

CPM Algebra 1 Pacing Calendar and Standards Alignment

 - Non-Math Teaching days/ Holidays

First Semester Instructional Days	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Sept.						Chapter 1					Chapter 1					Chapter 1			Ch 2		Ch 2			
Oct.	Chapter 2					Chapter 2					Chapter 3					Chapter 3					Ch 3			
Nov.	Ch 3		Ch 4			Chapter 4					Chapter 4					Chapter 4					Ch 5			
Dec.	Chapter 5					Chapter 5					Chapter 5					Chapter 6								
Jan.			Ch 6			Chapter 6					Chapter 6					Exam			Ch 7				Chapter 7	

Chapter 1 (13 days)	Chapter 2 (13 days)	Chapter 3 (15 days)	Chapter 4 (15 days)	Chapter 5 (16 days)	Chapter 6 (16 days)
<p>Functions: Welcome to algebra! In previous courses, you may have learned about relationships between two quantities that could be graphed with a straight line. In this chapter, you will explore nonlinear functions and learn how to describe a function completely. You will see the shapes and behaviors of several different nonlinear functions. This chapter also introduces you to sharing your mathematical knowledge with a study team as you work together to solve problems.</p>	<p>Linear Relationships: Chapter 2 will focus on the starting value and growth of linear functions. You will look for connections between the multiple representations of linear functions: table, graph, equation, and situation. In this chapter, you will come to a deeper understanding of slope than you may have had in previous courses, and you will explore the idea of slope as a rate of change.</p>	<p>Simplifying and Solving: In this chapter you will focus on multiplying expressions. You will also solve equations that contain products. While these new ideas will be introduced using algebra tiles, you will also develop a method to multiply expressions without using tiles.</p>	<p>Systems of Equations: In Chapter 2, you studied the connections between the multiple representations of linear equations and learned how to write equations from situations. In this chapter, you will learn how to solve word problems by writing a pair of equations, called a system of equations. Then you will solve the system of equations with the same multiple representations you used for solving linear equations: table, graph, and by manipulating the equations. Along the way, you will develop ways to solve different forms of systems, and will learn how to recognize when one method may be more efficient than another. By the end of this chapter, you will know multiple ways to find the point of intersection of two lines and will be able to solve systems that arise from different situations.</p>	<p>Sequences: Chapter 5 provides you an opportunity to review and strengthen your algebra skills while you learn about arithmetic and geometric sequences. Early in the chapter, you will find yourself using familiar strategies such as looking for patterns and making tables to write algebraic equations describing sequences of numbers. Later in the chapter, you will develop shortcuts for writing equations for certain kinds of sequences.</p>	<p>Modeling Two-Variable: In Chapter 6 you will be describing a dependent relationship, called the association, between two numerical variables. You will use scatterplots of data to create lines and curves that model the data and then use those models to make predictions. You will mathematically describe the form, direction, strength, and outliers of an association.</p>

Second Semester Instructional Days	1	2	3	4	5			6	7	8	9	10			11	12	13	14	15			16	17	18	19	20			21	22	23	
Jan.			Ch 6				Chapter 6						Chapter 6						Exam					Ch 7				Chapter 7				
Feb.	Chapter 7						Chapter 7						Chapter 8					Chapter 8						Chapter 8								
March	Chapter 8		Ch 9				Chapter 9						Chapter 9					Chapter 9														
April	Chapter 10						Chapter 10						Chapter 10					Chapter 10				Ch 11				Ch 11						
May	Chapter 11						Chapter 11						Chapter 11					Chapter 11														
June	Review/Exam																															

