

Algebra 1 At-a-Glance

Marking Period 1

Unit 1: Relationships Between Quantities and Reasoning with Equations	
Sept	<ul style="list-style-type: none"> • Unit 1 Topic 1: Linear Equations in One Variable By the end of 8th grade, students have mastered the process of solving linear equations in one variable. Unit 1 of Algebra I builds on that experience by asking students to analyze and explain this process and to reason quantitatively and use units to solve problems. Students will develop fluency in writing expressions and linear equations in one variable, and will use them to solve problems.
	<ul style="list-style-type: none"> • Unit 1 Topic 2: Linear Inequalities in One Variable Students apply their knowledge of linear equations to inequalities. Students develop fluency and master writing, interpreting, and translating inequalities in one variable. They will then use these inequalities to solve problems.
Oct	<ul style="list-style-type: none"> • Unit 1 Topic 3: Exponential Equations in One Variable Students will extend their knowledge from linear equations and inequalities to solve simple exponential equations that rely only on the application of the laws of exponents.
Unit 2: Linear and Exponential Relationships	
	<ul style="list-style-type: none"> • Unit 2 Topic 1: Characteristics of Functions Unit two focuses on linear and exponential relationships in two variables, beginning with developing a solid understanding of functions. In this topic, students learn function notation and develop the concepts of domain and range. Students learn to determine and interpret a function's rate of change.
Oct	<ul style="list-style-type: none"> • Unit 2 Topic 2: Constructing and Comparing Linear and Exponential Functions Students continue learning through the exploration of functions, including sequences. Students interpret arithmetic sequences as linear functions and geometric sequences as exponential functions. They also describe key features of both linear and exponential functions. Students interpret functions given graphically, numerically, symbolically, and verbally, translate between representations, and understand the limitations of various representations.

Marking Period 2

Nov	<ul style="list-style-type: none"> • Unit 2 Topic 2: Constructing and Comparing Linear and Exponential Functions <i>Continued</i>
Dec	<ul style="list-style-type: none"> • Unit 2 Topic 3: Systems of Equations and Inequalities in Two Variables Students develop methods to write and solve systems of equations and linear inequalities. They will be able to represent constraints as inequalities. Students continue to achieve fluency writing, interpreting, and translating between various forms of linear equations and inequalities in two variables, and use them to solve problems.

Marking Period 3

Unit 4: Quadratic Relationships	
Jan/ Feb	<ul style="list-style-type: none"> • Unit 4 Topic 1: Quadratic Functions In this unit, students extend their knowledge of linear and exponential functions to quadratic functions. They compare the key characteristics of quadratic functions to those of linear and exponential functions and select from among these functions to model phenomena. They will interpret quadratic functions and write quadratic functions given context.
Feb/ Mar	<ul style="list-style-type: none"> • Unit 4 Topic 2: Structure of Quadratic Expressions Students will graph quadratic equations and show and analyze key features of the function. Students will formalize and become fluent in strategies for factoring trinomials and finding zeroes.
Mar	<ul style="list-style-type: none"> • Unit 4 Topic 3: Solving Quadratic Equations Students will solve quadratic equations through various methods and will apply these methods strategically to solve problems most efficiently. They will derive the quadratic formula and will use apply their knowledge of quadratic functions to explain the Pythagorean Theorem.

Marking Period 4

Apr	<ul style="list-style-type: none"> • Unit 4 Topic 3: Solving Quadratic Equations <i>Continued</i>
Unit 3: Descriptive Statistics	
Apr/ May	<ul style="list-style-type: none"> • Unit 3 Topic 1: Analyzing Data Representations This unit builds upon students' prior experiences with center, variability, scatterplots, and linear trends in data, by providing more formal means of assessing how a model fits data. Students use regression techniques to describe approximately linear relationships between quantities and look at residuals to analyze the goodness of fit.
Unit 5: Generalizing Function Properties	
May/ Jun	<ul style="list-style-type: none"> • Unit 5 Topic 1: Function Families Students expand their experience with linear, quadratic, and exponential functions to include more specialized functions—absolute value, step, and those that are piecewise-defined. They select from among these models to model phenomena and solve problems.