**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**  |
| **Polynomials and Factoring**Allow 4 weeks for instruction, review, & assessment |
| **A1.A.SSE.A.2** Use the structure of an expression to identify ways to rewrite it.  | I can find the degree of a polynomial.I can write polynomials in standard form. I can add and subtract polynomials. | Introduction to Polynomials * Classify, add, and subtract
 |
| **A1.A.APR.A.1** Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.  | I can multiply a polynomial by a monomial.I can multiply binomials by using the FOIL method. | Multiplying Polynomials |
| **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 factor polynomials. I can find the greatest common factors of polynomials. I can factor binomials that are the difference of squares.I can factor trinomials of the form x2 + bx + c.I can factor trinomials of the form ax2 + bx + c.I can factor by grouping. | Factoring Polynomials* GCF
* Difference of Squares
* Trinomials (x2 + bx + c)
* Trinomials (ax2 + bx + c)
* Grouping (four terms)
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| **A1.A.APR.A.1** Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.  | I can divide polynomials.  | Dividing Polynomials by a Binomial ?? Standard does not include divide. |
| **Quadratic Equations**Allow 4 weeks for instruction, review, & assessment |
| **A1.F.IF.C.6** Graph functions expressed symbolically and show key features of the graph, by hand and using technology. **A1.F.IF.C.7** Write a function defined by an expression in difference but equivalent forms to reveal and explain different properties of the function. **A1.A.APR.B.2** Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial.  | I can analyze the characteristics of graphs of quadratic functions. | Introduction to Quadratic Equations* Types of Parabolas
* Axis of Symmetry
* Vertex
* Minimum
* Maximum
 |
| **A1.F.IF.C.6** Graph functions expressed symbolically and show key features of the graph, by hand and using technology. **A1.F.IF.C.7** Write a function defined by an expression in difference but equivalent forms to reveal and explain different properties of the function.**A1.A.APR.B.2** Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial.  | I can graph quadratic functions. I can solve quadratic equations by graphing. I can estimate solutions of quadratic equations by graphing.  | Graphing Quadratic Equations (with quadratic roots/zeros) |
|  | I can use the vertex form of quadratic equations.  | Quadratic Equations: Vertex Form |
| **A1.A.REI.B.3** Solve quadratic equations and inequalities in one variable.  | I can solve quadratic equations algebraically. I can solve quadratic equations by using the Quadratic Formula.I can use the discriminant to determine the number of solutions of a quadratic equation.  | Solving Quadratic Equations* Factoring
* Quadratic Formula
* Square Roots
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| **A1.A.REI.B.3** Solve quadratic equations and inequalities in one variable. | I can apply knowledge of quadratics to include Projectile Motion. | Projectile Motion |
| **A1.F.LE.A** Construct and compare linear, quadratic, and exponential models and solve problems.  | I can compare linear and quadratic functions algebraically and graphically.  | Linear vs. Quadratic  |
| **A1.F.BF.B.2** Identify the effect on the graph of replacing f(x) by f(x) + k, k f(x), f(kx), and f(x + k) for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology.  | I can identify the effects of shifts on quadratics. \* f(kx) will not be included in Algebra 1. It is addressed in Algebra 2.  | Identify shifts of new functions  |
| **Rational Expressions** Allow 2 weeks for instruction, review, & assessment(Rollover into Quarter 4 if needed) |
| **A1.A.APR.A.1** Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.  | I can identify excluded values. I can identify values excluded from the domain of a rational expression. I can simplify rational expressions.  | Simplifying Rational Expressions |
| **A1.A.APR.A.1** Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials. | I can multiply rational expressions.  | Multiplying Rational Expressions |
| **A1.A.APR.A.1** Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials. | I can divide rational expressions.  | Dividing Rational Expressions |