



Stockton Unified School District

EDISON HIGH SCHOOL

Home of the Vikings



Essential Outcomes Chart: What is it we expect students to learn?

Grade:	9-12	Subject:	Alg. II	Semester		Team Members:	Charles Adams Kodee Johnson Mariya Wheary	Maha Ali Tory Kooyman	Jahaira Carranza Luis Morais	
Standard Description		Example Rigor		Prerequisite Skills		Common Assessment		When Taught?		Extension Standards
What is the essential standard to be learned? Describe in student-friendly vocabulary.		What does proficient student work look like? Provide an example and/or description.		What prior knowledge, skills, and/or vocabulary is/are needed for a student to master this standard?		What assessment(s) will be used to measure student mastery?		When will this standard be taught?		What will we do when students have learned the essential standard(s)?
Students solve systems of linear equations and inequalities in two and three variables by substitution, elimination and/or graphing.		Given the system of equations a student will be able to determine the most efficient method to solve.		Vocabulary: inconsistent, dependent, and independent. Prerequisite skills: rewrite the given equation standard form and/or slope-intercept form.		Topic 1		Quarter 1		
Students add, subtract, multiply or divide complex numbers.		Proficient student will be able to conjugate complex numbers using any operation.		Vocabulary: imaginary number, conjugate, complex number (real and imaginary).		Topic 2		Quarter 1		
Students solve and graph quadratic		Proficient student will have a deeper understanding of		Rewrite the quadratic equation		Topic 2		Quarter 2		

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<p>equations by factoring, completing the square, or using the quadratic formula. Students apply these techniques in solving word problems. They also solve quadratic equations in the complex number system.</p>	<p>projectile motion. For example: An object is launched at 19.6 meters per second (m/s) from a 58.8-meter tall platform. The equation for the object's height s at time t seconds after launch is $s(t) = -4.9t^2 + 19.6t + 58.8$, where s is in meters. When does the object strike the ground?</p>	<p>in Standard Form, substitution, simplify using the quadratic form, graph on a coordinate plane</p>			
<p>Students add, subtract, multiply & divide polynomials and solve polynomial equations.</p>	<p>Proficient student will be able to find the solutions to the polynomial equations using the variety of theorems. Example: $x^3 + 9x^2 + 24x + 20 = 0$</p>	<p>Like terms, distribute, binomial theorem, Pascal's triangle, rational root theorem, Descartes rule of signs</p>	<p>Topic 3</p>	<p>Quarter 2</p>	
<p>Students factor polynomials representing the difference of squares, perfect</p>	<p>Students will be able to recognize the pattern of the sum and difference of two square and cubic expressions and then be</p>	<p>Sum and difference of squares, sum and difference of cubes</p>	<p>Topic 3</p>	<p>Quarter 2</p>	

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square trinomials, and the sum and difference of two cubes.	able to factor and use as a tool to solve. Example: $27x^3 + 125 = 0$				
Students add, subtract, multiply, divide, reduce, and evaluate rational expressions with monomial and polynomial denominators and simplify complicated rational expressions, including those with negative exponents in the denominator.	Proficiently measured when students read a real life work problem, setup the problem and solve. Example: Two hoses work together to fill a pool. It takes 7 hours for the pool to be filled by both hoses. One hose takes 12 hours more than the other. How long does it take for each hose to fill the pool?	Lowest common denominator (LCD), undefined, restriction on the variable, extraneous solutions	Topic 4/5	Quarter 3	
Solve and graph radicals	Example: $2\sqrt{x - 1} - \sqrt{26 + x} = 0$	Square root, cube root, cross-multiply	Topic 4/5	Quarter 3	

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<p>Students use the inverse relationship between exponents and logarithms to solve problems involving logarithms and exponents.</p>	<p>The bacteria count in a heated swimming pool is 1500 bacteria per cubic centimeter on Monday morning at 8 AM, and the count doubles each day thereafter. What bacteria count can you expect on Wednesday at 8 AM?</p>	<p>Logarithm, common log, natural log,</p>	<p>Topic 6</p>	<p>Quarter 3</p>	
<p>Students use the laws of fractional exponents to solve problems involving exponential growth and decay.</p>	<p>The half-life of caffeine is 5 hours; this means that approximately $\frac{1}{2}$ of the caffeine in the bloodstream is eliminated every 5 hours. Suppose you drink a can of Instant Energy, a 16-ounce energy drink that contains 80 mg of caffeine. Suppose the caffeine in your bloodstream peaks at 80 mg.</p> <p>How much caffeine will remain in your bloodstream</p>	<p>Exponential Growth and Decay</p>	<p>Topic 6</p>	<p>Quarter 3</p>	

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	after 5 hours? 10 hours? 1 hour? 2 hours? Record your answers in the table. Explain how you came up with your answers.				
Students will extend the domain of trigonometric functions using the unit circle, model periodic phenomena with trigonometric functions .	Graph $y = \sin 2x$ Students will have to recall specific values on the unit circle. For example: cosine 60° , tan 135°	Sine, cosine, tangent, secant, cosecant, cotangent, period, shift graph up, down, left or right	Topic 7	Quarter 4	
Students will derive and use formulas for the sum and the nth term of arithmetic and geometric sequence and series. Students will derive formulas for the infinite geometric series.	In a store display there are 29 cans on the bottom row, if the top row has 3 cans, how many cans are there total? There are eight rows of cans.	Arithmetic series and sequence, infinite and finite, geometric series and sequence, summation, recursive formula, Fibonacci sequence	Topic 8	Quarter 4	
Students use the		Probability, sample	Topic 9	Quarter 4	

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<p>definition of independent events and the rules for addition, multiplication, and complementation to solve for probabilities of particular events in finite sample spaces.</p>	<p>Example: You have 6 books in your backpack. Three are novels, two are non-fiction and one is a poetry book. Today you grab one book from the backpack without looking and return it later. Tomorrow you do the same thing. a) What is the probability that you grab a novel both days?</p>	<p>space, outcome, independent and dependent events</p>			
<p>Students use the definition of conditional probability to solve for probabilities in finite sample spaces.</p>	<p>Example: A student made the following observations about the weather in his hometown. On 30% of the days, the sky was mostly clear. During the mostly clear days, it rained 5% of the time. During the cloudy days it rained 34% of the time.</p>	<p>Conditional probability, finite sample space</p>	<p>Topic 9</p>	<p>Quarter 4</p>	

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	<p>Use a tree diagram to find the probability that a day will start out</p> <p>a) mostly clear and then it will rain b) mostly clear, given that it will rain</p>				
<p>Students compute the variance and the standard deviation of a distribution of data.</p>	<p>Find the mode, median, mean, lower quartile, upper quartile, interquartile range, and population standard deviation for each data set.</p> <p>Senator Age Patrick Leahy 34 Carl Levin 44 Tammy Baldwin 50 John Barrasso 54 Mike Johanns 58 Mark Pryor 39 Rand Paul 47 Barbara Boxer 52 Kay Hagan 55 John Boozman 60 Brian Schatz 40 John Cornyn 50 Claire McCaskill 53 Jerry Moran 56 Jim Risch 65 John Thune 43</p>	<p>Mean, standard deviation, variance, median, mode</p>	<p>Topic 9</p>	<p>Quarter 4</p>	

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