Standards Correlations

Each lesson in this *Georgia Standards of Excellence Algebra II Program* was developed specifically to address the GSE and its Algebra II 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 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

Unit 1: Quadratics Revisited			
Lesson	**Sub-lesson number**	**Title**	**Standard(s)**
Lesson 1	**Working with the Number System**		
	1.1.1	Defining, Rewriting, and Evaluating Rational Exponents	MGSE9–12.N.RN.1
	1.1.2	Rational and Irrational Numbers and Their Properties	MGSE9–12.N.RN.2
Lesson 2	**Operating with Complex Numbers**		
	1.2.1	Defining Complex Numbers, i, and i^2	MGSE9–12.N.CN.1
	1.2.2	Adding and Subtracting Complex Numbers	MGSE9–12.N.CN.2
	1.2.3	Multiplying Complex Numbers	MGSE9–12.N.CN.2 MGSE9–12.N.CN.3
Lesson 3	**Fundamental Theorem of Algebra**		
	1.3.1	Extending Polynomial Identities to Include Complex Numbers	MGSE9–12.N.CN.8
	1.3.2	Solving Quadratic Equations with Complex Solutions	MGSE9–12.N.CN.7 MGSE9–12.A.REI.4 MGSE9–12.A.REI.4b

Unit 2: Operations with Polynomials			
Lesson	**Sub-lesson number**	**Title**	**Standard(s)**
Lesson 1	**Polynomial Structures and Operating with Polynomials**		
	2.1.1	Structures of Expressions	MGSE9–12.A.APR.1
	2.1.2	Adding and Subtracting Polynomials	MGSE9–12.A.APR.1
	2.1.3	Multiplying Polynomials	MGSE9–12.A.APR.1
	2.1.4	The Binomial Theorem	MGSE9–12.A.APR.5
Lesson 2	**Functions and Modeling**		
	2.2.1	Building Functions from Context	MGSE9–12.F.BF.1★
	2.2.2	Operating on Functions	MGSE9–12.F.BF.1b★
	2.2.3	Composition of Functions	MGSE9–12.F.BF.1c★
Lesson 3	**Inverse Functions**		
	2.3.1	Finding Inverse Functions	MGSE9–12.F.BF.4a MGSE9–12.F.BF.4b MGSE9–12.F.BF.4c
	2.3.2	Determining Inverses of Quadratic Functions	MGSE9–12.F.BF.4
	2.3.3	Determining Inverses of Other Functions	MGSE9–12.F.BF.4

Unit 3: Polynomial Functions			
Lesson	**Sub-lesson number**	**Title**	**Standard(s)**
Lesson 1	**Polynomial Identities**		
	3.1.1	Introduction to Polynomial Identities	MGSE9–12.A.SSE.1a★ MGSE9–12.A.SSE.1b★ MGSE9–12.A.SSE.2 MGSE9–12.A.APR.4
	3.1.2	Complex Polynomial Identities	MGSE9–12.N.CN.8 MGSE9–12.A.SSE.1b★ MGSE9–12.A.SSE.2 MGSE9–12.A.APR.4
Lesson 2	**Graphing Polynomial Functions**		
	3.2.1	Describing End Behavior and Turns	MGSE9–12.F.IF.7★
	3.2.2	The Remainder Theorem	MGSE9–12.A.APR.2
	3.2.3	Finding Zeroes	MGSE9–12.A.APR.3 MGSE9–12.N.CN.9 MGSE9–12.F.IF.7★
	3.2.4	The Rational Root Theorem	MGSE9–12.A.APR.3

Unit 4: Rational and Radical Relationships			
Lesson	**Sub-lesson number**	**Title**	**Standard(s)**
Lesson 1	**Operating with Rational Expressions**		
	4.1.1	Structures of Rational Expressions	MGSE9–12.A.APR.7 MGSE9–12.A.SSE.1a★ MGSE9–12.A.SSE.1b★ MGSE9–12.A.SSE.2
	4.1.2	Adding and Subtracting Rational Expressions	MGSE9–12.A.APR.7
	4.1.3	Multiplying Rational Expressions	MGSE9–12.A.APR.7
	4.1.4	Dividing Rational Expressions	MGSE9–12.A.APR.7
Lesson 2	**Creating and Graphing Rational Equations and Inequalities**		
	4.2.1	Creating Rational Equations	MGSE9–12.A.CED.1★
	4.2.2	Graphing Rational Equations	MGSE9–12.A.CED.2★
	4.2.3	Creating Rational Inequalities	MGSE9–12.A.CED.1★
Lesson 3	**Solving Rational and Radical Equations**		
	4.3.1	Solving Rational Equations	MGSE9–12.A.REI.2 MGSE9–12.A.CED.1★ MGSE9–12.A.CED.2★
	4.3.2	Solving Radical Equations	MGSE9–12.A.REI.2
	4.3.3	Solving Systems of Equations	MGSE9–12.A.REI.11★ MGSE9–12.F.IF.4★ MGSE9–12.F.IF.5★ MGSE9–12.F.IF.7★ MGSE9–12.F.IF.7b★ MGSE9–12.F.IF.7d★

