



ESSENTIAL QUESTIONS	DOMAINS AND CLUSTERS	3 <sup>rd</sup> GRADE MATH SKILLS	VOCABULARY	PRACTICES, RESOURCES & ASSESSMENT														
<p>Why is understanding a mathematical value important?</p> <p>How do we count numbers to 1,000?</p> <p>What is a fraction?</p> <p>What are the different types of fractions?</p>	<p><b>Operations and Algebraic Thinking</b></p> <p>Demonstrate addition as “putting together” and “adding to”</p> <p>Represent and solve problems involving multiplication and division</p> <p>Demonstrate subtraction as “taking apart” and “taking from”</p> <p>Work with addition and subtract equations</p> <p>Multiply &amp; divide</p>	<p style="text-align: center;"><b>Mastered Skills</b></p> <table border="1" style="width: 100%;"> <tr><td>Solve word problems by adding three whole numbers</td></tr> <tr><td>Apply the commutative property of addition (i.e. If <math>8+3=11</math> then <math>3+8=11</math>)</td></tr> <tr><td>Find the number that makes 10 when added to a given number</td></tr> <tr><td>Add within 20</td></tr> <tr><td>Solve addition word problems</td></tr> <tr><td>Decompose numbers less than or equal to 10 (i.e. <math>5=2+3</math> and <math>5=4+1</math>) using objects or drawings</td></tr> <tr><td>Represent addition with objects, fingers, mental images, drawings, sounds (i.e. claps), acting out situations, verbal explanation, expressions or equations</td></tr> </table> <p style="text-align: center;"><b>Mastered Skills</b></p> <table border="1" style="width: 100%;"> <tr><td>Associate subtraction as an unknown-addend problem (i.e. subtract <math>10-8</math> by finding the number that makes 10 when added to 8)</td></tr> <tr><td>Subtract within 20</td></tr> <tr><td>Relate counting to subtraction (i.e. count on 2 to take away 2)</td></tr> <tr><td>Solve subtraction word problems</td></tr> </table> <p style="text-align: center;"><b>Introduced Skills</b></p> <table border="1" style="width: 100%;"> <tr><td>Fluently add and subtract multi-digit numbers</td></tr> </table> <p style="text-align: center;"><b>Reviewed Skills</b></p> <table border="1" style="width: 100%;"> <tr><td>Use addition and subtraction within 100 to solve one- and two-step word problems</td></tr> <tr><td>Add up to four two-digit numbers</td></tr> </table>	Solve word problems by adding three whole numbers	Apply the commutative property of addition (i.e. If $8+3=11$ then $3+8=11$ )	Find the number that makes 10 when added to a given number	Add within 20	Solve addition word problems	Decompose numbers less than or equal to 10 (i.e. $5=2+3$ and $5=4+1$ ) using objects or drawings	Represent addition with objects, fingers, mental images, drawings, sounds (i.e. claps), acting out situations, verbal explanation, expressions or equations	Associate subtraction as an unknown-addend problem (i.e. subtract $10-8$ by finding the number that makes 10 when added to 8)	Subtract within 20	Relate counting to subtraction (i.e. count on 2 to take away 2)	Solve subtraction word problems	Fluently add and subtract multi-digit numbers	Use addition and subtraction within 100 to solve one- and two-step word problems	Add up to four two-digit numbers	<ul style="list-style-type: none"> <li>• Transformation</li> <li>• Congruent</li> <li>• Cubic feet</li> <li>• Cubic Inches</li> <li>• Equilateral (triangle)</li> <li>• Edges</li> <li>• Sides</li> <li>• Faces</li> <li>• Half Hour</li> <li>• Isosceles Triangle</li> <li>• Scalene Triangle</li> <li>• Right triangle</li> <li>• 3-dimension</li> <li>• 2-dimension</li> <li>• Divisor</li> <li>• Quotient</li> <li>• Factor</li> <li>• Product</li> <li>• Range</li> <li>• Bracket</li> <li>• Parenthesis</li> <li>• Order of Operations</li> <li>• Composite</li> </ul>	<p>8. Look for and express regularity in repeated reasoning</p> <p><b>Resources:</b>  White boards  Base ten blocks  Number lines  Yardstick  Thermometer  Flash Cards  Hundreds chart  Fraction tiles  Analog clocks  Liquid containers  Balance scale  Gram weights  Graph paper  Unit square tiles  Various shapes  Visuals  Pencil and paper</p>
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<p>How do we tell time?</p> <p>Why do we measure things?</p> <p>Why do we use graphs?</p>	<p><b>Operations and Algebraic Thinking</b></p> <p>Use properties of multiplication and division</p> <p>Multiply and divide</p> <p>Solve the problems using the four operations</p> <p>Generate and analyze patterns and relationships</p>	<p style="text-align: center;"><b>Introduced Skills</b></p> <table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td>Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities</td> </tr> <tr> <td></td> <td>Determine the unknown whole number in a multiplication or division equation relating three whole numbers (<math>8x?