



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

**2025 – 2026**

**GRADE 8 MATH**

# FCS GRADE 8 MATH CURRICULUM MAP

## Georgia's K-8 Mathematics Standards

Semester 1				Semester 2			
Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8
The Real Number System	Investigating Linear Expressions, Equations, and Inequalities in One Variable	Modeling Linear Relationships & Functions	Investigating Data & Statistical Reasoning	Real-Life Phenomena Explored Through Systems of Linear Equations	Exploring Integer Exponents and Scientific Notation	Exploring Geometric Relationships	Culminating Capstone Unit
<b>18 Days</b>	<b>25 Days</b>	<b>26 Days</b>	<b>15 Days</b>	<b>25 Days</b>	<b>25 Days</b>	<b>15 Days</b>	<b>20 Days</b>
<u>Unit Dates</u> 8/6/2025 - 8/29/2025	<u>Unit Dates</u> 9/2/2025 - 10/6/2025	<u>Unit Dates</u> 10/7/2025 - 11/19/2025	<u>Unit Dates</u> 11/21/2025 - 12/17/2025	<u>Unit Dates</u> 1/6/2026 - 2/10/2026	<u>Unit Dates</u> 2/11/2026 - 3/20/2026	<u>Unit Dates</u> 3/23/2026 - 4/17/2026	<u>Unit Dates</u> 4/20/2026 - 5/15/2026
Learning Expectations	Learning Expectations	Learning Expectations	Learning Expectations	Learning Expectations	Learning Expectations	Learning Expectations	Learning Expectations
8.NR.1.1 8.NR.1.2 8.NR.2.2	8.PAR.3.1 <b>8.PAR.3.2</b> 8.PAR.3.3 8.PAR.3.4 <b>8.PAR.3.5</b> 8.PAR.3.6	<b>8.PAR.4.1</b> 8.PAR.4.2 8.FGR.5.1 8.FGR.5.2 8.FGR.5.3 <b>8.FGR.5.4</b> 8.FGR.5.5 8.FGR.5.6 8.FGR.5.7 8.FGR.5.8 <b>8.FGR.5.9</b>	8.FGR.6.1 8.FGR.6.2 <b>8.FGR.6.3</b> <b>8.FGR.6.4</b>	8.FGR.7.1 8.FGR.7.2 8.FGR.7.3 <b>8.FGR.7.4</b> 8.FGR.7.5	<b>8.NR.2.1</b> 8.NR.2.2 8.NR.2.3 8.NR.2.4	8.GSR.8.1 <b>8.GSR.8.2</b> 8.GSR.8.3 8.GSR.8.4	<b>All Standards</b>  The days in this unit include days for GMAS review and testing.
8.MP.1-8	8.MP.1-8	8.MP.1-8	8.MP.1-8	8.MP.1-8	8.MP.1-8	8.MP.1-8	8.MP.1-8
The <a href="#">Framework for Statistical Reasoning</a> , <a href="#">Mathematical Modeling Framework</a> , and the <a href="#">K-12 Mathematical Practices</a> should be taught throughout the units.							

<b>Curriculum Map Key</b>
Prioritized Learning Expectations are in red.

# Rationale for Adjustments from 2023-2024 to 2024-2025

Unit/Standard/Learning Expectation Adjustments	Rationale
<p style="text-align: center;"><u>Unit Changes</u></p> <p>Learning Expectation 8.GSR.8.4 from 2024 - 2025 Unit 1 will be taught in its entirety in Unit 7 in 2025 – 2026.</p>	<ul style="list-style-type: none"><li>Teaching part of the standard, 8.GSR.8.4 - finding the volume of cylinders, cones, and spheres in Unit 1 and then having students recall the information in Unit 7 resulted in instructors having to reteach this portion of the standard again. Now students will have the opportunity to build on what they know from 7<sup>th</sup> grade when finding the volume of cylinders and right prisms. In 8<sup>th</sup> grade they are asked to apply the volume formula of cones, cylinders, and spheres to solve relevant problems. In Unit 7, students are using the Pythagorean Theorem to determine unknown side lengths and they can apply their understanding of slant height to make connections between the Pythagorean Theorem and finding the volume of cones.</li></ul>

## Unit 1: The Real Number System

18 Days

Unit Dates: 8/6/2025 - 8/29/2025

**8.NR.1: Solve problems involving irrational numbers and rational approximations of irrational numbers to explain real-life applications.**

**8.NR.2: Solve problems involving radicals and integer exponents including relevant application situations; apply place value understanding with scientific notation and use scientific notation to explain real phenomena.**

**8.NR.1.1:** Distinguish between rational and irrational numbers using decimal expansion. Convert a decimal expansion which repeats eventually into a rational number.

**8.NR.1.2:** Approximate irrational numbers to compare the size of irrational numbers, locate them approximately on a number line, and estimate the value of expressions.

**8.NR.2.2:** Use square root and cube root symbols to represent solutions to equations. Recognize that  $x^2 = p$  (where  $p$  is a positive rational number and  $|x| \leq 25$ ) has two solutions and  $x^3 = p$  (where  $p$  is a negative or positive rational number and  $|x| \leq 10$ ) has one solution. Evaluate square roots of perfect squares  $\leq 625$  and cube roots of perfect cubes  $\geq -1000$  and  $\leq 1000$ .

## Unit 2: Investigating Linear Expressions, Equations, and Inequalities in One Variable

25 Days

Unit Dates: 9/2/2025 - 10/6/2025

### 8.PAR.3: Create and interpret expressions within relevant situations. Create, interpret, and solve linear equations and linear inequalities in one variable to model and explain real phenomena.

- 8.PAR.3.1:** Interpret expressions and parts of expressions and parts of an expression, in context, by utilizing formulas or expressions with multiple terms and/or factors.
- 8.PAR.3.2:** Describe and solve linear equations in one variable with one solution ( $x = a$ ), infinitely many solutions ( $a = a$ ), or no solutions ( $a = b$ ). Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form  $x = a$ ,  $a = a$ , or  $a = b$  results (where  $a$  and  $b$  are different numbers).
- 8.PAR.3.3:** Create and solve linear equations and inequalities in one variable within a relevant, application.
- 8.PAR.3.4:** Using algebraic properties and the properties of real numbers, justify the steps of a one-solution equation or inequality.
- 8.PAR.3.5:** Solve linear equations and inequalities in one variable with coefficients represented by letters and explain the solution based on the contextual, mathematical situation.
- 8.PAR.3.6:** Use algebraic reasoning to fluently manipulate linear and literal equations expression in various forms to solve relevant, mathematical problems.

## Unit 3: Modeling Linear Relationships & Functions

26 Days

Unit Dates: 10/7/2025 - 11/19/2025

**8.PAR.4:** Show and explain the connections between proportional and non-proportional relationships, lines, and linear equations; create and interpret graphical, mathematical models and use the graphical, mathematical model to explain real-life phenomena represented in the graph.

**8.FGR.5:** Describe the properties of functions to define, evaluate, and compare relationships, and use functions and graphs of functions to model and explain real-life phenomena.

**8.PAR.4.1:** Use the equation  $y = mx$  (proportional) for a line through the origin to derive the equation  $y = mx + b$  (non-proportional) for a line intersecting the vertical axis at  $b$ .

**8.PAR.4.2:** Show and explain that the graph of an equation representing an applicable situation in two variables is the set of all its solutions plotted in the coordinate plane.

**8.FGR.5.1:** Show and explain that a function is a rule that assigns to each input exactly one output.

**8.FGR.5.2:** Within realistic situations, identify and describe examples of functions that are linear or nonlinear. Sketch a graph that exhibits the qualitative features of a function that has been described verbally.

**8.FGR.5.3:** Relate the domain of a linear function to its graph and where applicable to the quantitative relationship it describes.

**8.FGR.5.4:** Compare properties (rate of change and initial value) of two functions used to model an authentic situation each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).

**8.FGR.5.5:** Write and explain the equations  $y = mx + b$  (slope-intercept form),  $Ax + By = C$  (standard form), and  $(y - y_1) = m(x - x_1)$  (point-slope form) as defining a linear function whose graph is a straight line to reveal and explain different properties of the functions.

