

# Year Long Algebra 1

## First Semester Pacing Guide

GW	General Time Frame To Cover Material	PS	Textbook Section	Objectives	Standards
	<b>Three Weeks</b>		<b>Chapter 1 Tools of Algebra</b>		
*		*	1.1 Using Variables	Modeling relationships with variables. Modeling relationships with equations and formulas.	3102.1.2 3102.1.3
*		*	1.2 Exponents and Order of Operations	Simplifying and evaluating expressions and formulas. Simplifying and evaluating expressions with grouping symbols.	3102.1.1 3102.1.2 3102.1.3 3102.2.2 3102.3.5 3102.4.1
*		*	1.3 Exploring Real Numbers	Classifying numbers Comparing numbers	3102.2.1 3102.2.2
*		*	1.4 Adding Real Numbers	Adding real numbers Applying addition	3102.1.3 3102.1.4 3102.2.1 3102.2.2 3102.3.1
*		*	1.5 Subtracting Real Numbers	Subtracting real numbers Applying subtraction	3102.2.1 3102.2.2 3102.3.1
*		*	1.6 Multiplying and Dividing Real Numbers	Multiplying real numbers. Dividing real numbers.	3102.1.3 3102.1.4 3102.2.1 3102.2.2 3102.3.1
*		*	1.7 The Distributive Property	Using the distributive property. Simplifying algebraic expressions	3102.1.3 3102.2.2
*		*	1.8 Properties of Real Numbers	Identifying and using properties. Using deductive reasoning	3102.1.3 3102.2.1 3102.2.2
				<b>(Optional)</b> 1.9 Graphing Data on the Coordinate Plane	Graphing points on the coordinate plane. Analyzing data using scatter plots

GW	Time Frame	PS	Textbook Section	Objectives	Standards
	<b>4 Weeks</b>		<b>Chapter 2 Solving Equations</b>		
*		*	2.1 Solving One-Step Equations	Solving equations using addition and subtraction. Solving equations using multiplication and division.	3102.1.2 3102.1.3 3102.2.1 3102.2.2 3102.3.1 3102.3.3 3102.3.5 3102.4.1
*		*	2.2 Solving Two-Step Equations	Solving two-step equations. Using deductive reasoning	3102.1.2 3102.1.3 3102.2.1
<b>Six Weeks Benchmark</b>					
*		*	2.3 Solving Multi-Step Equations	Using the distributive property to combine like terms. Using the distributive property to solve equations	3102.1.2 3102.1.3 3102.2.1
*		*	2.4 Equations with Variable on Both Sides	Solving equations with variables on both sides. Special cases: identities and no solutions	3102.1.2 3102.1.3 3102.2.1 3102.3.5 3102.4.1
*		*	2.5 Equations and Problem Solving	Defining variables. Distance, rate, and time problems	3102.1.2 3102.1.3 3102.1.6 3102.2.1 3102.3.1 3102.3.5 3102.4.1 3102.4.4
*		*	2.6 Formulas	Transforming literal equations	3102.1.3 3102.3.5 3102.4.1
			<b>(Optional)</b> 2.7 Using Measures of Central Tendency	Finding mean, median, and mode. Stem and leaf plots	3102.5.1 3102.5.2

GW	Time Frame	PS	Textbook Section	Objectives	Standards
	<b>Two Weeks</b>		<b>Chapter 3 Solving Inequalities</b>		
*		*	3.1 Inequalities and Their Graphs	Identifying solutions of inequalities Graphing and writing inequalities in one variable	3102.1.3 3102.2.1 3102.3.5
*		*	3.2 Solving Inequalities Using Addition and subtraction	Using addition to solve inequalities. Using subtraction to solve inequalities	3102.1.2 3102.1.3 3102.2.1 3102.3.5
*		*	3.3 Solving Inequalities Using Multiplication and Division	Using multiplication to solve inequalities. Using division to solve inequalities	3102.1.2 3102.1.3 3102.2.1 3102.3.5
*		*	3.4 Solving Multi-Step Inequalities	Solving inequalities with variables on one side. Solving inequalities with variables on both sides	3102.1.2 3102.1.3 3102.2.1
*			<b>(Optional)</b> 3.5 Compound Inequalities	Solving compound inequalities containing AND Solving inequalities joined by OR	3102.2.1 3102.3.5
*			<b>(Optional)</b> 3.6 Absolute Value Equations and Inequalities	Solving absolute value equations Solving absolute value inequalities	3102.1.3 3102.2.1 3102.3.5