=48</math>, <math>5=\square\square3</math>, <math>6x6=?</math>)</td> </tr> <tr> <td></td> <td>Apply the commutative property of multiplication (if <math>6x4=24</math> then <math>4x6=24</math>)</td> </tr> <tr> <td></td> <td>Apply the associative property of multiplication [i.e. <math>(3x5)2=3(5x2)=30</math>]</td> </tr> <tr> <td></td> <td>Fluently multiply and divide within 100 using fact families, relationships strategies or properties of operations</td> </tr> <tr> <td></td> <td>Know from memory all products of two one-digit numbers</td> </tr> </table> <p style="text-align: center;"><b>Introduced Skills</b></p> <table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td>Solve multi-step word problems using the four operations</td> </tr> <tr> <td></td> <td>Assess the reasonableness of answers using mental computation and estimation strategies (including rounding)</td> </tr> <tr> <td></td> <td>Use parentheses, brackets or braces in numerical expressions and evaluate expressions with these symbols</td> </tr> <tr> <td></td> <td>Solve problems involving integers using the four operations</td> </tr> </table> <p style="text-align: center;"><b>Mastered Skills</b></p> <table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td>Identify and explain arithmetic patterns (including patterns in addition and multiplication tables)</td> </tr> </table>		Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities		Determine the unknown whole number in a multiplication or division equation relating three whole numbers ( $8x?=48$ , $5=\square\square3$ , $6x6=?$ )		Apply the commutative property of multiplication (if $6x4=24$ then $4x6=24$ )		Apply the associative property of multiplication [i.e. $(3x5)2=3(5x2)=30$ ]		Fluently multiply and divide within 100 using fact families, relationships strategies or properties of operations		Know from memory all products of two one-digit numbers		Solve multi-step word problems using the four operations		Assess the reasonableness of answers using mental computation and estimation strategies (including rounding)		Use parentheses, brackets or braces in numerical expressions and evaluate expressions with these symbols		Solve problems involving integers using the four operations		Identify and explain arithmetic patterns (including patterns in addition and multiplication tables)		
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	<p><b><i>Number and Operation in Base Ten</i></b></p> <p>Compare numbers</p> <p>Explain and use the place value system</p> <p>Use place value understanding and properties of operations to do perform multi-digit arithmetic</p>	<p style="text-align: center;"><b>Introduced Skills</b></p> <table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td>Compare two decimals to thousandths based on meanings of the digits in each place using <math>&lt;</math>, <math>&gt;</math>, and <math>=</math></td> </tr> </table> <p style="text-align: center;"><b>Mastered Skills</b></p> <table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td>Compare two multi-digit numbers based on meanings of the digits in each place</td> </tr> <tr> <td style="width: 20px;"></td> <td>Compare using the symbols <math>&gt;</math>, <math>&lt;</math>, and <math>=</math></td> </tr> </table> <p style="text-align: center;"><b>Introduced Skills</b></p> <table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td>Round multi-digit whole numbers to any place</td> </tr> <tr> <td style="width: 20px;"></td> <td>Recognize that in a multi-digit number, a digit in one place represents ten times what it represents in the place to its right (i.e. <math>700 \div 70 = 10</math>) and <math>1/10</math> of what it represents in the place to its left</td> </tr> </table> <p style="text-align: center;"><b>Reviewed Skills</b></p> <table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td>Explain that the three digits of a three-digit number represent amounts of hundreds, tens and ones</td> </tr> <tr> <td style="width: 20px;"></td> <td>Round whole numbers to the nearest 10 or 100</td> </tr> </table> <p style="text-align: center;"><b>Mastered Skills</b></p> <table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td>Explain that the two digits of a two-digit number represent amounts of tens and ones</td> </tr> <tr> <td style="width: 20px;"></td> <td>Explain that the numbers 11-19 are composed of ten ones and one, two, three, four, five, six, seven, eight or nine ones.