THEMES Gr. 6 to 9: **Numeracy**, **Fractions**, **Equations and Algebra**, **Functions and Graphing**, **Geometry**, **Trigonometry**, **Probability**

Grade 6	Grade 7	Grade 8	Grade 9
• whole number percents	• financial percentage calculations (ex. Discounts, taxes, tips,)		• rational and irrational
• percentage discounts	• relationship between decimals, fractions, and percents	• percents less than 1 and greater than 100	
• small to large numbers (thousandths to billions)	• ratio	• decimal and fractional percents and best buys	• scale diagrams of 2D shapes
	• classification of numbers as prime and composite	• rates and proportional reasoning	• exponents
	• integers, including comparing	• squares and cubes, square roots	
• factors and multiples	• *factors and multiples*	• *factors and multiples*	• factors, prime factors, and numerical radicals
• improper fractions and mixed numbers	• *multiplication and division of fractions and of integers*	• multiplication and division of fractions and of integers	• multiplication and division of decimals, fractions, mixed numbers, integers
• multiplication and division of decimals	• addition and subtraction of fractions and of integers	• *addition and subtraction of fractions and of integers*	• *addition and subtraction of fractions and of integers*
• order of operations	• *order of operations*	• polynomials, adding and subtracting	• operations with polynomials, of degree less than or equal to two
• one-step equations with whole-number coefficients and solutions	• two-step equations with whole-number coefficients and solutions	• one and two-step linear equations involving integers and fractions	• one- and two-step equations with rational coefficients and solutions
	• expressions & equations, writing & evaluating use substitution		• equations involving distribution
			• multi-step one-variable linear equations and inequalities
• line graphs	• circle graphs		
• describing functional relationships	• discrete linear relations, represented by tables, graphs, and expressions	• two-variable linear relations, graphing, interpolation, and extrapolation	• two-variable linear relations, graphs, rates, functions, and relations
• increasing and decreasing patterns using expressions, tables, and graphs		• data collection, display, and analysis, including surveying and sampling	• data collection, display, and analysis, population and sample data
• combinations of transformations, including points in the first quadrant	• combinations of transformations, including points in four quadrants	• central tendency	
• perimeter of complex shapes	• circumference and area of circles		
• area of triangles, parallelograms, and trapezoids		• surface area and volume of regular solids	• surface area and volume of composite solids
• volume of rectangular prisms		• construction, views, and nets of 3D objects	• volume of prisms, pyramids, cones, and spheres
• relation of capacity to volume			
• measurement units and referents for volume and capacity			
• angle measurement and classification	• angles in polygons	• angles in parallel lines	• primary trigonometric ratios
• triangles and pyramids	• cylinders, cones, and spheres	• similarity and congruence	• Pythagorean theorem
	• properties of 2D shapes (ex. Diagonals)		
• single-outcome probability, both theoretical and experimental	• probability of two independent events using sample space	• probability of two independent events	• probability in society
		• logic and patterns to solve games and puzzles	• numerical/spatial reasoning, logic, and patterns to solve puzzles/games
			• personal budgets

NOTE: Topics in *italics* are add-ins; topics are listed in order of importance with topic lowest in columns being less critical (eg. Data collection, Statistics, Probability).