

**Vertical Articulation Technical Assistance Document - Grade 5 Through Grade 8**

	Grade 5	Grade 6	Grade 7	Grade 8
Counting/ Cardinality/ Place Value	5.1 round decimal through thousandths to nearest whole number/tenth/hundredth			
Modeling/Comparing/Ordering	5.2 a) recognize/name fractions in their equivalent decimal form and vice versa; b) compare/order fracts and decimals	6.2 a) frac/dec/% - b) ID from representation; d) compare/order	7.1 b) determine scientific notation for numbers > zero; c) compare/order frac/dec/%, and scientific notation e) ID/describe absolute value for rational numbers	8.1 b) compare/order frac/dec/%, and scientific notation
	5.18 c) model one-step linear equations using add/sub	6.3 a) ID/represent integers; b) order/compare integers; c) ID/describe absolute value of integers	7.3 a) model operations (add/sub/mult/div) w/ integers	
	5.3 a) ID/describe characteristics of prime/composite numbers; b) ID/describe characteristics of even/odd numbers	6.4 represent mult and div of fract		8.2 describe orally/in writing relationships between subsets of the real number system
Operations /Recall	5.5 a) find sum/diff/product/quotient of two decimals through thousandths	6.6 a) mult/div fractions	7.3 b) add/sub/mult/div integers	
Solving Practical Problems	5.4 create/solve single-/multistep practical problems involving add/sub/mult/div of whole numbers	6.7 solve practical problems involving add/sub/mult/div decimals	7.4 single and multistep practical problems with proportional reasoning	8.3 a) solve practical problems involving rational numbers, percent, ratios, and prop; b) determine percent inc/dec
	5.5 b) create/solve single-/multistep practical problems involving decimals	6.6 b) solve practical problems involving add/sub/mult/div fractions		
	5.6 solve single-/multistep practical problems involving add/sub w/ fractions and mixed numbers			
Ratios/ Proportions		6.1 describe/compare data using ratios	7.4 single and multistep practical problems with proportional reasoning	8.3 a) solve practical problems involving rational numbers, percent, ratios, and prop
		6.2 frac/dec/% - a) describe as ratios; b) ID from representation; c) equiv relationships;	7.6 determine similarity of plane figures and write proportions to express relationships between similar quads and triangles	
Expressions/ Operations	5.7 evaluate whole number numerical expressions using order of operations, limited to parentheses/add/sub/mult/div	6.8 evaluate whole number numerical expressions using order of operations	7.13 a) write verbal expressions as algebraic expressions and sentences as equations and vice versa; b) evaluate algebraic expressions	8.1 a) simplify numerical expressions involving positive exponents, using rational numbers, order of operations, properties
				8.4 evaluate algebraic expressions using order of operations

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Exponents/ Squares/ Square Roots		6.5 investigate/describe positive exponents, perfect squares	7.1 a) investigate/describe negative exponents; d) determine square roots	8.5 a) determine if a number is a perfect square; b) find two consecutive whole numbers between which a square root lies
Alg Patt/ Seq	5.17 describe/express the relationship in a number pattern	6.17 ID/extend geometric/arithmetic sequences	7.2 describe/represent arithmetic/geometric sequences using variable expressions	
Properties	5.19 distributive property of mult over addition	6.19 a) investigate/recognize identity properties for add/mult; b) multiplicative property of zero; c) inverse property for mult	7.16 a) apply properties w/ real numbers: commutative and associative properties for add/mult; b) distributive property; c) additive/ multiplicative identity properties; d) additive/ multiplicative inverse properties; e) multiplicative property of zero	8.15 c) ID properties of operations used to solve equations
Equations and Inequalities	5.18 a) investigate/describe concept of variable; b) write open sentence using variable; c) model one-step linear equations using add/sub; d) create problems based on open sentence	6.18 solve one-step linear equations in one variable	7.14 a) solve one- and two-step linear equations; b) solve practical problems in one variable	8.15 a) solve multistep linear equations in one variable (variable on one and two sides of equations); b) solve two-step linear inequalities and graph results on number line; c) ID properties of operations used to solve
		6.20 graph inequalities on number line	7.15 a) solve one-step inequalities; b) graph solutions on number line	8.16 graph linear equation in two variables
			7.12 represent relationships with tables, graphs, rules, and words	8.14 make connections between any two representations (tables, graphs, words, rules)
				8.17 ID domain, range, indep/dep variable
Probability	5.14 make predictions/determine probability by constructing a sample space	6.16 a) compare/contrast dep/indep events; b) determine probabilities for dep/indep events	7.9 investigate/describe the difference between the experimental/theoretical probability	8.12 determine probability of indep/dep events with and without replacement
			7.10 determine the probability of compound events, Basic Counting Principle	
Collect/ Represent Data	5.15 collect/organize/interpret data, using stem-and-leaf plots/line graphs	6.14 a) construct circle graphs; b) draw conclusions/make predictions, using circle graphs; c) compare/contrast graphs	7.11 a) construct/analyze histograms; b) compare/contrast histograms	8.13 a) make comparisons/predictions/inferences, using information displayed in graphs; b) construct/analyze scatterplots

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<b>Measures of Center</b>	5.16 a) describe mean/median/mode; b) describe mean as fair share; c) find the mean/median/mode/range; d) describe range as measure of variation	6.15 a) describe mean as balance point; b) decide which measure of center is appropriate		
<b>Measurement and Applications - Geometric Figures</b>	5.8 a) find perimeter/area/volume; b) differentiate among perimeter/area/volume, ID which measure is appropriate; c) ID equiv measurements within metric system; d) estimate/measure U.S. Cust/metric; e) choose appropriate unit of measure w/ U.S. Cust/metric	6.9 make ballpark comparisons between U.S. Cust/metric system	7.5 a) describe volume/surface area of cylinders; b) solve practical problems involving volume/surface area of rect. prisms and cylinders; c) describe how changes in measured attribute affects volume/surface area	8.7 a) investigate/solve practical problems involving volume/surface area of prisms, cylinders, cones, pyramids; b) describe how changes in measured attribute affects volume/surface area
	5.9 ID/describe diameter/radius/chord/circumference of circle	6.10 a) define $\pi$ ; b) solve practical problems w/circumference/area of circle; c) solve practical problems involving area and perimeter given radius/diameter; d) describe/determine volume/surface area of rectangular prism		8.11 solve practical area/perimeter problems involving composite plane figures
<b>Plane and Solid Figures</b>	5.11 measure right/acute/obtuse/straight angles	6.11 a) ID coordinates of a point in a coordinate plane; b) graph ordered pairs in coordinate plane	7.8 represent transformations of polygons in the coordinate plane by graphing	8.8 a) apply transformations to plane figures; b) ID applications of transformations
	5.12 a) classify angles as right/acute/obtuse/straight; b) triangles as right/acute/obtuse/equilateral/scalene/isosceles	6.13 ID/describe properties of quadrilaterals	7.7 compare/contrast quadrilaterals based on properties	8.6 a) verify/describe relationships among vertical/adjacent/supplementary/complementary angles; b) measure angles $< 360^\circ$
	5.13 a) using plane figures will develop definitions of plane figures; b) investigate/describe results of combining/subdividing plane figures	6.12 determine congruence of segments/angles/polygons	7.6 determine similarity of plane figures and write proportions to express relationships between similar quads and triangles	8.10 a) verify the Pythagorean Theorem; b) apply the Pythagorean Theorem
				8.9 construct a 3-D model given top or bottom/side/front views
<b>Measurement - Money/Time/Temperature</b>	5.10 determine elapsed time in hours/min within 24-hour period			