Standards Correlations

Each lesson in this *Georgia Standards of Excellence Algebra I* program was written specifically to address the GSE and its Algebra I Curriculum Map and Comprehensive Course Overview. Each lesson lists the standards covered in all the sub-lessons, and each sub-lesson lists the standards addressed in that particular section. In this section, you'll find a comprehensive list mapping the sub-lessons to the GSE.

Guide to Georgia Standards of Excellence Annotation

As you use this program, you will come across symbols included with the Common Core standards for some of the lessons and activities. These symbols are explained below.

Symbol: ⋆

Denotes: Modeling Standards

Modeling is best interpreted not as a collection of isolated topics but rather in relation to other standards. Making mathematical models is a Standard for Mathematical Practice, and specific modeling standards appear throughout the high school standards indicated by a star symbol (⋆).

From http://www.walch.com/CCSS/00003

Symbol: (+)

Denotes: College and Career Readiness Standards

Advanced mathematics standards that are required in higher-level courses such as advanced statistics may also be included in lower-level courses. These additional standards are denoted by (+). According to the Common Core State Standards Initiative, "the evidence concerning college and career readiness shows clearly that the knowledge, skills, and practices important for readiness include a great deal of mathematics prior to the boundary defined by (+) symbols in these standards. Indeed, some of the highest priority content for college and career readiness comes from Grades 6–8."

From http://www.walch.com/CCSS/00004

GSE ALGEBRA I STANDARDS CORRELATIONS

Unit 1: Relationships Between Quantities and Expressions			
Lesson	**Sub-lesson number**	**Title**	**Standard(s)**
Lesson 1	**Working with Radicals and Properties of Real Numbers**		
	1.1.1	Working with Radicals and Properties of Real Numbers	MGSE9–12.N.RN.2 MGSE9–12.N.RN.3
Lesson 2	**Units of Measure**		
	1.2.1	Converting Units	MGSE9–12.N.Q.1★ MGSE9–12.N.Q.2★
	1.2.2	Modeling with Units and Precision in Modeling	MGSE9–12.N.Q.2★ MGSE9–12.N.Q.3★
Lesson 3	**Interpreting Formulas and Expressions**		
	1.3.1	Identifying Terms, Factors, and Coefficients	MGSE9–12.A.SSE.1★ MGSE9–12.A.SSE.1a★
	1.3.2	Adding and Subtracting Polynomials	MGSE9–12.A.APR.1
	1.3.3	Multiplying Polynomials	MGSE9–12.A.APR.1
	1.3.4	Interpreting Complicated Expressions	MGSE9–12.A.SSE.1★ MGSE9–12.A.SSE.1b★

GSE ALGEBRA I STANDARDS CORRELATIONS

Unit 2: Reasoning with Linear Equations and Inequalities			
Lesson	**Sub-lesson number**	**Title**	**Standard(s)**
Lesson 1	**Creating Linear Equations and Inequalities in One Variable**		
	2.1.1	Creating Linear Equations in One Variable	MGSE9–12.A.CED.1★
	2.1.2	Creating Linear Inequalities in One Variable	MGSE9–12.A.CED.1★
Lesson 2	**Creating and Graphing Linear Equations in Two Variables**		
	2.2.1	Creating and Graphing Linear Equations in Two Variables	MGSE9–12.A.CED.2★
Lesson 3	**Representing Constraints**		
	2.3.1	Representing Constraints	MGSE9–12.A.CED.3★
Lesson 4	**Solving Equations and Inequalities**		
	2.4.1	Properties of Equality	MGSE9–12.A.REI.1
	2.4.2	Solving Linear Equations	MGSE9–12.A.REI.3
	2.4.3	Solving Linear Inequalities	MGSE9–12.A.REI.3
Lesson 5	**Rearranging Formulas**		
	2.5.1	Rearranging Formulas	MGSE9–12.A.CED.4★
Lesson 6	**Functions and Graphing**		
	2.6.1	Graphing the Set of All Solutions	MGSE9–12.A.REI.10
	2.6.2	Domain and Range	MGSE9–12.F.IF.1
	2.6.3	Function Notation and Evaluating Functions	MGSE9–12.F.IF.2
Lesson 7	**Systems of Linear Equations**		
	2.7.1	Intersecting Graphs	MGSE9–12.A.REI.11★
	2.7.2	Solving Systems of Linear Equations by Substitution and Elimination	MGSE9–12.A.REI.5 MGSE9–12.A.REI.6
	2.7.3	Solving Systems of Linear Equations by Graphing	MGSE9–12.A.REI.6