GW	Time Frame	PS	Textbook Section	Objectives	Standards
	Three Weeks		<b>Chapter 8 Exponents and Exponential Functions</b>		
			8.1 Zero and Negative Exponents	Zero and Negative Exponents Evaluating Exponential Expressions	3102.1.1 3102.1.3 3102.2.2
			8.2 Scientific Notation	Writing Numbers in Scientific and Standard Notation Using Scientific Notation	3102.1.1 3102.2.1 3102.2.2 3102.3.1
			8.3 Multiplication Properties of Exponents	Multiplying Powers Working with Scientific Notation	3102.1.1 3102.1.3 3102.2.2 3102.3.1
*			8.4 More Multiplication Properties of Exponents	Raising a Power to a Power Raising a Product to a Power	3102.1.1 3102.1.3 3102.2.2 3102.3.1
*			8.5 Division Properties of Exponents	Dividing Powers with the Same Base Raising a Quotient to a Power	3102.1.1 3102.1.3 3102.2.2 3102.3.1
*			8.6 Geometric Sequences	Geometric Sequences Using a Formula	3102.1.1 3102.1.4 3102.3.1 3102.3.5 3102.4.1
			<b>(Optional)</b> 8.7 Exponential Functions	Evaluating Exponential Functions Graphing Exponential Functions	3102.1.1; 3102.1.3 3102.1.4; 3102.3.5 3102.3.6; 3102.3.11
		<b>(Optional)</b> 8.8 Exponential Growth and Decay	Exponential Growth Exponential Decay	3102.1.1; 3102.1.2 3102.1.3; 3102.1.4 3102.3.1; 3102.3.6	
<b>Twelve Weeks Benchmark</b>					

GW	Time Frame	PS	Textbook Section	Objectives	Standards
	Four Weeks		<b>Chapter 9 Polynomials and Factoring</b>		
*			9.1 Adding and Subtracting Polynomials	Describing Polynomials Adding and Subtracting Polynomials	3102.1.3 3102.3.2
*			9.2 Multiplying and Factoring	Distributing a Monomial Factoring a Monomial from a Polynomial	3102.1.3 3102.2.2 3102.3.2
*			9.3 Multiplying Binomials	Multiplying Two Binomials Multiplying a Trinomial and a Binomial	3102.1.3 3102.3.5 3102.4.1
*			9.4 Multiplying Special Cases	Finding a Square of a Binomial Difference of Squares	3102.1.3 3102.3.2 3102.4.1
*			9.5 Factoring Trinomials of the Type $x^2 + bx + c$	Factoring Trinomials	3102.1.3 3102.2.2 3102.3.2 3102.3.3
*			9.6 Factoring Trinomials of the Type $ax^2 + bx + c$	Factoring $ax^2 + bx + c$	3102.1.3 3102.2.2 3102.3.2 3102.3.3
*			9.7 Factoring Special Cases	Factoring Perfect Square Trinomials Factoring the Difference of Squares	3102.1.3 3102.2.2 3102.3.2 3102.3.3 3102.3.5 3102.4.1
			(Optional) 9.8 Factoring by Grouping	Factoring Polynomials with Four Terms Factoring Trinomials by Grouping	3102.1.3 3102.2.2 3102.3.2 3102.3.3 3102.3.5 3102.4.1
<b>End of Semester</b>					

