CPM Eighth Grade Pacing Calendar and Standards Alignment

TBA ISD Instructional Services Team

- 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 1		
Oct.	Chapter 2							Chapter 2							Chapter 2							Ch 2	Chapter 3						Ch 3		
Nov.	Chapter 3							Chapter 3							Chapter 3							Chapter 3							Ch 4		
Dec.	Chapter 4							Chapter 4							Chapter 4							Chapter 5									
Jan.			Ch 5					Chapter 5							Chapter 5							Exam			Ch 6				Chapter 6		

Chapter 1 (16 days)	Chapter 2 (17 days)	Chapter 3 (23 days)	Chapter 4 (16 days)	Chapter 5 (16 days)
Problem Solving: Welcome to math class! This initial chapter will introduce you to many of the big ideas you will explore and the ways in which you will be working. You will apply your current mathematical knowledge to solve problems, some of which you will revisit later in the course using new algebraic tools. In the second part of this chapter, you will develop methods for solving problems that involve proportional relationships. For example, if you want to know how many people at your school are left-handed, how can you use the information from your class to make a prediction? Questions like these will rely on your understanding about proportions.	**Simplifying with Variables:** This chapter begins with a focus on the use of variables, such as x and y. First, you will use tools called "algebra tiles" to explore how and where to use variables. You will write expressions and then learn how to write them in the most efficient way. Later in the chapter, you will learn how to compare two expressions to determine which one is greater. This will lead to a process of recording your steps so that anyone can understand your work. Finally, you will look at what happens when you cannot tell which expression is greater and consider the question, "What if they are equal?" Since the topics in this chapter lay the foundation for simplifying expressions and solving equations, they will be revisited and built upon throughout the course.	**Graphs and Equations:** In this chapter, you will extend your understanding of the use of variables, such as x and y. You will learn about tools like graphing calculators that will help you explore how variables affect tile patterns, tables, and graphs. You will continue to develop your ability to solve equations, which you started in Chapter 2. In this chapter, you will also begin to learn about the multiple representations of data. You will study the connections between graphing and solving equations in Chapter 4.	**Multiple Representations:** This chapter builds on the work you did in the previous two chapters. Chapter 4 contains only one section, as it focuses solely on the connections between the four representations of data: patterns, tables, graphs, and equations (also referred to as "rules").	**Systems of Equations:** In the last chapter, you worked with the connections between different representations of patterns. In this chapter, most of your work will focus on rules (equations). Specifically, you will focus on how to solve them. In Section 5.1, you will solve equations with multiple variables for one of the variables, creating an equivalent equation. You will also learn an efficient way to solve equations with fractions or decimals. In Section 5.2, you will explore situations that can be represented by a line and study what it means when two lines intersect (cross each other). By the end of this chapter, you will know how to use graphs, tables, patterns, and rules to solve almost any problem involving lines.

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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 5					Chapter 5							Chapter 5							Exam			Ch 6				Chapter 6		
Feb.	Chapter 6							Chapter 6							Chapter 7							Chapter 7							Chapter 7		
March	Chapter 7							Chapter 8							Chapter 8							Chapter 8									
April	Chapter 8							Chapter 9							Chapter 9							Chapter 9							Ch 9		
May	Chapter 9			Ch 10				Chapter 10							Chapter 10							Chapter 10									
June	Review/Exam																													

