SPS Math 7 Scope and Sequence - Year at a Glance

Math 7 Course Overview:			
In Grade 7, instructional time should focus on four critical areas: (1) developing understanding of and applying proportional relationships; (2) developing understanding of operations with rational numbers and working with expressions and linear equations; (3) solving problems involving scale drawings and informal geometric constructions, and working with two- and three-dimensional shapes to solve problems involving area, surface are, and volume; and (4) drawing inferences about populations based on samples.			
(1) Students extend their understanding of ratios and develop understanding of proportionality to solve single- and multi-step problems. Students use their understanding of ratios and proportionality to solve a wide variety of percent problems, including those involving discounts, interest, taxes, tips, and percent increase or decrease. Students solve problems about scale drawings by relating corresponding lengths within an abject are preserved in similar objects. Students graph proportional relationships and understand the unit rate informally as a measure of the steepness of the related line, called the slope. They distinguish proportional relationships from other relationships.	(2) Students develop a unified understanding of number, recognizing fractions, decimals (that have a finite or repeating decimal representation), and percents as different representations of rational numbers. Students extend addition, subtraction, multiplication and division to all rational numbers, maintaining the properties of operations and the relationships between addition and subtraction, and multiplication and division. By applying these properties, and by viewing negative numbers in terms of everyday contexts (e.g., amounts owed or temperatures below zero), students explain and interpret the rules for adding, subtracting, multiplying, and dividing with negative numbers. They use the arithmetic of rational numbers as they formulate expressions and equations in one variable and use these equations to solve problems.	(3) Students continue their work with area from Grade 6, solving problems involving the area and circumference of a circle and surface area of three-dimensional objects. In preparation for work on congruence and similarity in Grade 8 they reason about relationships among two-dimensional figures using scale drawings and informal geometric constructions, and they gain familiarity with the relationships between angles formed by intersecting lines. Students work with three-dimensional figures, relating them to two – dimensional figures by examining cross-sections. They solve real-world and mathematical problems involving area, surface area, and volume of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	(4) Students build on their previous work with single data distributions to compare two data distributions and address questions about differences between populations. They begin informal work with random sampling to generate data sets and learn about the importance of representative samples for drawing inferences.

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	Instructional Event	Length of Unit	Time Frame
Semester 1	**Topic 0: Build the Math Community**	3	Quarter 1
	Topic 1: Rational Number Operations	25	Quarter 1
	Topic 2: Analyze and Use Proportional Relationships	17	Quarter 1
	Topic 3: Analyze and Solve Percent Problems	17	Quarter 2
	Topic 4: Generate Equivalent Expressions	21	Quarter 2
Semester 2	**Topic 5: Solve Problems Using Equations and Inequalities**	19	Quarter 3
	Topic 8: Solving Problems Involving Geometry	23	Quarter 3
	Topic 6: Use Sampling to Draw Inferences About Populations	13	Quarter 4
	Topic 7: Probability	19	Quarter 4
	Total number of days	**157**	

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	Topic 0	Topic 1	Topic 2	Topic 3	Topic 4	Topic 5	Topic 8	Topic 6	Topic 7
	Build the Math Community	Integers and Rational Numbers	Analyze and Use Proportional Relationships	Analyze and Solve Percent Problems	Generate Equivalent Expressions	Solve Problems Using Equations and Inequalities	Solving Problems Involving Geometry	Use Sampling to Draw Inferences About Populations	Probability
Content Standards and Math Practices	3 days	25 days	17 days	17 days	21 days	19 days	23 days	13 days	19 days
	Build community	7.NS.1a	7.RP.1	7.RP.2c	7.EE.1	7.EE.3	7.NS.3	7.SP.1	7.RP.2c
		7.NS.1b	7.RP.2a	7.RP.3	7.EE.2	7.EE.4	7.EE.3	7.SP.2	7.EE.3
	Establish classrooms norms	7.NS.1c	7.RP.2b		7.EE.3	7.EE.4a	7.EE.4a	7.SP.2c	7.SP.5
		7.NS.2a	7.RP.2c	SMP 1	7.EE.4	7.EE.4b	7.G.1	7.SP.3	7.SP.6
	Practice math discourse	7.NS.2b	7.RP.2d	SMP 2			7.G.2	7.SP.4	7.SP.7a
		7.NS.2c	7.RP.3	SMP 3	SMP 1	SMP 2	7.G.3		7.SP.7b
		7.NS.2d		SMP 7	SMP 2	SMP 3	7.G.4	SMP 2	7.SP.8a
		7.NS.3	SMP 2		SMP 4	SMP 4	7.G.5	SMP 4	7.SP.8b
		7.EE.3	SMP 3		SMP 7		7.G.6	SMP 8	7.SP.8c
			SMP 7						
		SMP 2	SMP 8				SMP 2		SMP 1
		SMP 4					SMP 6		SMP 3
		SMP 5					SMP 7		SMP 4
		SMP 7					SMP 8		SMP 7

Major Standards

Supporting Standards

Additional Standards

Some clusters require greater emphasis than the others based on the depth of the ideas, the time that they take to master, and/or their importance to future mathematics. Note, however, that a standard can be individually important even though the indicated mathematics may require relatively little teaching time. Some clusters that are not major emphases in themselves are designed to support and strengthen areas of major emphasis, while other clusters that may not connect tightly or explicitly to the major work of the grade would fairly be called additional.