**8.FGR.5.6:** Write a linear function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.

**8.FGR.5.7:** Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two  $(x, y)$  values, including reading these from a table or from a graph.

**8.FGR.5.8:** Explain the meaning of the rate of change and initial value of a linear function in terms of the situation it models and in terms of its graph or a table of values.

**8.FGR.5.9:** Graph and analyze linear functions expressed in various algebraic forms and show key characteristics of the graph to describe applicable situations.

## Unit 4: Investigating Data & Statistical Reasoning

15 Days

Unit Dates: 11/21/2025 - 12/17/2025

### 8.FGR.6: Solve practical, linear problems involving situations using bivariate quantitative data.

**8.FGR.6.1:** Show that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, visually fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line of best fit.

**8.FGR.6.2:** Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercepts.

**8.FGR.6.3:** Explain the meaning of the predicted slope (rate of change) and the predicted intercept (constant term) of a linear model in the context of the data.

**8.FGR.6.4:** Use appropriate graphical displays from data distributions involving lines of best fit to draw informal inferences and answer the statistical investigative question posed in an unbiased statistical study.

## Unit 5: Real-Life Phenomena Explored Through Systems of Linear Equations

25 Days

Unit Dates: 1/6/2026 - 2/10/2026

### 8.FGR.7: Justify and use various strategies to solve systems of linear equations to model and explain real-life phenomena.

**8.FGR.7.1:** Interpret and solve relevant mathematical problems leading to two linear equations in two variables.

**8.FGR.7.2:** Show and explain that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because the points of intersection satisfy both equations simultaneously.

**8.FGR.7.3:** Approximate solutions of two linear equations in two variables by graphing the equations and solving simple cases by inspection.

**8.FGR.7.4:** Analyze and solve systems of two linear equations in two variables algebraically to find exact solutions.

**8.FGR.7.5:** Create and compare the equations of two lines that are either parallel to each other, perpendicular to each other, or neither parallel nor perpendicular.

## Unit 6: Exploring Integer Exponents and Scientific Notation

25 Days

Unit Dates: 2/11/2026 - 3/20/2026

### 8.NR.2: Solve problems involving radicals and integer exponents including relevant application situations; apply place value understanding with scientific notation and use scientific notation to explain real-life phenomena.

**8.NR.2.1:** Apply the properties of integer exponents to generate equivalent numerical expressions.

**8.NR.2.2:** Use square root and cube root symbols to represent solutions to equations. Recognize that  $x^2 = p$  (where  $p$  is a positive rational number and  $|x| \leq 25$ ) has two solutions and  $x^3 = p$  (where  $p$  is a negative or positive rational number and  $|x| \leq 10$ ) has one solution. Evaluate square roots of perfect squares  $\leq 625$  and cube roots of perfect cubes  $\geq -1000$  and  $\leq 1000$ .

**8.NR.2.3:** Use numbers expressed in scientific notation to estimate very large or very small quantities, and to express how many times as much one is than the other.

**8.NR.2.4:** Add, subtract, multiply and divide numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Interpret scientific notation that has been generated by technology (e.g., calculators or online technology tools).

## Unit 7: Exploring Geometric Relationships

15 Days

Unit Dates: 3/23/2026 - 4/17/2026

**8.GSR.8: Solve geometric problems involving the Pythagorean theorem and the volume of geometric figures to explain real-life phenomena.**

**8.GSR.8.1** Explain a proof of the Pythagorean Theorem and its converse using visual models.

**8.GSR.8.2:** Apply the Pythagorean Theorem to determine unknown side lengths in right triangles within authentic mathematical problems in two and three dimensions.

**8.GSR.8.3** Apply the Pythagorean Theorem to find the distance between two points in a coordinate system in practical mathematical problems.

**8.GSR.8.4:** Apply the formulas for the volume of cones, cylinders, and spheres and use them to solve relevant problems.

## Unit 8: Culminating Capstone Unit

20 Days

Unit Dates: 4/20/2025 - 5/15/2025

### 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 to the driving question to a larger audience during the culminating capstone unit.)