Unit 5: Exponential and Logarithmic Functions			
Lesson	**Sub-lesson number**	**Title**	**Standard(s)**
Lesson 1	**Analyzing Functions**		
	5.1.1	Analyzing Exponential Functions	MGSE9–12.A.SSE.3c★ MGSE9–12.F.IF.7e★ MGSE9–12.F.IF.8b
	5.1.2	Comparing Properties of Functions Given in Different Forms	MGSE9–12.F.IF.7★ MGSE9–12.F.IF.7e★ MGSE9–12.F.IF.8 MGSE9–12.F.IF.8b
Lesson 2	**Modeling Logarithmic Functions**		
	5.2.1	Logarithmic Functions as Inverses	MGSE9–12.F.BF.5 MGSE9–12.F.LE.4★
	5.2.2	Common Logarithms	MGSE9–12.F.IF.8 MGSE9–12.F.LE.4★
	5.2.3	Natural Logarithms	MGSE9–12.F.IF.8 MGSE9–12.F.LE.4★
	5.2.4	Graphing Logarithmic Functions	MGSE9–12.F.IF.7★
	5.2.5	Interpreting Logarithmic Models	MGSE9–12.F.IF.4★ MGSE9–12.F.IF.5★

Unit 6: Mathematical Modeling			
Lesson	**Sub-lesson number**	**Title**	**Standard(s)**
Lesson 1	**Creating Equations**		
	6.1.1	Creating Equations in One Variable	MGSE9–12.A.CED.1★
	6.1.2	Representing and Interpreting Constraints	MGSE9–12.A.CED.3★
	6.1.3	Rearranging Formulas	MGSE9–12.A.CED.4★
Lesson 2	**Transforming a Model and Function Symmetry**		
	6.2.1	Transformations of Parent Graphs	MGSE9–12.F.BF.3
	6.2.2	Recognizing Odd and Even Functions	MGSE9–12.F.BF.3
Lesson 3	**Comparing Properties Within and Between Functions**		
	6.3.1	Reading and Identifying Key Features of Real-World Situation Graphs	MGSE9–12.F.IF.4★ MGSE9–12.F.IF.5★ MGSE9–12.F.IF.6★
	6.3.2	Calculating Average Rates of Change	MGSE9–12.F.IF.6★
	6.3.3	Comparing Functions	MGSE9–12.F.IF.6★ MGSE9–12.F.IF.9
Lesson 4	**Choosing a Model**		
	6.4.1	Linear, Exponential, and Quadratic Functions	MGSE9–12.A.CED.2★ MGSE9–12.F.IF.4★ MGSE9–12.F.IF.5★ MGSE9–12.F.BF.3
	6.4.2	Piecewise, Step, and Absolute Value Functions	MGSE9–12.F.IF.4★ MGSE9–12.F.IF.5★ MGSE9–12.F.IF.7b★ MGSE9–12.F.BF.3
	6.4.3	Square Root and Cube Root Functions	MGSE9–12.F.IF.4★ MGSE9–12.F.IF.5★ MGSE9–12.F.IF.7b★ MGSE9–12.F.BF.3
Lesson 5	**Solving Systems of Equations**		
	6.5.1	Solving Systems of Equations Graphically	MGSE9–12.A.REI.11★
Lesson 6	**Geometric Series**		
	6.6.1	Geometric Sequences	MGSE9–12.A.SSE.4★
	6.6.2	Sum of a Finite Geometric Series	MGSE9–12.A.SSE.4★

Unit 7: Inferences and Conclusions from Data			
Lesson	**Sub-lesson number**	**Title**	**Standard(s)**
Lesson 1	**Working with a Single Measurement Variable**		
	7.1.1	Representing Data Sets	MGSE9–12.S.ID.1★
	7.1.2	Comparing Data Sets	MGSE9–12.S.ID.2★
	7.1.3	Interpreting Data Sets	MGSE9–12.S.ID.3★
Lesson 2	**Using the Normal Curve**		
	7.2.1	Normal Distributions and the 68–95–99.7 Rule	MGSE9–12.S.ID.4★
	7.2.2	Standard Normal Calculations	MGSE9–12.S.ID.4★
	7.2.3	Assessing Normality	MGSE9–12.S.ID.4★
Lesson 3	**Populations Versus Random Samples and Random Sampling**		
	7.3.1	Differences Between Populations and Samples	MGSE9–12.S.IC.1★
	7.3.2	Simple Random Sampling	MGSE9–12.S.IC.2★
	7.3.3	Other Methods of Random Sampling	MGSE9–12.S.IC.2★
Lesson 4	**Surveys, Experiments, and Observational Studies**		
	7.4.1	Identifying Surveys, Experiments, and Observational Studies	MGSE9–12.S.IC.3★
	7.4.2	Designing Surveys, Experiments, and Observational Studies	MGSE9–12.S.IC.3★
Lesson 5	**Estimating Sample Proportions and Sample Means**		
	7.5.1	Estimating Sample Proportions	MGSE9–12.S.IC.4★
	7.5.2	The Binomial Distribution	MGSE9–12.S.IC.4★
	7.5.3	Estimating Sample Means	MGSE9–12.S.IC.4★
	7.5.4	Estimating with Confidence	MGSE9–12.S.IC.4★
Lesson 6	**Comparing Treatments and Reading Reports**		
	7.6.1	Evaluating Treatments	MGSE9–12.S.IC.5★
	7.6.2	Designing and Simulating Treatments	MGSE9–12.S.IC.5★
	7.6.3	Reading Reports	MGSE9–12.S.IC.6★