

# Asa Mercer International School Grade 6 Mathematics Scope and Sequence



**Note:** Within each unit, the standards are listed in the order in which they appear in the Common Core State Standards. This does not indicate a teaching order. The unit plan should sequence the learning of the standards to be most advantageous to student learning.

This map differs from the districts only in the sequencing of one unit – we moved ratios and proportions to later in the year in order to establish some elements of linear (proportional) equations and relationships first and to differentiate from equivalent fractions by separating the unit, in time, from the fractions unit.

Also, you will note the district “number line” unit has been split into two (Unit 1 and 2) and the the district Unit 4 and 5 has been combined into one “equations and expression unit” These differences are merely of appearance and not pedagogic.

Content standards and Standards of Mathematical Practice.	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7
	Decimal Operations	Fractions	Equations and Expressions	Rational Number systems	Ratios and Proportion	Geometry	Data and Statistics
	SSD calls this The Gnarly # line Unit 1		SSD split into two units: 4 & 5	SSD Unit 3	SSD Unit 2	SSD Unit 6	SSD Unit 7
	NS2 NS3a NS3b NS3c RP3.c	NS1 NS4 (Find GCF and LCM) NS3.d (division) RP3.c	EE1. EE2.a EE2.b EE2.c EE3. EE4 EE5 EE6 EE7 EE8 EE9 NS4 (use GCF to factor sums)	NS5 NS6 NS7 NS8	RP1 RP2 RP3.a RP3.b RP3.c RP3.d NS4 (Use GCF to simplify or factor ratios) EE9	G1 G2 G3 G4 NS8	SP 1 SP2 SP3 SP4 SP5.a SP5.b SP5.c SP5.d
	15 Days	15 Days	30 Days	20 Days	25 days	20 Days	20 Days
	SMP 2, 6, 7	SMP 2, 6, 7	SMP 1, 2, 4, 7	SMP 4, 7, 8	SMP 2, 3, 7, 8	SMP 4, 5, 6, 7	SMP 3, 4, 5

## SPS Math 6 Scope and Sequence Year at a Glance



### Math 6 Course Overview:

In Grade 6, instructional time should focus on four critical areas: (1) connecting ratios to whole number multiplication and division and using concepts of ratio and rate to solve problems; (2) completing understanding of division of fractions and extending the notion of number to the system of rational numbers, which includes negative numbers; (3) writing, interpreting, and using expressions and equations; and (4) developing understanding of statistical thinking.

<p>(1) Students use reasoning about multiplication and division to solve ratio and rate problems about quantities. By viewing equivalent ratios as deriving from, and extending, pairs of rows (or columns) in the multiplication table, and by analyzing simple drawings that indicate the relative size of quantities, students connect their understanding of multiplication and division with ratios and rates. Thus students expand the scope of problems, and they connect ratios and fractions. Students solve a wide variety of problems involving ratios and rates.</p>	<p>(2) Students use the meaning of fractions, the meaning of multiplication and division, and the relationship between multiplication and division to understand and explain why the procedures for dividing fractions make sense. Students use these operations to solve problems. Students extend their previous understandings of number and the ordering of numbers to the full system of rational numbers, which includes negative rational numbers, and in particular negative integers. They reason about the order and absolute value of rational numbers and about the location of points in all four quadrants of the coordinate plane.</p>	<p>(3) Students understand the use of variables in mathematical expressions. They write expressions and equations that correspond to given situations, evaluate expressions, and use expressions and formulas to solve problems. Students understand that expressions in different forms can be equivalent, and they use the properties of operations to rewrite expressions in equivalent forms. Students know that the solutions of an equations are the values of the variables that make the equation true. Students use properties of operations and the idea of maintaining the equality of both sides of an equation to solve simple one-step equations. Students construct and analyze tables, such as tables of quantities that are in equivalent ratios, and they use equations (such as <math>3x = y</math>) to describe relationships between quantities.</p>	<p>(4) Building on and reinforcing their understanding of number, students begin to develop their ability to think statistically. Students recognize that a data distribution may not have a definite center and that different ways to measure center yield different values. The median measures center in the sense that it is roughly the middle value. The mean measures center in the sense that it is the value that each data point would take on if the total of the data values were redistributed equally, and also in the sense that it is a balance point. Students recognize that a measure of variability (interquartile range or mean absolute deviation) can also be useful for summarizing data because two very different sets of data can have the same mean and median yet be distinguished by their variability. Students learn to describe and summarize numerical data sets, identifying clusters, peaks, gaps, and symmetry, considering the context in which the data were collected.</p>
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Student in Grade 6 also build on their work with are in elementary school by reasoning about relationships among shapes to determine area, surface area, and volume. They find areas of right triangles, other triangles, and special quadrilaterals by decomposing these shapes, rearranging or removing pieces, and relating the shapes to rectangles. Using these methods, students discuss, develop, and justify formulas for areas of triangles and parallelograms. Students find areas of polygons and surface areas of prisms and pyramids by decomposing them into pieces whose area they can determine. They reason about right rectangular prisms with fractional side lengths to extend formulas for the volume of a right rectangular of a right rectangular prism with fractional side lengths. They prepare for work on scale drawings and constructions in Grade 7 by drawing polygons in the coordinate plane.