



**Georgia's K-12
Mathematics Standards
Curriculum Map**

2026 – 2027

**ADVANCED ALGEBRA:
CONCEPTS AND CONNECTIONS**

FCS ADVANCED ALGEBRA: CONCEPTS AND CONNECTIONS CURRICULUM MAP

Georgia's Advanced Algebra Mathematics Standards							
Semester 1				Semester 2			
Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8
Investigating Linear Algebra and Matrices	Modeling Polynomial Functions	Exploring Rational Functions	Investigating Radical Functions	Modeling Exponential and Logarithmic Functions	Exploring Trigonometry and the Unit Circle	Investigating Descriptive and Inferential Statistics	Culminating Capstone Unit
15 Days	27 Days	18 Days	23 Days	32 Days	20 Days	25 Days	10 Days
<u>Unit Dates</u> 8/5/2026 – 8/25/2026	<u>Unit Dates</u> 8/26/2026 – 10/9/2026	<u>Unit Dates</u> 10/13/2026 – 11/6/2026	<u>Unit Dates</u> 11/9/2026 – 12/16/2026	<u>Unit Dates</u> 1/5/2027 – 2/25/2027	<u>Unit Dates</u> 2/26/2027 – 3/26/2027	<u>Unit Dates</u> 3/29/2027 – 5/7/2027	<u>Unit Dates</u> 5/10/2027 – 5/21/2027
Learning Expectations AA.PAR.6.1 AA.PAR.6.2 AA.PAR.6.3 AA.PAR.6.4	Learning Expectations AA.FGR.5.1 AA.FGR.5.2 AA.FGR.5.3 AA.FGR.5.4 AA.FGR.5.5 AA.FGR.5.6 AA.FGR.5.7 AA.FGR.5.8 AA.FGR.5.9 AA.FGR.5.10 AA.FGR.5.11	Learning Expectations AA.FGR.8.1 AA.FGR.8.2 AA.FGR.8.3 AA.FGR.8.4	Learning Expectations AA.FGR.4.1 AA.FGR.4.2 AA.FGR.4.3 AA.FGR.4.4 AA.FGR.4.5	Learning Expectations AA.FGR.3.1 AA.FGR.3.2 AA.FGR.3.3 AA.FGR.3.4 AA.FGR.3.5 AA.FGR.3.6 AA.FGR.3.7	Learning Expectations AA.GSR.7.1 AA.GSR.7.2	Learning Expectations AA.DSR.2.1 AA.DSR.2.2 AA.DSR.2.3 AA.DSR.2.4 AA.DSR.2.5 AA.DSR.2.6 AA.DSR.2.7 AA.DSR.2.8	Learning Expectations All Standards
AA.MM.1-4 AA.MP.1-8	AA.MM.1-4 AA.MP.1-8	AA.MM.1-4 AA.MP.1-8	AA.MM.1-4 AA.MP.1-8	AA.MM.1-4 AA.MP.1-8	AA.MM.1-4 AA.MP.1-8	AA.MM.1-4 AA.MP.1-8	AA.MM.1-4 AA.MP.1-8
The Framework for Statistical Reasoning , Mathematical Modeling Framework , and the K-12 Mathematical Practices should be taught throughout the units.							

Unit 1: Investigating Linear Algebra and Matrices

15 Days

Unit Dates: 8/5/2026 - 8/25/2026

AA.PAR.6: Represent data with matrices, perform mathematical operations, and solve systems of linear equations leading to real-world linear programming applications data.

AA.MM.1: Apply mathematics to real-life situations; model real-life phenomena using mathematics.

- AA.PAR.6.1:** Use matrices to represent data, and perform mathematical operations with matrices and scalars, demonstrating that some properties of real numbers hold for matrices, but that others do not.
- AA.PAR.6.2:** Rewrite a system of linear equations using a matrix representation.
- AA.PAR.6.3:** Use the inverse of an invertible matrix to solve systems of linear equations.
- AA.PAR.6.4:** Utilize linear programming to represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret data points as solutions or non-solutions under the established constraints in real-world problems.

