WAYNE LOCAL SCHOOLS

ALGEBRA 1 **PACING GUIDE DESK REFERENCE 3rd QUARTER**

Unit	Standards	Lessons	Textbook Correlation
8	**A.APR.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. **A.SSE.1** Interpret expressions that represent a quantity in terms of its context.* **A.SSE.1.a** Interpret parts of an expression, such as terms, factors, and coefficients **A.SSE.1.b** Interpret complicated expressions by viewing one or more of their parts as a single entity. For example, interpret P(1+r)n as the product of P and a factor not depending on P. **A.SSE.2** Use the structure of an expression to identify ways to rewrite it. For example, see x4 – y4 as (x2)2 – (y2)2 , thus recognizing it as a difference of squares that can be factored as (x2 – y2)(x2 + y2).	8 lessons 20 days 1 quiz 1 test	8-1 (2 days) 8-2 (2 days) 8-3 (2 days) 8-4 (2 days) Quiz 8-5 (2 days) 8-6 (2 days) 8-7 (2 days) 8-8 (2 days)
9	**A.CED.1** Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions. **A.CED.2** Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales **A.REI.1**	8 lessons 18 days 1 quiz 1 test	9-1 (2 days) 9-2 9-3 (2 days) 9-4 Quiz 9-5 (2 days) 9-6 (2 days) 9-7 (2 days) 9-8 (2 days)

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	Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method. **A.REI.4** Solve quadratic equations in one variable **A.REI.4.a** Use the method of completing the square to transform any quadratic equation in x into an equation of the form (x – p) 2 = q that has the same solutions. Derive the quadratic formula from this form. **A.REI4.b** Solve quadratic equations by inspection (e.g., for x2 = 49), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as a ± bi for real numbers a and b. **A.REI.7** Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. For example, find the points of intersection between the line y = –3x and the circle x2 + y2 = 3. **A.REI.11** 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 solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where f(x) and/or g(x) are linear, polynomial, rational, absolute value, exponential, and logarithmic functions. **A.SSE.1** Interpret expressions that represent a quantity in terms of its context.* **A.SSE.1.a** Interpret parts of an expression, such as terms, factors, and coefficients **A.SSE.1.b**		

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	Interpret complicated expressions by viewing one or more of their parts as a single entity. For example, interpret P(1+r)n as the product of P and a factor not depending on P. **F.IF.4** For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.* **F.IF.5** Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.* **F.IF.6** 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.* **F.IF.7** Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.* **F.IF.7.a** Graph linear and quadratic functions and show intercepts, maxima, and minima. **F.IF.7.b** Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions. **F.BF.3** 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. Include recognizing even and odd functions from their graphs and algebraic expressions for them. **F.LE.1** Distinguish between situations that can be modeled with linear functions and with exponential functions. **F.LE.1a** Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals. **F.LE.2** Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table). **F.LE.3** Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function. **N.Q.3** Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.		
10	**G.SRT.8** Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.* **A.REI.2** Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise. **A.CED.2** Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. **F.IF.7.b** Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.	5 lessons 10 days 1 test	10-1 10-2 (2 days) 10-3 (2 days) 10-4 (2 days) 10-5

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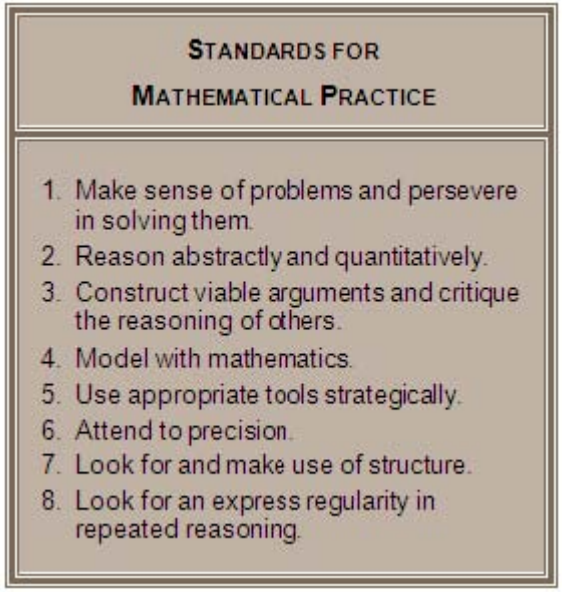

Unit 8: Polynomials and Factoring

I can classify, add, and subtract polynomials.
I can multiply a monomial by a polynomial.
I can factor a monomial from a polynomial.
I can multiply two binomials or a binomial by a trinomial.
I can find the square of a binomial and to find the product of a sum and difference.
I can factor trinomials of the form $x^2 + bx + c$.
I can factor trinomials of the form $ax^2 + bx + c$.
I can factor perfect-square trinomials and the differences of two squares.
I can factor higher-degree polynomials by grouping.

Unit 9: Quadratic Functions and Equations

I can graph quadratic functions of the form $y = ax^2$ and $y = ax^2 + c$.
I can graph quadratic functions of the form $y = ax^2 + bx + c$.
I can solve quadratic equations by graphing and using square roots.
I can solve quadratic equations by factoring.

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I can solve quadratic equations by completing the square.
I can solve quadratic equations using the quadratic formula.
I can find the number of solutions of a quadratic equation.
I can choose a linear, quadratic, or exponential model for data.

Unit 10: Radical Expressions and Equations
I can simplify radicals involving products and quotients.
I can simplify sums and differences of radical expressions.
I can simplify products and quotients of radical expressions.
I can solve equations containing radicals.
I can identify extraneous solutions.
I can graph square root functions.
I can translate graphs of square root functions.