WAYNE LOCAL SCHOOLS
Algebra 2 PACING GUIDE DESK REFERENCE 3rd QUARTER

Unit	Standards	Lessons	Textbook Correlation
7	CCSS.MATH.CONTENT.HSA.SSE.A.1.A Interpret parts of an expression, such as terms, factors, and coefficients. CCSS.MATH.CONTENT.HSA.SSE.A.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*. CCSS.MATH.CONTENT.HSA.SSE.A.2 Use the structure of an expression to identify ways to rewrite it. *For example, see* $x^4 - y^4$ *as* $(x^2)^2 - (y^2)^2$*, thus recognizing it as a difference of squares that can be factored as* $(x^2 - y^2)(x^2 + y^2)$. CCSS.MATH.CONTENT.HSA.CED.A.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*. CCSS.MATH.CONTENT.HSA.CED.A.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. CCSS.MATH.CONTENT.HSA.APR.B.3 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. CCSS.MATH.CONTENT.HSA.APR.D.6 Rewrite simple rational expressions in different forms; write $^{a(x)}/_{b(x)}$ in the form $q(x) + ^{r(x)}/_{b(x)}$, where $a(x)$, $b(x)$, $q(x)$, and $r(x)$ are polynomials with the degree of $r(x)$ less than the degree of $b(x)$, using inspection, long division, or, for the more complicated examples, a computer algebra system. CCSS.MATH.CONTENT.HSA.REI.A.2 Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise. CCSS.MATH.CONTENT.HSA.REI.D.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	20 days	Pearson Chapter 8 8-1, 8-2, 8-3, 8-4, 8-5, 8-6

	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.* CCSS.MATH.CONTENT.HSF.BF.A.1.B Combine standard function types using arithmetic operations. *For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.*		

8	CCSS.MATH.CONTENT.HSA.SSE.B.4 Derive the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems. *For example, calculate mortgage payments.*[*] CCSS.MATH.CONTENT.HSF.IF.A.3 Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. *For example, the Fibonacci sequence is defined recursively by f(0) = f(1) = 1, f(n+1) = f(n) + f(n-1) for n ≥ 1.*	5 days	Pearson 9-3, 9-5
9	CCSS.MATH.CONTENT.HSF.IF.C.8 Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. CCSS.MATH.CONTENT.HSG.GPE.A.1 (optional) Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation. CCSS.MATH.CONTENT.HSG.GPE.A.2 (optional) Derive the equation of a parabola given a focus and directrix. CCSS.MATH.CONTENT.HSG.GPE.A.3 (optional) (+) Derive the equations of ellipses and hyperbolas given the foci, using the fact that the sum or difference of distances from the foci is constant.	15 days	Pearson 10-1, 10-2, 10-3, 10-4, 10-5
Units: 7. Rational Functions 8. Sequence and Series 9. Conic Sections			
Mathematical Practices			

Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

I Can Statements:

- I can identify and describe inverse and direct variation functions.
- I can graph asymptotes of rational functions.
- I can identify whether a rational function has an asymptote.
- I can define domains of simplified rational expressions to make them equivalent to the originals.
- I can identify mathematical patterns found in a sequence.
- I can find a rule to describe a pattern.
- I can find the common ratio of a geometric sequence.
- I can determine whether a geometric sequence converges.
- I can identify the possible conic sections formed depending on the angle of intersection of the cone and plane.
- I can graph functions of circles.
- I can identify conic sections based on their equations.
- I can differentiate between ellipses and hyperbolas algebraically and graphically.