

Algebra 3-4 Curriculum Map - Phase 1



***The district-adopted high school math curriculum is new for the 2022-23 school year. This map is aligned to the new curriculum and is in Phase 1 of implementation.

Algebra 3-4 is about: (from AZ Standards)

- (1) Extend the real number system to the complex number system, representing radicals with rational exponents.
- (2) Solve and interpret solutions to a variety of equations, inequalities, and systems of equations.
- (3) Demonstrate competency graphing and interpreting functions extending from linear, quadratic, and exponential with integer exponents to polynomial, radical, rational, exponential with real exponents, logarithmic, trigonometric functions, and piece-wise defined functions.
- (4) Extend simple and compound probability calculations to conditional probability

- [Arizona Mathematics Standards Algebra 3-4](#)
- The standard number is designed for recording purposes and does not imply instructional sequence or importance.
- Our Governing Board adopted curriculum resources for Algebra 3-4 are ALEKS and McGraw Hill.

Unit #	Unit Name	Key Content	AZ Standards
	Initial Knowledge Check	Students will complete the Initial Knowledge Check on the ALEKS platform during the first week of school.	
1	Family of Functions	<ul style="list-style-type: none"> • Determine if functions are one-to-one and onto. • Determine the linearity, intercepts, and symmetry of functions. • Analyze and compare graphs. • Graph functions and inequalities in two variables. • Identify and use transformations of functions. 	F-BF.A2 F-IF.B6 F-BF.B3 F-IF.C7 N-Q.A.1 N-Q.A.2 N-Q.A.3 A.CED.A1 A-REI.D11 S-ID.B6 F-BF.A1 F-IF.B4
2	Quadratic Functions	<ul style="list-style-type: none"> • Graph quadratic functions and inequalities. • Solve quadratic equations and inequalities using a variety of methods. • Use quadratic functions to model real-world situations and solve problems. 	A-CED.A1 F-IF.B4 F-IF.C7 F-IF.C8 F-IF.B6 F-IF.C9 A-APR.B3 F-BF.A1 N-CN.C7 A-REI.B4b F-BF.B3 F-BF.A.1a N-CN.A1 N-CN.A2 A-REI.C7 N-Q.A.1 N-Q.A.2 N-Q.A.3 S-ID.B6 A-REI.D11 A-SSE.A2
3	Polynomial Functions	<ul style="list-style-type: none"> • Analyze polynomial functions by examining key features and graphing. • Analyze the graphs of polynomial functions by identifying key features. • Add, subtract, and multiply polynomials. • Divide polynomials by using long division and synthetic division. • Expand powers of binomials. • Solve polynomial equations by graphing, factoring, and the Fundamental Theorem of Algebra. • Prove polynomial identities. 	A-APR.B3 F-IF.B4 F-IF.C7 F-BF.A1 F-IF.B6 F-IF.C9 A-CED.A1 N-Q.A.1 N-Q.A.2 N-Q.A.3 A-APR.C4 A-SSE.A2 A-REI.D11 N-CN.A1 N-CN.A2 S-ID.B.6

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		<ul style="list-style-type: none"> Evaluate and factor equations using the Factor and Remainder Theorem. 	
4	Rational Functions	<ul style="list-style-type: none"> Multiply and divide rational expressions. Add and subtract rational expressions. Graph and analyze reciprocal functions. Graph and analyze rational functions. Recognize and solve direct, joint, inverse, and combined variation equations. 	A-CED.A1 F-BF.A1a F-BF.B3 A-REI.A1 A-REI.A2 F-IF.B4 F-IF.C7d A-APR.D6 A-SSE.A2 N-CN.A1 N-CN.A2 A-APR.D.6 N-Q.A.1 N-Q.A.2 N-Q.A.3
5	Radical Functions	<ul style="list-style-type: none"> Graph and verify inverses. Simplify expressions and radical and rational exponents. Graph, analyze, and solve radical functions and equations. 	N-RN.A1 N-RN.A2 A-REI.A1 A-REI.A2 F-BF.A1 F-BF.B3 F-BF.B4 F-IF.B.4 F-IF.B.6 F-IF.C7 F-IF.C9 A-SSE.B3 N-Q.A.1 N-Q.A.2 N-Q.A.3 A-SSE.A2
6	Exponential & Logarithmic Functions	<ul style="list-style-type: none"> Graph exponential growth and decay functions. Solve exponential equations and inequalities algebraically and by graphing. Analyze expressions and functions involving the natural base e. Generate geometric series and find their sums. Choose the best function type to model sets of data by using technology. Write and evaluate logarithms and graph logarithmic functions. Simplify logarithmic expressions and solve exponential equations by using common logarithms. Simplify logarithmic expressions and solve exponential equations by using natural logarithms. Write exponential growth and decay equations and solve them by using logarithms. 	F-IF.B4 F-IF.B6 F-IF.C7 F-IF.C8 F-IF.C9 F-BF.A1 F-LE.A4 F-LE.B5 F-BF.A2 F-IF.A3 F-BF.B3 F-BF.B4a S-ID.C.10 A-CED.A1 A-SSE.B3c A-SSE.B4 A-REI.D11 N-Q.A.1 N-Q.A.2 N-Q.A.3
7	Sequences & Series	<ul style="list-style-type: none"> Solve linear equations and inequalities in one in one variable. Solve systems of equations by graphing, substitution or elimination. Solve equations and inequalities involving absolute value. 	A2.F-BF.A.1a A2.F-BF.A.2 N-Q.A.1 N-Q.A.2 N-Q.A.3 A2.A-SSE.B.4
8	Statistics & Probability	<ul style="list-style-type: none"> Classify and identify bias in surveys and studies. Collect, analyze, and use data to compare theoretical and experimental probabilities. Use statistics to summarize, represent, and compare sets of data. Use statistics and normal distributions to analyze data. 	S-CP.A3 S-CP.A4 S-CP.A5 S-CP.B6 S-CP.B7 S-CP.B8 S-ID.A4 S-IC.A1 S-IC.A2 S-IC.B3 S-IC.B4 S-ID.B6a
9	Optional Topics	<ul style="list-style-type: none"> Trigonometry Conic Sections Matrices 	

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		<ul style="list-style-type: none">• ACT Prep• Solving Systems with Three Variables (Honors only)	
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