6th Grade - Math

6th Math	The course is intended to prepare students for a serious study of Pre-Algebra in the 7th grade, followed by a formal course in Algebra in the 8th grade. Coming from the Singapore Mathematics program, students have been exposed to the basic operations of positive real numbers as well as the fundamentals of plane geometry. Singapore Mathematics provides students with an opportunity to master basic algorithms, but with a presentation that solidifies their understanding of why the algorithms work. The primary pedagogical method used in the Singapore courses is the deliberate movement from concrete and pictorial representations to abstract understanding of numbers, shapes, and their relationships. When students begin their study of mathematics in the 6th grade, they should already be at a sufficient level of abstraction. That said, because this is a transition course, it would be helpful for teachers to understand how Singapore Mathematics approaches the CPA1 movement and incorporate these techniques with students, particularly those that are struggling.
	The course begins with a brief study of factors and multiples before presenting operations for positive rational numbers. After mastering fraction and decimal operations, students apply this knowledge to geometry, ratio, and percent concepts before extending this knowledge of number and operations to the entire real line. While some students will have had an introduction to the concept of negative numbers in 5th grade, this will be their first rigorous treatment of the topic. In order to be successful in Pre-Algebra and Algebra, it is imperative that students internalize the concept of a negative number and the accompanying operations. (For instance, why is a negative times a negative always a positive?). Students will then apply this knowledge of operations to simplifying expressions and solving equations, and they ultimately connect equations to tables and graphs in word problem scenarios. Throughout the course, students will work on problems that are aimed at developing their competency with numbers (particularly fractions) while pushing their problem-solving abilities to a higher level.
	Unit 1 Factors and Multiples
	Unit 2 Positive Rational Numbers
	Unit 3 Shapes and Solids
	Unit 4 Decimals
	Unit 5 Ratios
	Unit 6 Percents
	Unit 7 Unit Rates and Conversions
	Unit 8 Signed Numbers and the 4 Quadrants
	Unit 9 Operating with Integers
	Unit 10 Expressions
	Unit 11 Equations and Inequalities
	Unit 12 Graphing Quantitative Relationships
	Unit 13 The Statistical Process
	Unit 14 Numerical Summaries of Data
	Unit 15 Financial Literacy: Accounts, Credit, and Careers