Chapter 6 (15 days)	Chapter 7 (16 days)	Chapter 8 (18 days)	Chapter 9 (19 days)	Chapter 10 (17 days)
Transformations & Similarity: You may not often take the time to think about how you move objects around as you go about daily life. Many of the movements you make in a given day involve changing directions. In Section 6.1, you will investigate different kinds of motion on a coordinate graph. You will learn how to give directions to slide, flip, turn, and stretch flat shapes. You will also learn how to show where the shapes will be after a series of moves. In Section 6.2, you will use mathematics you already know to investigate how shapes change size. You will also determine the unknown length of a side in a figure with given information about the lengths of other sides in the figure and in related figures.	**Slope & Association:** Previously you used histograms and box plots to answer statistical questions involving a single piece of data. In this chapter, you will learn how to use scatterplots to find relationships between two different measures for a set of objects. For example, you could analyze amounts of fertilizer and plant height to answer a question like, "If I give a plant more fertilizer, will it grow taller?" In Section 7.2, you will examine races called triathlons to discover when rates are the same or different. You will also measure of the steepness of lines, a concept called slope, for situations, tables, and graphs. Finally, you will look at how to make predictions about future events from existing data using trend lines and equations. You will learn about the concept of association that helps describe the relationship between two pieces of data.	**Exponents & Functions:** In previous chapters you have investigated relationships that have a constant rate and can be represented as lines on a graph. Other relationships do not change at the same rate all of the time. In Section 8.1, you will investigate patterns of non-linear growth in tables, graphs, and expressions. Following this work, you will look for patterns that will help you simplify complicated expressions with exponents. You will also learn how to represent very large and very small numbers more easily using scientific notation. Finally, in this chapter, you will learn what a function is. You will explore several non-linear functions and learn how to describe them completely.	**Angles & the Pythagorean Theorem:** This chapter focuses on several important geometry concepts. You will begin to investigate several concepts in this chapter, but you will learn a lot more about them in future courses. Section 9.1 focuses on angle relationships. The angle relationships you will explore are the ones found with parallel lines and the angles inside and outside of triangles. You will also learn how you can use what you know about angles to decide if a pair of triangles is similar, without even knowing the side lengths! In Section 9.2, you will focus on the relationships between side lengths in individual triangles. You will learn how to decide if three different lengths will be able to form a triangle and what kind of triangle will be formed. You will use the unique relationship between the side lengths of right triangles to solve problems. You will also learn some more about numbers. In particular, you will learn the mathematical operation called "square root" and explore how it relates to squaring a number. You will learn how to convert both terminating and repeating decimals to fractions. Finally, you will look at some special numbers called "irrationals."	**Surface Area & Volume:** The geometry you explored in Chapter 9 focused on triangles and angles. In this chapter, you will continue to explore geometry concepts but now you will focus on surface areas and volumes. In Section 10.1, you will explore how to find the side length of a cube when you already know the volume. You will measure the surface area and volume of a cylinder, a three-dimensional solid that has a circle as the base. Finally, you will look at the surface areas and volumes of shapes that cannot be sliced into equal layers, such as pyramids, cones, and spheres. In the course closure and reflection (Section 10.2), you will work with your team to solve challenging problems that allow you to reflect about your learning throughout the course.

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Chapter 1 Rec 9 Days	Chapter 2 Rec 10 Days	Chapter 3 Rec 14 Days	Chapter 4 Rec 10 Days	Chapter 5 Rec 10 Days	Chapter 6 Rec 11 Days	Chapter 7 Rec 12 Days	Chapter 8 Rec 12 Days	Chapter 9 Rec 15 Days	Chapter 10 Rec 13 Days
Standards	Standards	Standards	Standards	Standards	Standards	Standards	Standards	Standards	Standards
8.EE.5	8.EE.7a	8.EE.7a	8.EE.6	8.EE.7b	8.G.1a	8.EE.5	8.EE.1	8.NS.1	8.EE.2
8.EE.7a	8.EE.7b	8.EE.7b	8.F.2	8.EE.8a	8.G.1b	8.EE.6	8.EE.3	8.NS.2	8.G.9
8.EE.7b	MP1	8.F.1	8.F.4	8.EE.8b	8.G.1c	8.F.3	8.EE.4	8.EE.2	MP1
8.SP.2	MP2	8.F.2	MP1	8.EE.8c	8.G.2	8.SP.1	8.F.1	8.G.5	MP3
MP1	MP3	8.F.3	MP3	MP1	8.G.3	8.SP.2	8.F.3	8.G.6	MP4
MP2	MP5	8.F.4	MP6	MP2	8.G.4	8.SP.3	8.F.5	8.G.7	MP5
MP3	MP6	MP1	MP7	MP3	MP1	8.SP.4	MP1	8.G.8	MP6
MP4		MP5	MP8	MP4	MP2	MP1	MP7	MP1	
MP7				MP5	MP6	MP3	MP8	MP2	
MP8				MP6		MP4		MP4	
						MP6		MP6	
						MP7		MP7	
								MP8	

NS – The Number System
- Know that there are numbers that are not rational, and approximate them by rational numbers.

EE - Expressions and Equations
- Work with radicals and integer exponents.
- Understand the connections between proportional relationships, lines, and linear equations.
- Analyze and solve linear equations and pairs of simultaneous linear equations.

F - Functions
- Define, evaluate, and compare functions.
- Use functions to model relationships between quantities.

G – Geometry
- Understand congruence and similarity using physical models, transparencies, or geometry software.
- Understand and apply the Pythagorean Theorem.
- Solve real-world and mathematical problems involving volume of cylinders, cones and spheres.

SP – Statistics and Probability
- Investigate patterns of association in bivariate data.

MP – Mathematical Practice Standards
1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.