Chapter 7 (15 days)	Chapter 8 (14 days)	Chapter 9 (15 days)	Chapter 10 (18 days)	Chapter 11 (23 days)
<p>Exponential Functions: Chapter 7 provides an opportunity for you to learn more about the family of exponential functions. You will also build more advanced algebra skills, such as solving for an indicated variable, simplifying or rewriting exponential expressions, working with fractional exponents, and finding the exponential function that passes exactly through any pair of given points.</p> <p>You will learn about several important applications of exponential functions.</p>	<p>Quadratic Functions: In Chapter 2, you used a web to organize the connections you found between each of the different representations of lines. These connections enabled you to use any representation (such as a graph, rule, situation, or table) to find any of the other representations. You did the same thing in Chapter 7 for exponential functions.</p> <p>In this chapter, a quadratics web will challenge you to find connections between the different representations of a quadratic function. Through this endeavor, you will learn how to rewrite quadratic equations in several forms, and how to use your graphing calculator to assist you.</p>	<p>Solving Quadratics and Inequalities: You will start this chapter by extending your ability to solve quadratic equations, and deciding which method of solving is most efficient.</p> <p>So far in this course you have focused on what you can determine when two expressions are equal. By using what you know about balancing equations, you can now solve linear and quadratic equations for a given variable.</p> <p>However, what if the two expressions are not equal? If you know that one expression is always larger than the other, what does that tell you about the variable? In this chapter you will learn how to deal with these types of relationships, called inequalities. You will develop ways to represent solutions to inequalities both algebraically and graphically.</p> <p>In addition, you will extend your ability to work with mathematical sentences by learning how to write inequalities that describe situations.</p>	<p>Solving Complex Equations: Since the beginning of this course, you have studied several different types of equations and inequalities and have developed successful methods to solve them. For example, you have learned how to solve linear equations and inequalities, quadratic equations and systems of equations and inequalities.</p> <p>In Chapter 10, you will extend your solving skills to include other types of equations, including equations with square roots, absolute values, variables in exponents, and messy fractions. Then you will learn how to determine the number of possible solutions for an equation without actually solving them. You will also consider “imaginary” solutions to quadratic equations.</p> <p>This chapter also focuses on intersections of functions. You will learn how to use the intersection of the graphs of two functions to find the solution to an equation. Then you will solve quadratic and absolute value inequalities.</p> <p>Before all that, you will start this chapter by determining if there is an association between two categorical variables that are represented on a two-way table.</p>	<p>Functions and Data: You will start this chapter by looking at how you can change functions and then how you can “undo” functions.</p> <p>Then you will model a golf game and compare your results with other teams. You will review the ways to graphically show data, and decide whether to use scatterplots or two histograms to compare two variables. You will use statistics to compare two sets of data: center, shape, spread and outliers. Finally, you will learn a new way to describe the variability (the spread) in data called the standard deviation.</p> <p>The course ends with some challenging investigations in which you will draw upon some of the mathematics you have learned this year in order to solve the problems.</p>