Unit 2: Modeling Polynomial Functions

27 Days

Unit Dates: 8/26/2026 - 10/9/2026

AA.FGR.5: Extend exploration of quadratic solutions to include real and non-real numbers and explore how these numbers behave under familiar operations and within real-world situations; create polynomial expressions, solve polynomial equations, graph polynomial functions, and model real-world phenomena.

AA.MM.1: Apply mathematics to real-life situations; model real-life phenomena using mathematics.

- AA.FGR.5.1:** Graph and analyze quadratic functions in contextual situations and include analysis of data sets with regressions
- AA.FGR.5.2:** Define complex numbers i such that $i^2 = -1$ and show that every complex number has the form $a + bi$ where a and b are real numbers that the complex conjugate is $a - bi$.
- AA.FGR.5.3:** Use the relation $i^2 = -1$ and the commutative, associative, and distributive properties to add, subtract, multiply complex numbers.
- AA.FGR.5.4:** Use the structure of an expression to factor quadratics.
- AA.FGR.5.5:** Write and solve quadratic equations and inequalities with real coefficients and use the solution to explain a contextual situation.
- AA.FGR.5.6:** Solve systems of quadratic and linear functions to determine points of intersection.
- AA.FGR.5.7:** Create and analyze quadratic equations to represent relationships between quantities as a model for contextual situations.
- AA.FGR.5.8** Identify the number of zeros that exist for any polynomial based upon the greatest degree of the polynomial and the end behavior of the polynomial by observing the sign of the leading coefficient.
- AA.FGR.5.9:** Identify zeros of polynomial functions using technology or pre-factored polynomials and use the zeros to construct a graph of the function defined by the polynomial function. Analyze identify key features of these polynomial functions.
- AA.FGR.5.10:** Use the structure of an expression to factor polynomials, including the sum of cubes, the difference of cubes, and higher-order polynomials that may be expressed as a quadratic within a quadratic.
- AA.FGR.5.11:** Using all the zeros of a polynomial function, list all the factors, and multiply to write a multiple of the polynomial function in standard form.

Unit 3: Exploring Rational Functions

18 Days

Unit Dates: 10/13/2026 - 11/6/2026

AA.FGR.8: Analyze the behaviors of rational functions to model applicable mathematical problems.

AA.MM.1: Apply mathematics to real-life situations; model real-life phenomena using mathematics.

AA.FGR.8.1: Rewrite simple rational expressions in equivalent forms.

AA.FGR.8.2: Add, subtract, multiply, and divide rational expressions, including problems in context, and express rational expressions in irreducible form.

AA.FGR.8.3: Graph rational functions, identifying key characteristics.

AA.FGR.8.4: Solve simple rational equations in one variable and give examples showing how extraneous solutions may arise.

Unit 4: Investigating Radical Functions

23 Days

Unit Dates: 11/9/2026 - 12/16/2026

AA.FGR.4: Explore and analyze structures and patterns for radical functions and use radical expressions, equations, and functions to model real-life phenomena.

AA.MM.1: Apply mathematics to real-life situations; model real-life phenomena using mathematics.

AA.FGR.4.1: Rewrite radical expressions as expressions with rational exponents. Extend the properties of integer exponents to rational exponents.

AA.FGR.4.2: Solve radical equations in one variable and give examples showing how extraneous solutions may arise.

AA.FGR.4.3: Analyze and graph radical functions.

AA.FGR.4.4: Create, interpret and solve radical equations with one unknown value and use them to solve problems that model real- world situations.

AA.FGR.4.5: Create, interpret, and solve radical equations in two or more variables to represent relationships between quantities.