# Year Long Algebra 1

## Second Semester Pacing Guide

GW	General Time Frame To Cover Material	PS	Textbook Section	Objectives	Standards	
	<b>Three Weeks</b>		<b>Chapter 4 Solving and Applying Proportions</b>			
*		*	4-1 Ratio and Proportion	Ratios and Rates, Solving Proportions	3102.1.3 3102.1.5 3102.4.4	
*		*	4-2 Proportions and Similar Figures	Similar Figures, Indirect Measurement and Scale Drawings	3102.1.2 3102.1.3 3102.1.4 3102.1.5 3102.4.4	
*		*	4-3 Proportions and Percent Equations	Applying Proportions to Percent Problems, Percent Equations	3102.1.2 3102.1.3 3102.1.4 3102.1.5	
*		*	4-4 Percent of Change	Percent of Change, Percent Error	3102.1.2 3102.1.3 3102.1.4 3102.1.5 3102.2.3 3102.4.1	
*				4-5 Applying Ratios to Probability	Theoretical Probability, Experimental Probability	3102.1.2 3102.1.3 3102.1.4 3102.5.5
*				4-6 Probability of Compound Events	Finding the Probability of Independent Events, Probability of Dependent events	3102.1.2 3102.1.3 3102.1.4 3102.5.5

GW	Time Frame	PS	Textbook Section	Objectives	Standards
	All Sections Except 5.2 and 5.6 Are Optional. Include Them In Chapter 6 Time Frame		<b>Chapter 5 Graphs and Functions</b>		
*			<b>(Optional)</b> 5-1 Relating Graphs to Events	Interpreting, Sketching, and Analyzing Graphs	3102.1.4 3102.3.6 3102.5.1
*			5-2 Relations and Functions	Identifying Relations and Functions, Evaluating Functions	3102.1.2 3102.1.3 3102.1.4 3102.3.5 3102.3.6 3102.3.7
			<b>(Optional)</b> 5-3 Function Rules, Tables, and Graphs	Modeling Functions	3102.1.2 3102.1.3 3102.1.4 3102.1.5 3102.3.1 3102.3.5 3102.3.6 3102.3.7
			<b>(Optional)</b> 5-4 Writing a Function Rule	Writing Function Rules	3102.1.2 3102.1.3 3102.1.4 3102.1.5 3102.3.1 3102.3.5 3102.3.6 3102.3.7
			<b>(Optional)</b> 5-5 Direct Variation	Writing the Equation of a Direct Variation; Ratios, Proportions, and Direct Variations	3102.1.2 3102.1.3 3102.1.5 3102.3.1 3102.3.6
*			5-6 Describing Number Patterns	Inductive Reasoning and Number Patterns, Writing Rules for Arithmetic Sequences	3102.1.1 3102.1.2 3102.1.3 3102.3.1 3102.3.6 3102.5.1.

GW	Time Frame	PS	Textbook Section	Objectives	SPI's
	<b>Four Weeks</b>		<b>Chapter 6 Linear Equations and Their Graphs</b>		
*		*	6-1 Rate of Change and Slope	Finding Rates of Change, Finding Slope	3102.1.2 3102.1.3 3102.1.4 3102.1.5 3102.1.6 3102.3.8 3102.4.4
*		*	6-2 Slope-Intercept Form	Writing Linear Equations, Graphing Equations	3102.1.3 3102.1.6 3102.3.8
			6-3 Standard Form	Graphing Equations Using Intercepts, Writing Equations in Standard Form	3102.1.2 3102.1.3 3102.3.8
<b>Six Weeks Benchmark</b>					
*		*	6-4 Point-Slope Form and Writing Linear Equations	Using Point-Slope Form, Writing Linear Equations Using Data	3102.1.2 3102.1.3 3102.1.5 3102.1.6 3102.3.8
			6-5 Parallel and Perpendicular Lines	Parallel Lines, Perpendicular Lines	3102.1.3 3102.1.5 3102.3.8
			<b>(Optional)</b> 6-6 Scatter Plots and Equations of Lines	Writing and Equation for a Trend Line, Writing an Equation for a Line of Best Fit	3102.1.2 3102.1.3 3102.1.4 3102.3.8 3102.5.1 3102.5.3 3102.5.4
			<b>(Optional)</b> 6-7 Graphing Absolute Value Equations	Translating Graphs of Absolute Value Equations	3102.1.5 3102.3.5

