

Domain	Grade 2	Grade 3	Grade 4
Counting and Cardinality			
Operations and Algebraic Thinking	<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>
Number and Operations in Base Ten	<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>
Number and Operations—Fractions		<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.</li> <li>Understand decimal notation for fractions, and compare decimal fractions.</li> </ul>
Measurement and Data	<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>
Ratios and Proportional Relationships			
The Number System			
Expressions and Equations			
Functions			

**PA Core Mathematics Standards – Cluster Heading Matrix**

**Trifold – Grades 2-3-4**

Geometry	<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>
Statistics and Probability			