Unit 5: Modeling Exponential and Logarithmic Functions

32 Days

Unit Dates: 1/5/2027 - 2/25/2027

AA.FGR.3: Explore and analyze structures and patterns for exponential and logarithmic functions and use exponential and logarithmic expressions, equations, and functions to model real-life phenomena.

AA.MM.1: Apply mathematics to real-life situations; model real-life phenomena using mathematics.

- AA.FGR.3.1:** Find the inverse of exponential and logarithmic functions using equations, tables, and graphs, limiting the domain of inverses where necessary to maintain functionality, and prove by composition or verify by inspection that one function is the inverse of another.
- AA.FGR.3.2:** Analyze, graph, and compare exponential and logarithmic functions.
- AA.FGR.3.3:** Use the definition of a logarithm, logarithmic properties, and the inverse relationship between exponential and logarithmic functions to solve problems in context.
- AA.FGR.3.4:** Create exponential equations and use logarithms to solve contextual problems for which only one variable is unknown.
- AA.FGR.3.5:** Create and interpret logarithmic equations in one variable and use them to solve problems.
- AA.FGR.3.6:** Create, interpret, and solve exponential equations to represent relationships between quantities and analyze the relationships numerically with tables, algebraically, and graphically.
- AA.FGR.3.7:** Create, interpret, and solve logarithmic equations in two or more variables to represent relationships between quantities.

Unit 6: Exploring Trigonometry and the Unit Circle

20 Days

Unit Dates: 2/26/2027 - 3/26/2027

AA.GSR.7: Develop an introductory understanding of the unit circle; solve trigonometric equations using the unit circle.

AA.MM.1: Apply mathematics to real-life situations; model real-life phenomena using mathematics.

- AA.GSR.7.1:** Define the three basic trigonometric ratios in terms of x , y , and r using the unit circle centered at the origin of the coordinate plane.
- AA.GSR.7.2:** Apply understanding of the angle measures and coordinates of the unit circle to solve practical, real-life problems involving trigonometric equations.

Unit 7: Investigating Descriptive and Inferential Statistics

25 Days

Unit Dates: 3/29/2027 - 5/7/2027

AA.DSR.2: Communicate descriptive and inferential statistics by collecting, critiquing, analyzing, and interpreting real-world data.

AA.MM.1: Apply mathematics to real-life situations; model real-life phenomena using mathematics.

- AA.DSR.2.1:** Recognize the purposes and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each. Distinguish between primary and secondary data and how it affects the types of conclusions that can be drawn.
- AA.DSR.2.2:** When collecting and considering data, critically evaluate ethics, privacy, potential bias, and confounding variables along with their implications for interpretation in answering a statistical investigative question. Implement strategies for organizing and preparing big data sets.
- AA.DSR.2.3:** Distinguish between population distributions, sample data distributions, and sampling distributions. Use sample statistics to make inferences about population parameters based on a random sample from that population and to communicate conclusions using appropriate statistical language.
- AA.DSR.2.4:** Calculate and interpret z-scores as a measure of relative standing and as a method of standardizing units.
- AA.DSR.2.5:** Given a normally distributed population, estimate percentages using the Empirical Rule, z-scores, and technology.
- AA.DSR.2.6:** Model sample-to-sample variability in sampling distributions of a statistic using simulations taken from a given population.
- AA.DSR.2.7:** Given a margin of error, develop and compare confidence intervals of different models to make conclusions about reliability.
- AA.DSR.2.8:** Summarize and evaluate reports based on data for appropriateness of study design, analysis methods, and statistical measures used.

Unit 8: Culminating Capstone Unit

10 Days

Unit Dates: 5/10/2027 - 5/21/2027

ALL Standards Addressed in this Unit

The capstone unit applies content that has already been learned in previous interdisciplinary PBLs and units throughout the school year. The capstone unit is an interdisciplinary unit that allows students to create a presentation, report, or demonstration that could include their models used to answer an overarching driving question. (e.g., Students can present their solution(s), findings, project, or answer the driving question to a larger audience during the culminating capstone unit.)