GW	Time Frame	PS	Textbook Section	Objectives	Standards
	Three Weeks		<b>Chapter 7 Systems of Equations and Inequalities</b>		
*		*	7.1 Solving Systems by Graphing	Solving Systems by Graphing Analyzing Special Types of Systems	3102.3.5 3102.3.6 3102.3.9 3102.5.1
*		*	7.2 Solving Systems by Substitution	Using Substitution	3102.1.3 3102.3.1 3102.3.5 3102.3.6 3102.3.9
*		*	7.3 Solving Systems using Elimination	Adding and Subtracting to Solve Systems Multiplying First to Solve Systems	3102.1.3 3102.3.1 3102.3.5 3102.3.6 3102.3.9
			<b>(Optional)</b> 7.4 Applications of Linear Systems	Writing Systems of Linear Equations	3102.1.2 3102.1.3 3102.1.4 3102.3.1 3102.3.5 3102.3.6 3102.3.9
*		*	7.5 Linear Inequalities	Graphing Linear Inequalities Modeling Real-World Situations	3102.1.2 3102.1.3 3102.2.1 3102.3.5 3102.3.9 3102.5.1
*		*	7.6 Systems of Linear Inequalities	Solving Systems of Linear Inequalities by Graphing Writing and Using Systems of Linear Inequalities	3102.1.2 3102.2.1 3102.3.1 3102.3.5 3102.3.6 3102.3.9 3102.5.1

GW	Time Frame	PS	Textbook Section	Objective	Standards
	<b>Three Weeks</b>		<b>Chapter 11 Radical Expressions and Equations</b>		
*		*	11.1 Simplifying Radicals	To Simplify Radicals Involving Products To Simplify Radicals Involving Quotients	3102.1.1 3102.1.3 3102.2.1 3102.2.2
*		*	11.2 The Pythagorean Theorem	To Solve Problems Using the Pythagorean Theorem To Identify Right Triangles	3102.1.3 3102.3.5 3102.4.1 3102.4.2 3102.4.3
<b>Twelve Weeks Benchmark</b>					
*		*	11.3 The Distance and Midpoint Formulas	To Find the Distance Between Two Points on a Coordinate Plane To Find the Coordinates of the Midpoint of a Line Segment	3102.1.3 3102.3.5 3102.4.1 3102.4.2 3102.4.3
				11.4 Operations With Radical Expressions	To Simplify Sums and Differences To Simplify Products and Quotients
			<b>(Optional)</b> 11.5 Solving Radical Equations	To Solve Equations Containing Radicals To Identify Extraneous Solutions	3102.1.2 3102.1.3 3102.2.1 3102.3.4 3102.3.5 3102.3.7 3102.3.9
			<b>(Optional)</b> 11.6 Graphing Square Root Functions	To Graph Square Root Functions To Translate Graphs of Square Root Functions	3102.1.5 3102.3.4 3102.3.5 3102.3.6 3102.3.7 3102.3.11
			<b>(Optional)</b> 11.7 Trigonometric Ratios	To Find Trigonometric Ratios To Solve Problems Using Trigonometric Ratios	3102.1.3 3102.3.5 3102.4.1 3102.4.2 3102.4.3