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Chapter 1 Rec 10 Days	Chapter 2 Rec 10 Days	Chapter 3 Rec 11 Days	Chapter 4 Rec 11 Days	Chapter 5 Rec 12 Days	Chapter 6 Rec 12 Days	Chapter 7 Rec 11 Days	Chapter 8 Rec 10 Days	Chapter 9 Rec 11 Days	Chapter 10 Rec 12 Days	Chapter 11 Rec 16 Days
<u>Standards</u>	<u>Standards</u>	<u>Standards</u>	<u>Standards</u>	<u>Standards</u>	<u>Standards</u>	<u>Standards</u>	<u>Standards</u>	<u>Standards</u>	<u>Standards</u>	<u>Standards</u>
A-REI.10	N-Q.1 N-Q.2	A-SSE.1a	N-Q.1 N-Q.2	N-Q.2	N-Q.1 N-Q.3	N-RN.1	N-Q.1	N-Q.2	N-RN.3	N-Q.2 N-Q.3
F-IF.1	A-SSE.1a	A-SSE.3a	A-SSE.1b	F-IF.3	S-ID.6a	N-RN.2	A-SSE.1b	A-SSE.3b	A-SSE.1b	A-SSE.3a
F-IF.2	A-SSE.1b	A-SSE.3c	A-CED.1	F-IF.6	S-ID.6b	N-Q.1 N-Q.2	A-SSE.2	A-CED.1	A-SSE.3c	A-CED.1
F-IF.4	A-CED.2	A-APR.1	A-CED.2	F-IF.7e	S-ID.6c	A-SSE.1b	A-SSE.3a	A-CED.2	A-REI.1	A-CED.3
F-IF.5	A-REI.10	A-CED.4	A-REI.5	F-BF.2	S-ID.7	A-SSE.3c	A-SSE.3b	A-CED.3	A-REI.3	F-IF.1 F-IF.4
F-IF.7a	F-IF.4	A-REI.1	A-REI.6	F-LE.1a	S-ID.8	A-CED.1	A-CED.2	A-REI.3	A-REI.4a	F-IF.5 F-IF.7a
F-IF.7b	F-IF.6	A-REI.3	A-REI.10	F-LE.1c	S-ID.9	A-CED.2	A-REI.4a	A-REI.4a	A-REI.4b	F-IF.7e F-IF.8b
F-IF.7e	F-IF.7a		F-LE.1b	F-LE.2		A-REI.10	A-REI.4b	A-REI.4b	A-REI.7	F-BF.3 F-BF.4a
	F-IF.7b	MP1 MP2		F-LE.3	MP1 MP2	F-IF.4 F-IF.5	F-IF.4	A-REI.10	A-REI.11	F-LE.1a F-LE.1c
MP4 MP5	F-IF.9	MP3 MP4	MP1 MP2		MP3 MP4	F-IF.7b F-IF.7e	F-IF.5	A-REI.12	S-ID.5	F-LE.2 F-LE.5
MP6 MP7	F-BF.1a	MP5 MP6	MP3 MP4	MP1 MP2	MP5 MP6	F-IF.8b F-IF.9	F-IF.7a	F-IF.8a		S-ID.1 S-ID.2
MP8	F-LE.1a	MP7 MP8	MP5 MP6	MP3 MP4	MP7 MP8	F-BF.1a	F-IF.8a		MP1 MP2	S-ID.3 S-ID.6a
	F-LE.1b		MP7	MP5 MP6		F-LE.1a	F-IF.9	MP1 MP2	MP4 MP5	S-ID.6b
	F-LE.2 F-LE.5			MP7 MP8		F-LE.1c	F-BF.1a	MP4 MP5	MP6 MP7	S-ID.6c
						F-LE.2 F-LE.5		MP6 MP7	MP8	S-ID.7 S-ID.8
	MP1 MP2						MP4 MP5			
	MP3 MP4					MP1 MP2	MP6 MP7			MP1 MP2
	MP5 MP6					MP4 MP5	MP8			MP4 MP5
	MP7 MP8					MP7 MP8				MP7 MP8

Conceptual Categories contained within Algebra 1

<u>Number and Quantity</u>	<u>Algebra</u>	<u>Functions</u>	<u>Statistics and Probability</u>	<u>Mathematical Practice Standards – (MP)</u>
<p>The Real Number System (N-RN)</p> <ul style="list-style-type: none"> Extend the properties of exponents to rational exponents Use properties of rational and irrational numbers. <p>Quantities (N-Q)</p> <ul style="list-style-type: none"> Reason quantitatively and use units to solve problems 	<p>Seeing Structure in Expressions (A-SSE)</p> <ul style="list-style-type: none"> Interpret the structure of expressions Write expressions in equivalent forms to solve Problems <p>Arithmetic with Polynomials and Rational Expressions (A-APR)</p> <ul style="list-style-type: none"> Perform arithmetic operations on polynomials <p>Creating Equations (A-CED)</p> <ul style="list-style-type: none"> Create equations that describe numbers or Relationships <p>Reasoning with Equations and Inequalities (A-REI)</p> <ul style="list-style-type: none"> Understand solving equations as a process of reasoning and explain the reasoning Solve equations and inequalities in one variable Solve systems of equations Represent and solve equations and inequalities graphically 	<p>Interpreting Functions (F-IF)</p> <ul style="list-style-type: none"> Understand the concept of a function and use function notation Interpret functions that arise in applications in terms of the context Analyze functions using different representations <p>Building Functions (F-BF)</p> <ul style="list-style-type: none"> Build a function that models a relationship between two quantities Build new functions from existing functions <p>Linear, Quadratic, and Exponential Models (F-LE)</p> <ul style="list-style-type: none"> Construct and compare linear, quadratic, and exponential models and solve problems Interpret expressions for functions in terms of the situation they model 	<p>Interpreting Categorical and Quantitative Data (S-ID)</p> <ul style="list-style-type: none"> Summarize, represent, and interpret data on a single count or measurement variable Summarize, represent, and interpret data on two categorical and quantitative variables Interpret linear models 	<ol style="list-style-type: none"> Make sense of problems and persevere in solving them. Reason abstractly and quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.