Lesson 8	**Solving Linear Inequalities in Two Variables and Systems of Inequalities**		
	2.8.1	Solving Linear Inequalities in Two Variables	MGSE9–12.A.REI.12
	2.8.2	Solving Systems of Linear Inequalities	MGSE9–12.A.REI.12
Lesson 9	**Sequences as Functions**		
	2.9.1	Sequences As Functions	MGSE9–12.F.IF.3
	2.9.2	Arithmetic Sequences	MGSE9–12.F.BF.2★
Lesson 10	**Interpreting Linear Functions**		
	2.10.1	Identifying Key Features of Linear Graphs	MGSE9–12.F.IF.4★ MGSE9–12.F.IF.5★
	2.10.2	Finding Average Rate of Change	MGSE9–12.F.IF.6★
Lesson 11	**Analyzing and Comparing Linear Functions**		
	2.11.1	Graphing Linear Functions	MGSE9–12.F.IF.7★ MGSE9–12.F.IF.7a★
	2.11.2	Comparing Linear Functions	MGSE9–12.F.IF.9
Lesson 12	**Building Linear Functions**		
	2.12.1	Building Functions From Context	MGSE9–12.F.BF.1★ MGSE9–12.F.BF.1a★

GSE ALGEBRA I STANDARDS CORRELATIONS

Unit 3: Modeling and Analyzing Quadratic Functions			
Lesson	**Sub-lesson number**	**Title**	**Standard(s)**
Lesson 1	**Creating and Solving Quadratic Equations in One Variable**		
	3.1.1	Taking the Square Root of Both Sides	MGSE9–12.A.CED.1★ MGSE9–12.A.REI.4 MGSE9–12.A.REI.4b
	3.1.2	Factoring Expressions by the Greatest Common Factor	MGSE9–12.A.SSE.2
	3.1.3	Factoring Expressions with $a = 1$	MGSE9–12.A.SSE.2
	3.1.4	Factoring Expressions with $a > 1$	MGSE9–12.A.SSE.2
	3.1.5	Solving Quadratic Equations by Factoring	MGSE9–12.A.SSE.2 MGSE9–12.A.CED.1★ MGSE9–12.A.REI.4b
	3.1.6	Completing the Square	MGSE9–12.A.SSE.2 MGSE9–12.A.CED.1★ MGSE9–12.A.REI.4 MGSE9–12.A.REI.4a MGSE9–12.A.REI.4b
	3.1.7	Applying the Quadratic Formula	MGSE9–12.A.CED.1★ MGSE9–12.A.REI.4 MGSE9–12.A.REI.4a MGSE9–12.A.REI.4b
	3.1.8	Solving Quadratic Inequalities	MGSE9–12.A.SSE.2 MGSE9–12.A.CED.1★ MGSE9–12.A.REI.4 MGSE9–12.A.REI.4b

Lesson	Sub-lesson number	Title	Standard(s)
Lesson 2	**Creating Quadratic Equations in Two or More Variables**		
	3.2.1	Creating and Graphing Equations Using Standard Form	MGSE9–12.A.CED.2★ MGSE9–12.A.SSE.3★ MGSE9–12.A.SSE.3a★ MGSE9–12.F.IF.7★ MGSE9–12.F.IF.7a★
	3.2.2	Creating and Graphing Equations Using the *x*-intercepts	MGSE9–12.A.CED.2★ MGSE9–12.A.SSE.3★ MGSE9–12.A.SSE.3a★ MGSE9–12.F.IF.7★ MGSE9–12.F.IF.7a★
	3.2.3	Creating and Graphing Equations Using Vertex Form	MGSE9–12.A.CED.2★ MGSE9–12.A.SSE.3★ MGSE9–12.A.SSE.3b★ MGSE9–12.F.IF.7★ MGSE9–12.F.IF.7a★
	3.2.4	Rearranging Formulas Revisited	MGSE9–12.A.CED.4★
Lesson 3	**Interpreting and Analyzing Quadratic Functions**		
	3.3.1	Interpreting Key Features of Quadratic Functions	MGSE9–12.F.IF.4★ MGSE9–12.F.IF.7★ MGSE9–12.F.IF.7a★
	3.3.2	Identifying the Domain and Range of a Quadratic Function	MGSE9–12.F.IF.5★ MGSE9–12.F.IF.1 MGSE9–12.F.IF.2
	3.3.3	Identifying the Average Rate of Change	MGSE9–12.F.IF.6★
	3.3.4	Writing Equivalent Forms of Quadratic Functions	MGSE9–12.F.IF.8 MGSE9–12.F.IF.8a

Lesson	Sub-lesson number	Title	Standard(s)
Lesson 4	**Transforming Functions**		
	3.4.1	Replacing $f(x)$ with $f(x) + k$ and $f(x + k)$	MGSE9–12.F.BF.3 MGSE9–12.F.IF.1 MGSE9–12.F.IF.2
	3.4.2	Replacing $f(x)$ with $k \bullet f(x)$ and $f(k \bullet x)$	MGSE9–12.F.BF.3 MGSE9–12.F.IF.1 MGSE9–12.F.IF.2
Lesson 5	**Building and Comparing Quadratic Functions**		
	3.5.1	Building Quadratic Functions from Context	MGSE9–12.F.BF.1★
	3.5.2	Comparing Properties of Quadratic Functions Given in Different Forms	MGSE9–12.F.IF.9

