SPS Math 7/8 Compacted Scope and Sequence - Year at a Glance

Math 7/8 Compacted Course Overview:			
This course differs from the non-accelerated 7th Grade course in that it contains content from 8th grade. While coherence is retained, in that it logically builds from the 6th Grade, the additional content when compared to the non-accelerated course demands a faster pace for instruction and learning. Content is organized into four critical areas, or units. The Mathematical Practice Standards apply throughout each course and, together with the content standards, prescribe that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations. The critical areas are as follows:			
Critical Area 1: Students develop a unified understanding of number, recognizing fractions, decimals (that have a finite or a 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. They extend their mastery of the properties of operations to develop an understanding of integer exponents, and to work with numbers written in scientific notation.	Critical Area 2: Students use linear equations and systems of linear equations to represent, analyze, and solve a variety of problems. Students recognize equations for proportions ($y/x = m$ or $y = mx$) as special linear equations ($y = mx + b$), understanding that the constant of proportionality (m) is the slope, and the graphs are lines through the origin. They understand that the slope (m) of a line is a constant rate of change, so that if the input or x-coordinate changes by an amount A, the output or y-coordinate changes by the amount $m \times A$. Students strategically choose and efficiently implement procedures to solve linear equations in one variable, understanding that when they use the properties of equality and the concept of logical equivalence, they maintain the solutions of the original equation.	Critical Area 3: 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.	Critical Area 4: 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, 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. Students use ideas about distance and angles, how they behave under translations, rotations, reflections, and dilations, and ideas about congruence and similarity to describe and analyze two-dimensional figures and to solve problems. Students show that the sum of the angles in a triangle is the angle formed by a straight line, and that various configurations of lines give rise to similar triangles because of the angles created when a transversal cuts parallel lines. Students complete their work on volume by solving problems involving cones, cylinders, and spheres.

SEATTLE PUBLIC SCHOOLS

SPS Math 7/8 Compacted Scope and Sequence - Year at a Glance

	Instructional Event	Suggested # of days	Target Frame
Semester 1	**Topic 0: Build the Math Community**	3	Quarter 1
	Topic 1: Rational Number Operations *(Math 7 Topic 1)*	19	Quarter 1
	Topic 2: Real Numbers *(Math 8 Topic 1)*	12	Quarter 1
	Topic 5: Generate Equivalent Expressions *(Math 7 Topic 4)*	16	Quarter 1 – Quarter 2
	Topic 6: Solve Problems Using Equations and Inequalities *(Math 7 Topic 5)*	15	Quarter 2
	Topic 7: Analyze and Solve Linear Equations Part 1 *(Math 8 Topic 2)*	10	Quarter 2
	Topic 3: Analyze and Use Proportional Relationships *(Math 7 Topic 2)*	16	Quarter 2 – Quarter 3
Semester 2	**Topic 7: Analyze and Solve Linear Equations Part 2** *(Math 8 Topic 2)*	9	Quarter 3
	Topic 4: Analyze and Solve Percent Problems *(Math 7 Topic 3)*	11	Quarter 3
	Topic 8: Use Sampling to Draw Inferences About Populations *(Math 7 Topic 6)*	8	Quarter 3
	Topic 9: Probability *(Math 7 Topic 7)*	9	Quarter 3
	Topic 10: Solve Problems Involving Geometry *(Math 7 Topic 8)*	13	Quarter 4
	Topic 11: Congruence and Similarity *(Math 8 Topic 6)*	15	Quarter 4
	Topic 13: Solve Problems Involving Surface Area and Volume *(Math 8 Topic 8)*	7	Quarter 4
	Total number of instructional days	**163**	

