marginal frequency as well as whether an asocial exists.