GSE ALGEBRA I STANDARDS CORRELATIONS

Unit 4: Modeling and Analyzing Exponential Functions			
Lesson	**Sub-lesson number**	**Title**	**Standard(s)**
Lesson 1	**Creating Exponential Equations**		
	4.1.1	Creating Exponential Equations in One Variable	MGSE9–12.A.CED.1★
	4.1.2	Creating and Graphing Exponential Equations in Two Variables	MGSE9–12.A.CED.2★
Lesson 2	**Domain and Range of Exponential Functions**		
	4.2.1	Domain and Range of Exponential Functions	MGSE9–12.F.IF.1 MGSE9–12.F.IF.2
Lesson 3	**Geometric Sequences**		
	4.3.1	Geometric Sequences	MGSE9–12.F.BF.2★ MGSE9–12.F.IF.3
Lesson 4	**Interpreting Exponential Graphs**		
	4.4.1	Identifying Key Features of Exponential Graphs	MGSE9–12.F.IF.4★ MGSE9–12.F.IF.5★
	4.4.2	Calculating Average Rate of Change	MGSE9–12.F.IF.6★
Lesson 5	**Graphing Exponential Functions**		
	4.5.1	Graphing Exponential Functions	MGSE9–12.F.IF.7★ MGSE9–12.F.IF.7e★
Lesson 6	**Comparing Exponential Functions**		
	4.6.1	Comparing Exponential Functions	MGSE9–12.F.IF.9
Lesson 7	**Building Functions From Context**		
	4.7.1	Building Functions From Context	MGSE9–12.F.BF.1a★
Lesson 8	**Transformations of Exponential Functions**		
	4.8.1	Translating Exponential Functions	MGSE9–12.F.BF.3
	4.8.2	Compressing, Stretching, and Reflecting Exponential Functions	MGSE9–12.F.BF.3

GSE ALGEBRA I STANDARDS CORRELATIONS

Unit 5: Comparing and Contrasting Functions			
Lesson	**Sub-lesson number**	**Title**	**Standard(s)**
Lesson 1	**Key Features of Functions**		
	5.1.1	Comparing Key Features of Different Functions	MGSE9–12.F.IF.1 MGSE9–12.F.IF.4★
	5.1.2	Graphing Different Functions Using Key Features	MGSE9–12.F.IF.4★ MGSE9–12.F.IF.7★
Lesson 2	**Average Rate of Change**		
	5.2.1	Patterns of Change for Different Functions	MGSE9–12.F.LE.1★ MGSE9–12.F.LE.1a★ MGSE9–12.F.LE.1b★ MGSE9–12.F.LE.1c★ MGSE9–12.F.IF.2
	5.2.2	Average Rate of Change on a Graph	MGSE9–12.F.IF.6★ MGSE9–12.F.IF.7★
	5.2.3	Comparing Functions Using Average Rate of Change	MGSE9–12.F.LE.3★ MGSE9–12.F.IF.2
Lesson 3	**Function Transformations**		
	5.3.1	Translation	MGSE9–12.F.BF.3 MGSE9–12.F.IF.2
	5.3.2	Dilation and Reflection	MGSE9–12.F.BF.3 MGSE9–12.F.IF.2
	5.3.3	Even and Odd Functions	MGSE9–12.F.BF.3 MGSE9–12.F.IF.2

Lesson	Sub-lesson number	Title	Standard(s)
Lesson 4	**Modeling with Functions**		
	5.4.1	Choosing a Model	MGSE9–12.F.LE.1★ MGSE9–12.F.LE.2★ MGSE9–12.F.LE.5★
	5.4.2	Using a Model in Context	MGSE9–12.F.LE.5★ MGSE9–12.F.IF.5★
	5.4.3	Comparing Models	MGSE9–12.F.IF.9

GSE ALGEBRA I STANDARDS CORRELATIONS

Unit 6: Describing Data			
Lesson	**Sub-lesson number**	**Title**	**Standard(s)**
Lesson 1	**Summarizing, Representing, and Interpreting Data on a Single Measurement Variable**		
	6.1.1	Representing Data Visually	MGSE9–12.S.ID.1★
	6.1.2	Comparing Different Data Sets	MGSE9–12.S.ID.2★
	6.1.3	Interpreting Data and Recognizing Outliers	MGSE9–12.S.ID.3★
Lesson 2	**Working with Two Variables**		
	6.2.1	Summarizing Data Using Two-Way Frequency Tables	MGSE9–12.S.ID.5★
	6.2.2	Analyzing Functions Fitted to Data	MGSE9–12.S.ID.6★ MGSE9–12.S.ID.6a★
	6.2.3	Fitting Linear Functions to Data	MGSE9–12.S.ID.6★ MGSE9–12.S.ID.6c★
Lesson 3	**Interpreting Linear Models**		
	6.3.1	Interpreting Slope and *y*-intercept	MGSE9–12.S.ID.7★
	6.3.2	Calculating and Interpreting the Correlation Coefficient	MGSE9–12.S.ID.8★
	6.3.3	Distinguishing Between Correlation and Causation	MGSE9–12.S.ID.9★