Georgia's K-12 Mathematics Standards 2021

Algebra: Concepts and Connections

Unit 1: Modeling with Linear Functions

Topic	Lesson	Title	Standard(s)
Topic A	**Units and Modeling**		
	1.1	Converting Units	A.MM.1.3
	1.2	Modeling with Units and Precision in Modeling	A.MM.1.3 A.MM.1.5
	1.3	Linear Modeling	A.MM.1.1 A.MM.1.2 A.MM.1.4
Topic B	**Sequences**		
	1.4	Sequences As Functions	A.FGR.2.1
	1.5	Arithmetic Sequences	A.FGR.2.1
Topic C	**Introducing Functions**		
	1.6	Graphing the Set of All Solutions	A.FGR.2.2
	1.7	Domain and Range	A.FGR.2.3
	1.8	Function Notation and Evaluating Functions	A.FGR.2.4
Topic D	**Graphs of Linear Functions**		
	1.9	Creating and Graphing Linear Equations in Two Variables	A.FGR.2.2
	1.10	Identifying Key Features of Linear Graphs	A.FGR.2.2 A.FGR.2.3
	1.11	Graphing Linear Functions	A.FGR.2.2 A.FGR.2.3
	1.12	Building Functions From Context	A.FGR.2.2 A.FGR.2.3
Topic E	**Determining Linearity of Functions**		
	1.13	Determining Linearity of Functions	A.FRG.2.5

Unit 2: Lines in the Coordinate Plane

Topic	Lesson	Title	Standard(s)
Topic A	**Slope and Distance**		
	2.1	Using Coordinates to Prove Geometric Theorems with Slope and Distance	A.GSR.3.1
	2.2	Working with Parallel and Perpendicular Lines	A.GSR.3.1
Topic B	**Lines and Line Segments**		
	2.3	Calculating Perimeter and Area	A.GSR.3.1
	2.4	Midpoints and other points on Line Segments	A.GSR.3.2
Topic C	**Representing Constraints**		
	2.5	Representing Constraints	A.PAR.4.1 A.PAR.4.2
Topic D	**Linear Inequalities in Two Variables**		
	2.6	Solving Linear Inequalities in Two Variables	A.PAR.4.1 A.PAR.4.2
	2.7	Solving Systems of Linear Inequalities	A.PAR.4.3

Unit 3: Quadratic Equations

Topic	Lesson	Title	Standard(s)
Topic A	**Working with Radicals and Properties of Real Numbers**		
	3.1	Working with Radicals and Properties of Real Numbers	A.NR.5.1 A.NR.5.2
Topic B	**Working with Quadratic Expressions**		
	3.2	Interpreting Complicated Expressions	A.PAR.6.1
	3.3	Adding and Subtracting Polynomials	A.PAR.6.2
	3.4	Multiplying Polynomials	A.PAR.6.2
Topic C	**Solving Quadratic Equations**		
	3.5	Taking the Square Root of Both Sides	A.PAR.6.3
	3.6	Factoring Expressions by the Greatest Common Factor	A.PAR.6.2
	3.7	Factoring Expressions with $a = 1$	A.PAR.6.2
	3.8	Factoring Expressions with $a > 1$	A.PAR.6.2
	3.9	Solving Quadratic Equations by Factoring	A.PAR.6.3
	3.10	Completing the Square	A.PAR.6.3
	3.11	Applying the Quadratic Formula	A.PAR.6.3
Topic D	**Creating Quadratic Equations in Two or More Variables**		
	3.12	Creating and Graphing Equations Using Standard Form	A.PAR.6.3 A.PAR.6.4
	3.13	Creating and Graphing Equations Using the x-intercepts	A.PAR.6.3 A.PAR.6.4
	3.14	Creating and Graphing Equations Using Vertex Form	A.PAR.6.3 A.PAR.6.4

Unit 4: Quadratic Functions

Topic	Lesson	Title	Standard(s)
Topic A	**Introducing Quadratic Functions**		
	4.1	Introducing Quadratic Functions	A.FGR.7.1
Topic B	**Transforming Functions**		
	4.2	Replacing $f(x)$ with $f(x) + k$ and $f(x + k)$	A.FGR.7.2
	4.3	Replacing $f(x)$ with $k \cdot f(x)$ and $f(k \cdot x)$	A.FGR.7.2
Topic C	**Interpreting Quadratic Functions**		
	4.4	Interpreting Key Features of Quadratic Functions	A.FGR.7.3
	4.5	Identifying the Domain and Range of a Quadratic Function	A.FGR.7.4
	4.6	Finding the Vertex of a Quadratic Function	A.FGR.7.5
Topic D	**Modeling with Quadratic Functions**		
	4.7	Building Quadratic Functions from Context	A.FGR.7.6
	4.8	Identifying the Average Rate of Change	A.FGR.7.7
	4.9	Writing Equivalent Forms of Quadratic Functions	A.FGR.7.8
	4.10	Comparing Properties of Quadratic Functions Given in Different Forms	A.FGR.7.9

Unit 5: Exponential Equations

Topic	Lesson	Title	Standard(s)
Topic A	**Interpreting Exponential Parameters**		
	5.1	Interpreting Exponential Parameters	A.PAR.8.1
Topic B	**Creating Exponential Equations**		
	5.2	Creating Exponential Equations in One Variable	A.PAR.8.2
	5.3	Creating and Graphing Exponential Equations in Two Variables	A.PAR.8.3
Topic C	**Solving Exponential Equations**		
	5.4	Solving Exponential Equations	A.PAR.8.4

Unit 6: Exponential Functions

Topic	Lesson	Title	Standard(s)
Topic A	**Domain and Range of Exponential Functions**		
	6.1	Domain and Range of Exponential Functions	A.FGR.9.1 A.FGR.9.2
Topic B	**Building Exponential Functions From Context**		
	6.2	Building Exponential Functions From Context	A.FGR.9.1
Topic C	**Graphs of Exponential Functions**		
	6.3	Graphing Exponential Functions	A.FGR.9.2
	6.4	Identifying Key Features of Exponential Graphs	A.FGR.9.2
Topic D	**Transformations of Exponential Functions**		
	6.5	Translating Exponential Functions	A.FGR.9.3
	6.6	Compressing, Stretching, and Reflecting Exponential Functions	A.FGR.9.3
Topic E	**Geometric Sequences**		
	6.7	Geometric Sequences	A.FGR.9.4
Topic F	**Comparing Models**		
	6.8	Comparing Models	A.FGR.9.5

Unit 7: Describing Data

Topic	Lesson	Title	Standard(s)
Topic A	**Summarizing, Representing, and Interpreting Data on a Single Measurement Variable**		
	7.1	Representing Data Visually	A.DSR.10.1
	7.2	Comparing Different Data Sets	A.DSR.10.1
	7.3	Interpreting Data and Recognizing Outliers	A.DSR.10.2
Topic B	**Working with Two Variables**		
	7.4	Analyzing Functions Fitted to Data	A.DSR.10.3
	7.5	Fitting Linear Functions to Data	A.DSR.10.3
Topic C	**Interpreting Linear Models**		
	7.6	Interpreting Slope and y-intercept	A.DSR.10.4
	7.7	Calculating and Interpreting the Correlation Coefficient	A.DSR.10.5
Topic D	**Analyzing Statistical Models**		
	7.8	Choosing a Model	A.DSR.10.6
	7.9	Distinguishing Between Correlation and Causation	A.DSR.10.7