

# Common Core Mathematics Standards – Cluster Heading Matrix

DOMAINS	Grade K	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
<b>Counting and Cardinality</b>	<ul style="list-style-type: none"> <li>Know number names and the count sequence</li> <li>Count to tell the number of objects</li> <li>Compare numbers</li> </ul>								
<b>Operations and Algebraic Thinking</b>	<ul style="list-style-type: none"> <li>Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from</li> </ul>	<ul style="list-style-type: none"> <li>Represent and solve problems involving addition and subtraction</li> <li>Understand and apply properties of operations and the relationship between addition and subtraction</li> <li>Add and subtract within 20</li> <li>Work with addition and subtraction equations</li> </ul>	<ul style="list-style-type: none"> <li>Represent and solve problems involving addition and subtraction</li> <li>Add and subtract within 20</li> <li>Work with equal groups of objects to gain foundations for multiplication</li> </ul>	<ul style="list-style-type: none"> <li>Represent and solve problems involving multiplication and division</li> <li>Understand properties of multiplication and the relationship between multiplication and division</li> <li>Multiply and divide within 100</li> <li>Solve problems involving the four operations, and identify and explain patterns in arithmetic</li> </ul>	<ul style="list-style-type: none"> <li>Use the four operations with whole numbers to solve problems</li> <li>Gain familiarity with factors and multiples</li> <li>Generate and analyze patterns</li> </ul>	<ul style="list-style-type: none"> <li>Write and interpret numerical expressions</li> <li>Analyze patterns and relationships</li> </ul>			
<b>Number and Operations - Base Ten</b>	<ul style="list-style-type: none"> <li>Work with numbers 11-19 to gain foundations for place value</li> </ul>	<ul style="list-style-type: none"> <li>Extend the counting sequence</li> <li>Understand place value</li> <li>Use place value understanding and properties of operations to add and subtract</li> </ul>	<ul style="list-style-type: none"> <li>Understand place value</li> <li>Use place value understanding and properties of operations to add and subtract</li> </ul>	<ul style="list-style-type: none"> <li>Use place value understanding and properties of operations to perform multi-digit arithmetic</li> </ul>	<ul style="list-style-type: none"> <li>Generalize place value understanding for multi-digit whole numbers</li> <li>Use place value understanding and properties of operations to perform multi-digit arithmetic</li> </ul>	<ul style="list-style-type: none"> <li>Understand the place value system</li> <li>Perform operations with multi-digit whole numbers and with decimals to hundredths</li> </ul>			
<b>Number and Operations - Fractions</b>				<ul style="list-style-type: none"> <li>Develop understanding of fractions as numbers</li> </ul>	<ul style="list-style-type: none"> <li>Extend understanding of fraction equivalence and ordering</li> <li>Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers Understand decimal notation for fractions, and compare decimal fractions</li> </ul>	<ul style="list-style-type: none"> <li>Use equivalent fractions as a strategy to add and subtract fractions</li> <li>Apply and extend previous understandings of multiplication and division to multiply and divide fractions</li> </ul>			

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Measurement and Data	<ul style="list-style-type: none"> <li>Describe and compare measurable attributes</li> <li>Classify objects and count the number of objects in each category</li> </ul>	<ul style="list-style-type: none"> <li>Measure lengths indirectly and by iterating length units</li> <li>Tell and write time</li> <li>Represent and interpret data</li> </ul>	<ul style="list-style-type: none"> <li>Measure and estimate lengths in standard units</li> <li>Relate addition and subtraction to length</li> <li>Work with time and money</li> <li>Represent and interpret data</li> </ul>	<ul style="list-style-type: none"> <li>Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects</li> <li>Represent and interpret data</li> <li>Geometric measurement: understand concepts of area and relate area to multiplication and to addition</li> <li>Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures</li> </ul>	<ul style="list-style-type: none"> <li>Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit</li> <li>Represent and interpret data</li> <li>Geometric measurement: understand concepts of angle and measure angles</li> </ul>	<ul style="list-style-type: none"> <li>Convert like measurement units within a given measurement system</li> <li>Represent and interpret data</li> <li>Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition</li> </ul>			
Geometry	<ul style="list-style-type: none"> <li>Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres)</li> <li>Analyze, compare, create, and compose shapes</li> </ul>	<ul style="list-style-type: none"> <li>Reason with shapes and their attributes</li> </ul>	<ul style="list-style-type: none"> <li>Reason with shapes and their attributes</li> </ul>	<ul style="list-style-type: none"> <li>Reason with shapes and their attributes</li> </ul>	<ul style="list-style-type: none"> <li>Draw and identify lines and angles, and classify shapes by properties of their lines and angles</li> </ul>	<ul style="list-style-type: none"> <li>Graph points on the coordinate plane to solve real-world and mathematical problems</li> <li>Classify two-dimensional figures into categories based on their properties</li> </ul>	<ul style="list-style-type: none"> <li>Solve real-world and mathematical problems involving area, surface area, and volume</li> </ul>	<ul style="list-style-type: none"> <li>Draw construct, and describe geometrical figures and describe the relationships between them</li> <li>Solve real-life and mathematical problems involving angle measure, area, surface area, and volume</li> </ul>	<ul style="list-style-type: none"> <li>Understand congruence and similarity using physical models, transparencies, or geometry software</li> <li>Understand and apply the Pythagorean Theorem</li> <li>Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres</li> </ul>

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DOMAINS	Grades K-5	Grade 6	Grade 7	Grade 8
Ratios and Proportional Relationships		<ul style="list-style-type: none"><li>Understand ratio concepts and use ratio reasoning to solve problems</li></ul>	<ul style="list-style-type: none"><li>Analyze proportional relationships and use them to solve real-world and mathematical problems</li></ul>	
The Number System		<ul style="list-style-type: none"><li>Apply and extend previous understandings of multiplication and division to divide fractions by fractions</li><li>Compute fluently with multi-digit numbers and find common factors and multiples</li><li>Apply and extend previous understandings of numbers to the system of rational numbers</li></ul>	<ul style="list-style-type: none"><li>Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers</li></ul>	<ul style="list-style-type: none"><li>Know that there are numbers that are not rational, and approximate them by rational numbers</li></ul>
Expressions and Equations		<ul style="list-style-type: none"><li>Apply and extend previous under-standings of arithmetic to algebraic expressions</li><li>Reason about and solve one-variable equations and inequalities</li><li>Represent and analyze quantitative relationships between dependent and independent variables</li></ul>	<ul style="list-style-type: none"><li>Use properties of operations to generate equivalent expressions</li><li>Solve real-life and mathematical problems using numerical and algebraic expressions and equations</li></ul>	<ul style="list-style-type: none"><li>Expressions and Equations Work with radicals and integer exponents</li><li>Understand the connections between proportional relationships, lines, and linear equations</li><li>Analyze and solve linear equations and pairs of simultaneous linear equations</li></ul>
Statistics and Probability		<ul style="list-style-type: none"><li>Develop understanding of statistical variability</li><li>Summarize and describe distributions</li></ul>	<ul style="list-style-type: none"><li>Use random sampling to draw inferences about a population</li><li>Draw informal comparative inferences about two populations</li><li>Investigate chance processes and develop, use, and evaluate probability models</li></ul>	<ul style="list-style-type: none"><li>Investigate patterns of association in bivariate data</li></ul>
Functions				<ul style="list-style-type: none"><li>Define, evaluate, and compare functions</li><li>Use functions to model relationships between quantities</li></ul>

Another way to look at the Standards for Math Practices:

