**Curriculum Coverage in Mathematics for the 2017-2018 School Year as Outlined by TNStandards**

[The Standards for Mathematical Practices](http://tn.gov/assets/entities/education/attachments/std_math_standards_mathematical_practice.pdf)

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| **MP1. Make sense of problems and persevere in solving them.** | **MP2. Reason abstractly and quantitatively.** | **MP3. Construct viable arguments and critique the reasoning of others.** | **MP4. Model with mathematics.** |
| **MP5. Use appropriate tools strategically.** | **MP6. Attend to precision.** | **MP7. Look for and make use of structure.** | **MP8. Look for and express regularity in repeated reasoning.** |

[Tennessee Mathematics Standards – Algebra 1](http://www.tn.gov/assets/entities/education/attachments/std_math_algebra_I.pdf)

[Tennessee Mathematics Blueprints – Algebra 1](http://www.tn.gov/assets/entities/education/attachments/tnready_blueprints_math_traditional_grade_9-12.pdf)

\*\*Underlined TNStandards denote “Major Work of the Grade”

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| **TNStandards** | **Learning Outcomes** | **Lessons**  |
| **Linear Equations**Allow 3.5 weeks for instruction, review, & assessment |
| **A1.F.IF.B.5** Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph. **A1.F.LE.A.1** Distinguish between situations that can be modeled with linear functions and with exponential function. | I can find the slope of a line from tables, ordered pairs, and graphs. I can use rate of change to solve problems.  | Finding Slope/Rate of Change* Table
* Ordered pairs
* Graph
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| **A1.A.CED.A.2** Create equations in two or more variables to represent relationships between quantities; graph equations with two variables on coordinate axes with labels and scales.**A1.A.CED.A.3** Represent constraints by equations or inequalities and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. **A1.F.BF.A.1** Write a function that describes a relationship between two quantities. **A1.F.LE.A.2** Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a table, a description of a relationship, or input-output pairs.  | I can write an equation of a line in Slope Intercept Form or Standard Form given the slope and one point and given two points. | Linear Equation Formulas* Slope Intercept Form
* Standard Form
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| **A1.A.CED.A.2** Create equations in two or more variables to represent relationships between quantities; graph equations with two variables on coordinate axes with labels and scales.**A1.A.CED.A.4** Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations**A1.S.ID.C.5** Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data. **A1.F.IF.C.6** Graph functions expressed symbolically and show key features of the graph, by hand and using technology.**A1.F.LE.B.4** Interpret the parameters in a linear or exponential function in terms of a context. **A1.F.BF.A.1** Write a function that describes a relationship between two quantities.  | I can solve linear equations by graphing.I can estimate solutions to a linear equation by graphing. I can write and graph linear equations in slope-intercept form.  | Graphing Linear Equations* Slope Intercept Form
* Rewriting from Standard Form to Slope Intercept Form
* X-and Y- intercepts
* Vertical and Horizontal Lines
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| \*Refer to *Linear Equations Formula* lesson | I can write equations of lines using Point Slope Form. | Writing Linear Equations* Point Slope Form (given two points or a point and slope – create linear equations)
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| **A1.A.CED.A.2** Create equations in two or more variables to represent relationships between quantities; graph equations with two variables on coordinate axes with labels and scales.**A1.S.ID.C.5** Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.  | I can model real-world data with equations in Slope Intercept Form. | Linear Equation Word Problems |
| **A1.A.CED.A.2** Create equations in two or more variables to represent relationships between quantities; graph equations with two variables on coordinate axes with labels and scales.**A1.S.ID.C.5** Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data. **A1.F.BF.A.1** Write a function that describes a relationship between two quantities. **A1.F.LE.A.2** Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a table, a description of a relationship, or input-output pairs.  | I can write and graph an equation of the line that passes through a given point, parallel and perpendicular to a given line. | Parallel and Perpendicular Lines* Writing and graphing
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| **A1.S.ID.B.4** Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. | I can investigate relationships between quantities by using points on scatter plots. I can use lines of fit to make and evaluate predictions. | Scatter Plots * Line of Best Fit
* Linear Regression
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| **Systems of Equations and Inequalities**Allow 2 weeks for instruction, review, & assessment |
| **A1.A.CED.A.3** Represent constraints by equations or inequalities and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. **A1.A.REI.D.6** Explain why the x-coordinates of the points where the graphs of the equations y = f(x) and y = g(x) intersect are the solutions of the equation f(x) = g(x); find the approximate solutions using technology.**A1.A.REI.C.4** Write and solve a system of linear equations in context. | I can determine the number of solutions a system of linear equations has. I can solve systems of linear equations by graphing. | Solving Systems of Equations by Graphing  |
| \*Refer to *Solving Systems of Equations by Graphing* lesson. | I can solve systems of equations (real world problems) by using substitution. | Solving Systems of Equations by Substitution |
| \*Refer to *Solving Systems of Equations by Graphing* lesson. | I can solve systems of equations by using elimination with addition and subtraction.I can solve systems of equations (real world problems) by using multiplication. | Solving Systems of Equations by Elimination |
|  | I can graph a linear inequality.  | Graphing Linear Inequalities(intro to systems) |
| **A1.A.REI.D.7** Graph the solutions to a linear inequality in two variables as a half-plane(excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes. | I can solve and apply systems of linear inequalities by graphing. | System of Linear Inequalities |
|  |  | \*\*word problems included in each section where applicable |
| **Exponent Rules**Allow 3.5 weeks for instruction, review, & assessment |
|  | I can identify and classify monomials. | Introduction to Monomials* Addition and subtraction
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| **A1.A.SSE.A.2** Use the structure of an expression to identify ways to rewrite it. **A1.A.SSE.B.3** Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.  | I can multiply and simplify expressions involving monomials.  | Multiplying Monomials * Product Rule
* Power Rule
* Zero Rule
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| **A1.A.SSE.A.2** Use the structure of an expression to identify ways to rewrite it. **A1.A.SSE.B.3** Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. | I can find the quotient of two monomials. | Dividing Monomials * Quotient Rule
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| **A1.A.SSE.A.2** Use the structure of an expression to identify ways to rewrite it. **A1.A.SSE.B.3** Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. | I can simplify expressions containing negative exponents. | Negative Exponents |
| **A1.A.SSE.A.2** Use the structure of an expression to identify ways to rewrite it. **A1.A.SSE.B.3** Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. | I can express numbers in scientific notation.I can find products and quotients of numbers expressed in scientific notation.  | Scientific Notation  |
| **A1.F.LE.A.2** Construct linear and exponential function, including arithmetic and geometric sequences, given a graph, a table, a description of a relationship, or input-output pairs.  | I can recognize geometric sequences  | Geometric Sequences |
| **A1.F.LE.A.1** Distinguish between situations that can be modeled with linear functions and with exponential functions.  | I can solve problems involving exponential growth and decay. | Exponential Growth and Decay  |