

Common Core Standards K-8 Critical Areas in Learning Progressions – Number & Operations, Algebra

Kindergarten	1 st Grade	2 nd Grade	3 rd Grade	4 th Grade	5 th Grade	6 th Grade	7 th Grade	8 th Grade
representing and comparing whole numbers, initially with sets of objects	understanding of whole number relationships and grouping in tens and ones	understanding of base-ten notation						
	understanding of addition and subtraction including strategies within 20	fluency with addition and subtraction						
			understanding of multiplication and division including strategies within 100	<u>understanding and fluency with multi-digit multiplication</u>				
				understanding of division involving multi-digit dividends	extending division to 2-digit divisors			
					understanding of operations with decimals to hundredths			
						extending the notion of number to ... negative numbers		
			understanding of fractions, especially unit fractions	understanding of fraction equivalence				
				addition and subtraction of fractions with like denominators	fluency with addition and subtraction of fractions			

Kindergarten	1 st Grade	2 nd Grade	3 rd Grade	4 th Grade	5 th Grade	6 th Grade	7 th Grade	8 th Grade
				multiplication of fractions by whole numbers	understanding of the multiplication of fractions and of division of fractions in limited cases	<u>understanding of division of fractions</u>	understanding of operations with rational numbers	
							understanding of and applying proportional relationships	
						writing, interpreting, and using expressions and equations	working with expressions and linear equations	formulating and reasoning about expressions and equations, and solving linear equations and systems of linear equations
								grasping the concept of a function and using functions to describe quantitative relationships

The **Standards for Mathematical Practice** must be woven into each topic. Together with specific instructional advice in the content standards, these practice standards influence the way mathematics should be taught every day. Students should

- 1) Apply concepts to **solve problems** in everyday contexts.
- 2) **Use reasoning** about mathematical situations and **explain solutions** using viable arguments.
- 3) **Use models** to solve problems (visual representations, equations and functions, ratios and proportions).
- 4) Look for and **make use of patterns** in expressions and situations, and make use of regularity in repeated calculations.

Common Core Standards K-8 Critical Areas in Learning Progressions – Measurement, Geometry and Statistics

Kindergarten	1 st Grade	2 nd Grade	3 rd Grade	4 th Grade	5 th Grade	6 th Grade	7 th Grade	8 th Grade
	understanding of linear measurement and measuring lengths as iterating length units	using standard units of measure						
			understanding of the structure of rectangular arrays and of area	(apply perimeter and area formulas to solve real-world problems)	understanding of volume		working with two- and three-dimensional shapes to solve problems involving area, surface area, and volume	
describing shapes and space	reasoning about attributes of, and composing and decomposing geometric shapes	describing and analyzing shapes	describing and analyzing two-dimensional shapes	understanding that geometric figures can be analyzed and classified based on their properties			solving problems involving scale drawings and informal geometric constructions	analyzing two- and three-dimensional space and figures using distance, angle, similarity, and congruence, and understanding and applying the Pythagorean Theorem
						developing understanding of statistical thinking	drawing inferences about populations based on samples	