GW	Time Frame	PS	Textbook Section	Objectives	Standards
	Three Weeks		<b>Chapter 10 Quadratic Equations and Functions</b>		
*			10.1 Exploring Quadratic Graphs	To Graph Quadratic Functions of the Form $y=ax^2$ To Graph Quadratic Functions of the Form $y=ax^2+c$	3102.1.4 3102.3.4 3102.3.5 3102.3.6
*			10.2 Quadratic Functions	To Graph Quadratic Functions of the Form $y=ax^2+bx+c$ To Graph Quadratic Inequalities	3102.1.3 3102.1.4 3102.3.5 3102.3.6 3102.3.10
			<b>(Optional)</b> 10.3 Finding and Estimating Square Roots	To Find Square Roots To Estimate and Use Square Roots	3102.1.1 3102.2.1 3102.2.2 3102.3.1 3102.3.3
*			10.4 Solving Quadratic Equations	To Solve Quadratic Equations by Graphing To Solve Quadratic Equations Using Square Roots	3102.1.2 3102.1.3 3102.2.1 3102.3.5 3102.3.10 3102.3.11 3102.4.1
*			10.5 Factoring to Solve Quadratic Equations	To Solve Quadratic Equations by Factoring	3102.1.3 3102.2.2 3102.3.3 3102.3.4 3102.3.7 3102.3.10
			<b>(Optional)</b> 10.6 Completing the Square	To Solve Quadratic Equations by Completing the Square	3102.1.3 3102.3.3 3102.3.4 3102.3.7 3102.3.10
*			10.7 Using the Quadratic Formula	To Use the Quadratic Formula When Solving Quadratic Equations To Choose an Appropriate Method for Solving a Quadratic Equation	3102.1.3 3102.2.1 3102.3.5 3102.3.10 3102.3.11
*			10.8 Using the Discriminate	To Find the Number of Solutions of a Quadratic Equation	3102.1.3 3102.3.1 3102.3.5 3102.3.10
			<b>(Optional)</b> 10.9 Choosing a Model	To Choose a Linear, Quadratic, or Exponential Model for Data	3102.1.2 3102.1.3 3102.1.6 3102.3.1 3102.3.3 3102.3.5 3102.3.6 3102.3.11 3102.5.1 3102.5.2

GW	Time Frame	PS	Textbook Section	Objectives	Standards
<b>This Chapter is Optional</b>			<b>Chapter 12 Rational Expressions and Functions</b>		
	Please note that 12.8 is a Gateway tested item.		12.1 Inverse Variation	To Solve Inverse Variations To Compare Direct and Inverse Variation	3102.1.4 3102.1.5 3102.3.1 3102.3.5 3102.3.6
			12.2 Graphing Rational Functions	To Graph Rational Functions To Identify Types of Functions	3102.1.5 3102.3.2 3102.3.4 3102.3.5 3102.3.6 3102.3.7
			12.3 Simplifying Rational Expressions	To Simplify Rational Expressions	3102.1.3 3102.2.2 3102.3.2 3102.3.4
			12.4 Multiplying and Dividing Rational Expressions	To Multiply Rational Expressions To Divide Rational Expressions	3102.1.3 3102.2.2 3102.3.4
			12.5 Dividing Polynomials	To Divide Polynomials	3102.1.3 3102.3.1 3102.3.4 3102.3.5 3102.4.1
			12.6 Adding and Subtracting Rational Expressions	To Add and Subtract Rational Expressions with Like Denominators To Add and Subtract Rational Expressions with Unlike Denominators	3102.1.3 3102.2.2 3102.3.2 3102.3.3
			12.7 Solving Rational Equations	To Solve Rational Equations To Solve Proportions	3102.1.2 3102.1.3 3102.3.5
*			12.8 Counting Methods and Permutations	To Use the Multiplication Counting Principle To Find Permutations	3101.1.1 3102.1.3 3102.3.1 3102.3.5 3102.3.6 3102.5.5
			12.9 Combinations	To Find Combinations To Find Probability with Counting Techniques	3101.1.1 3102.1.3 3102.3.1 3102.3.5 3102.3.6 3102.5.5