SEATTLE PUBLIC SCHOOLS

SPS Math 7/8 Compacted Scope and Sequence - Year at a Glance

		Topic 0	Topic 1	Topic 2	Topic 5	Topic 6	Topic 7	Topic 3	Topic 7
		Build the Math Community	**Integers and Rational Numbers**	**Real Numbers**	**Generate Equivalent Expressions**	**Solve Problems Using Equations and Inequalities**	**Analyze and Solve Linear Equations Part 1**	**Analyze and Use Proportional Relationships**	**Analyze and Solve Linear Equations Part 2**
		3 days	**19 days**	**12 days**	**16 days**	**15 days**	**10 days**	**16 days**	**9 days**
Content Standards and Math Practices	Build community		7.NS.1a	8.NS.A.1	7.EE.A.1	7.EE.B.3	~~8.EE.B.5~~	7.RP.A.1	~~8.EE.B.5~~
			7.NS.1b	8.NS.A.2	7.EE.A.2	7.EE.B.4	8.EE.C.7a	7.RP.A.2a	8.EE.B.6
	Establish classrooms norms		7.NS.1c	8.EE.A.1	7.EE.B.3	7.EE.B.4a	8.EE.C.7b	7.RP.A.2b	
			7.NS.1d	8.EE.A.2	7.EE.B.4	7.EE.B.4b		7.RP.2c	SMP 2
	Practice math discourse		7.NS.2a	8.EE.A.3			SMP 2	7.RP.2d	SMP 4
			7.NS.2b	8.EE.A.4	SMP 1	SMP 2	SMP 4	7.RP.A.2	SMP 7
			7.NS.2c		SMP 2	SMP 3	SMP 7	7.RP.A.3	
			7.NS.A.3	SMP 2	SMP 4	SMP 4		8.EE.B.6	
			7.EE.B.3	SMP 3	SMP 7	SMP 7			
				SMP 7				SMP 1	
			SMP 2					SMP 2	
			SMP 4					SMP 3	
			SMP 5					SMP 7	
			SMP 7					SMP 8	

SEATTLE PUBLIC SCHOOLS

	Topic 4	Topic 8	Topic 9	Topic 10	Topic 11	Topic 13
	Analyze and Solve Percent Problems	Use Sampling to Draw Inferences About	Probability	Solving Problems Involving Geometry	Congruence and Similarity	Solve Problems Involving Surface Area and Volume
Content Standards and Math Practices	11 days	8 days	9 days	13 days	15 days	7 days
	7.RP.A.2c	7.SP.A.1	7.RP.A.2c	7.NS.A.3	8.G.A.1a	8.G.C.9
	7.RP.A.3	7.SP.A.2	7.EE.B.3	7.EE.B.3	8.G.A.1b	
		7.SP.A.2c	7.SP.C.5	7.EE.B.4a	8.G.A.1c	SMP 2
	SMP 1	7.SP.B.3	7.SP.C.6	7.G.A.1	8.G.A.2	SMP 7
	SMP 2	7.SP.B.4	7.SP.C.7	7.G.A.2	8.G.A.3	
	SMP 3		7.SP.C.7a	7.G.A. 3	8.G.A.4	
	SMP 7	SMP 2	7.SP.C.7b	7.G.B.4	8.G.A.5	
		SMP 4	7.SP.C.8a	7.G.B.5		
		SMP 8	7.SP.C.8b	7.G.B.6	SMP 2	
			7.SP.C.8c		SMP 3	
				SMP 2	SMP 6	
			SMP 1	SMP 6	SMP 7	
			SMP 3	SMP 7		
			SMP 4	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.

SEATTLE PUBLIC SCHOOLS

Math 8 Topics NOT COVERED in Math 7/8 Compacted

Use Functions to Model Relationships	**Investigate Bivariate Data**	**Analyze and Solve Systems of Linear Equations**	**Understand and Apply the Pythagorean Theorem**
None	**None**	**None**	**None**
8.F.1	8.F.3	8.EE.8a	8.G.B.6
8.F.2	8.F.4	8.EE.8b	8.G.B.7
8.F.3	8.SP.1	8.EE.8c	8.G.B.8
8.F.4	8.SP.2	8.F.4	
8.F.5	8.SP.3	8.SP.3	
	8.SP.4		

SEATTLE PUBLIC SCHOOLS