

Georgia's K-12 Mathematics Standards 2021

Advanced Algebra: Concepts and Connections

Unit 1: Inferences and Conclusions from Data

Topic	Lesson	Title	Standard(s)
Topic A	Populations Versus Random Samples and Random Sampling		
	1.1	Differences Between Populations and Samples	AA.DSR.2.1
	1.2	Simple Random Sampling	AA.DSR.2.1
	1.3	Other Methods of Random Sampling	AA.DSR.2.1
Topic B	Surveys, Experiments, and Observational Studies		
	1.4	Identifying Surveys, Experiments, and Observational Studies	AA.DSR.2.1
	1.5	Designing Surveys, Experiments, and Observational Studies	AA.DSR.2.1 AA.DSR.2.2
Topic C	Estimating Sample Proportions and Sample Means		
	1.6	Estimating Sample Proportions	AA.DSR.2.3
	1.7	The Binomial Distribution	AA.DSR.2.3
	1.8	Estimating Sample Means	AA.DSR.2.3
	1.9	Estimating With Confidence	AA.DSR.2.3
Topic D	Using the Normal Curve		
	1.10	Normal Distributions and the 68–95–99.7 Rule	AA.DSR.2.4
	1.11	Standard Normal Calculations	AA.DSR.2.5
	1.12	Assessing Normality	AA.DSR.2.5
Topic E	Comparing Treatments and Reading Reports		
	1.13	Evaluating Treatments	AA.DSR.2.7
	1.14	Designing and Simulating Treatments	AA.DSR.2.6
	1.15	Reading Reports	AA.DSR.2.8

Unit 2: Exponential Functions and their Inverses

Topic	Lesson	Title	Standard(s)
Topic A	Comparing Exponential and Logarithmic Functions		
	2.1	Comparing Exponential and Logarithmic Functions	AA.FGR.3.1 AA.FGR.3.2 AA.FGR.3.3
Topic B	Modeling with Exponential and Logarithmic Equations		
	2.2	Creating and Solving Exponential Equations	AA.FGR.3.4
	2.3	Creating and Solving Logarithmic Equations	AA.FGR.3.5
	2.4	Problem Solving with Exponential and Logarithmic Equations	AA.FGR.3.6 AA.FGR.3.7

Unit 3: Radical Equations and Functions

Topic	Lesson	Title	Standard(s)
Topic A	Defining, Rewriting, and Evaluating Rational Exponents		
	3.1	Defining, Rewriting, and Evaluating Rational Exponents	AA.FGR.4.1
Topic B	Radical Equations in One Variable		
	3.2	Solving Radical Equations	AA.FGR.4.2
	3.3	Modeling with Radical Equations	AA.FGR.4.4
Topic C	Radical Functions		
	3.4	Graphing Radical Functions	AA.FGR.4.3
	3.5	Modeling with Radical Functions	AA.FGR.4.5

Unit 4: Quadratics Revisited

Topic	Lesson	Title	Standard(s)
Topic A	Reviewing Quadratics		
	4.1	Reviewing Quadratics	AA.FGR.5.1
Topic B	Operating With Complex Numbers		
	4.2	Defining Complex Numbers, i and i^2	AA.FGR.5.2
	4.3	Adding and Subtracting Complex Numbers	AA.FGR.5.3
	4.4	Multiplying Complex Numbers	AA.FGR.5.3
Topic C	Solving Quadratic Equations and Inequalities		
	4.5	Factoring	AA.FGR.5.4
	4.6	Polynomial Identities and the Fundamental Theorem of Algebra	AA.FGR.5.4
	4.7	Solving Quadratic Equations With Complex Solutions	AA.FGR.5.5 AA.FGR.5.7
	4.8	Solving Quadratic Inequalities	AA.FGR.5.5 AA.FGR.5.7
Topic D	Solving Systems of Equations		
	4.9	Solving Systems Graphically	AA.FGR.5.6
	4.10	Solving Systems Algebraically	AA.FGR.5.6
Topic E	Polynomial Functions		
	4.11	Describing End Behavior and Turns	AA.FGR.5.8 AA.FGR.5.9
	4.12	Polynomial Identities	AA.FGR.5.10
	4.13	Complex Polynomial Identities	AA.FGR.5.10
	4.14	Rewriting Polynomials in Various Forms	AA.FGR.5.10 AA.FGR.5.11

Unit 5: Matrices

Topic	Lesson	Title	Standard(s)
Topic A	Manipulating Matrices		
	5.1	Operations with Matrices	AA.PAR.6.1
	5.2	Using Operations on Matrices	AA.PAR.6.1
Topic B	Using Matrices to Solve Systems of Equations		
	5.3	Representing a System of Linear Equations as a Single Matrix	AA.PAR.6.2
	5.4	Finding the Inverse of a Matrix and Using It to Solve a System of Equations	AA.PAR.6.3
	5.5	Linear Programming	AA.PAR.6.4
Extension Activity		Problem Solving with Matrices	AA.PAR.6.4

Unit 6: Trigonometric Functions

Topic	Lesson	Title	Standard(s)
Topic A	Introducing Trigonometric Functions		
	6.1	Defining Trigonometric Functions Using the Unit Circle	AA.GSR.7.1
	6.2	Evaluating Trigonometric Functions	AA.GSR.7.1
Topic B	Graphs of Trigonometric Functions		
	6.3	Periodic Phenomena and Amplitude, Frequency, and Midline	AA.GSR.7.2
	6.4	Using Trigonometric Functions to Model Periodic Phenomena	AA.GSR.7.2

Unit 7: Rational Expressions

Topic	Lesson	Title	Standard(s)
Topic A	Operating with Rational Expressions		
	7.1	Structures of Rational Expressions	AA.FGR.8.1
	7.2	Adding and Subtracting Rational Expressions	AA.FGR.8.2
	7.3	Multiplying Rational Expressions	AA.FGR.8.2
	7.4	Dividing Rational Expressions	AA.FGR.8.2
Topic B	7.5	Graphing Rational Functions	AA.FGR.8.3
Topic C	Solving Rational Equations		
	7.6	Solving Rational Equations	AA.FGR.8.4