

Algebra II Standards Tracker

Essential Standards are denoted with an (E) and colored gray

Standard	Description	MP 1	MP 2	MP 3	MP 4	MP 5	MP 6
Arithmetic and Structure of Expressions, Equations, and Functions							
AII.ASE.1	Explain how extending the properties of integer exponents to rational numbers allows for a notation for radicals in terms of rational exponents (e.g., $5^{1/3}$) and explain how this is defined.	x					
AII.ASE.2	Rewrite algebraic rational expressions in equivalent forms (e.g., using properties of exponents and factoring techniques) and describe how rewriting those expressions reveals mathematical structure. Add, subtract, multiply, and divide algebraic rational expressions. (E)	x					
AII.ASE.3	Solve systems of equations consisting of linear and nonlinear equations or functions in two variables algebraically and graphically.		x				
AII.ASE.4	Solve exponential and logarithmic equations in one variable.		x				
Function Families							
AII.FF.1	Using technology, identify, create, and connect algebraic and graphical representations of each of the function families listed: a. Quadratic b. Polynomial c. Square root d. Rational e. Exponential f. Logarithmic g. Piecewise-defined and absolute value functions (E)			x			
AII.FF.2	Graph each of the families of function with and without technology. Identify and describe key features, such as intercepts, domain and range, asymptotes, symmetry, and end behavior. Create inverse functions algebraically and/or graphically based on a given function. Model real-world situations with each function family. (E)			x			
AII.FF.3	Use graphical and algebraic structures and techniques to transform functions into equivalent forms to expose different information and identify key features. Connect the meaning of the key features to contextual situations. (E)				x		
AII.FF.4	Solve real-world problems with each function family, including situations in the context of science and economic phenomena. (E)				x		
Modeling with Functions and Data							
AII.MFD.1	Define functions and their inverses and illustrate examples algebraically and graphically. Identify real-world situations that can be modeled using functions. (E)					x	
AII.MFD.2	Represent real-world problems that can be modeled by linear, quadratic, exponential, and rational functions using tables, graphs, and equations. Use technology to represent the functional relationships and translate and interpret different forms (e.g., vertex form of a quadratic, intercepts, end behavior) with respect to the context. (E)					x	

AII.MFD.3	Use technology to find a linear, quadratic, or exponential function that models a relationship for a bivariate data set to make predictions; interpret the correlation coefficient for linear models. Compare and evaluate model fit using different function families. (E)							X
AII.MFD.4	Explore the effects of function transformations using graphing technology. Explain the effects of transformations of functions such as $f(x) + k$, $kf(x)$, $f(kx)$, or $f(x + k)$ for different functions and values of k . (E)							X

Semester 2

Modeling with Advanced Algebra								
AII.MAA.1	Use algebraic and graphical strategies to make use of structure with quadratic, polynomial, and rational functions to solve real-world problems, including but not limited to: a. Completing the square to rewrite contextual quadratic functions in vertex form and interpret the outcome; b. Determining the number of solutions to a function using graphical and algebraic forms (including the discriminant and complex numbers as appropriate); c. Factoring, chunking, and rewriting functions using properties of exponents; and d. Identifying and explaining extraneous roots	X						
AII.MAA.2	Represent and solve real-world systems of linear equations and inequalities in two or three variables algebraically and using technology. Interpret the solution, and determine whether it is reasonable. (E)		X					
AII.MAA.3	Model real-world phenomena using linear programming and matrices.		X					
AII.MDS.1	Distinguish between random and non-random sampling methods, identify possible sources of bias in sampling, describe how such bias can be controlled and reduced, evaluate the characteristics of a good survey and well-designed experiment, design simple experiments or investigations to collect data to answer questions of interest, and make inferences from sample results.			X				
AII.MDS.2	Using the results of a simulation, decide if a specified model is consistent with the results. Construct a theoretical model, and apply the law of large numbers to show the relationship between the two models. (E)				X			
AII.MDS.3	Use data science techniques such as predictive modeling, linear algebra, and conditional probability to analyze data sets and make and evaluate claims.						X	
Modeling with Quantities								
AII.MQ.1	Model real-world probability situations using permutations, combinations, and the Fundamental Counting Principle. (E)							X