</td> </tr> <tr> <td style="width: 20px;"></td> <td>Explain that the numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five six, seven, eight, or nine tens (and 0 ones), and 100, 200, 300, etc. refer to one, two, three, etc. hundreds</td> </tr> </table> <p style="text-align: center;"><b>Introduced Skills</b></p> <table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td>Multiply one-digit whole numbers by multiples of 10 in the range 10-90</td> </tr> </table>		Compare two decimals to thousandths based on meanings of the digits in each place using $<$ , $>$ , and $=$		Compare two multi-digit numbers based on meanings of the digits in each place		Compare using the symbols $>$ , $<$ , and $=$		Round multi-digit whole numbers to any place		Recognize that in a multi-digit number, a digit in one place represents ten times what it represents in the place to its right (i.e. $700 \div 70 = 10$ ) and $1/10$ of what it represents in the place to its left		Explain that the three digits of a three-digit number represent amounts of hundreds, tens and ones		Round whole numbers to the nearest 10 or 100		Explain that the two digits of a two-digit number represent amounts of tens and ones		Explain that the numbers 11-19 are composed of ten ones and one, two, three, four, five, six, seven, eight or nine ones.		Explain that the numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five six, seven, eight, or nine tens (and 0 ones), and 100, 200, 300, etc. refer to one, two, three, etc. hundreds		Multiply one-digit whole numbers by multiples of 10 in the range 10-90		
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	<p><b><i>Number and Operations - Fractions</i></b></p> <p>Develop understanding of fractions as numbers</p> <p>Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers</p> <p><b><i>Measurement and Data</i></b></p> <p><b>Measurement</b></p> <p>Solve problems involving measurement and estimation</p>	<p style="text-align: center;"><b>Introduced Skills</b></p> <table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td>Represent a fraction as a number on the number line</td> </tr> <tr> <td></td> <td>Compare fractions by using symbols of &lt;, &gt;, or =</td> </tr> </table> <p style="text-align: center;"><b>Reviewed Skills</b></p> <table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td>Explain a fraction <math>a/b</math> as the quantity formed by a parts of size <math>1/b</math> (i.e. <math>2/3</math> is equal to 2 parts of <math>1/3</math>)</td> </tr> <tr> <td></td> <td>Explain, represent and generate equivalent fractions</td> </tr> </table> <p style="text-align: center;"><b>Mastered Skills</b></p> <table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td>Explain a fraction <math>1/b</math> as the quantity formed by 1 part when a whole is partitioned into <math>b</math> equal parts (i.e. <math>1/3</math>)</td> </tr> </table> <p style="text-align: center;"><b>Reviewed Skills</b></p> <table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td>Explain addition and subtraction of fractions as joining and separating parts referring to the same whole</td> </tr> <tr> <td></td> <td>Breakdown a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation</td> </tr> </table> <p style="text-align: center;"><b>Reviewed Skills</b></p> <table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td>Describe several measurable attributes of objects (i.e. length, weight, temperature)</td> </tr> </table> <p style="text-align: center;"><b>Mastered Skills</b></p> <table border="1" style="width: 100%;"> <tr> <td style="width: 20px;"></td> <td>Compare the length of two objects indirectly by using a third object</td> </tr> <tr> <td></td> <td>Express the length of an object as a whole number of length units by laying multiple copies of a shorter object end to end</td> </tr> <tr> <td></td> <td>Explain that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps</td> </tr> <tr> <td></td> <td>Compare two objects with a measurable attribute in common</td> </tr> </table>		Represent a fraction as a number on the number line		Compare fractions by using symbols of <, >, or =		Explain a fraction $a/b$ as the quantity formed by a parts of size $1/b$ (i.e. $2/3$ is equal to 2 parts of $1/3$ )		Explain, represent and generate equivalent fractions		Explain a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into $b$ equal parts (i.e. $1/3$ )		Explain addition and subtraction of fractions as joining and separating parts referring to the same whole		Breakdown a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation		Describe several measurable attributes of objects (i.e. length, weight, temperature)		Compare the length of two objects indirectly by using a third object		Express the length of an object as a whole number of length units by laying multiple copies of a shorter object end to end		Explain that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps		Compare two objects with a measurable attribute in common		
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	<p><b>Measurement and Data</b></p> <p><b>Geometric Measurement</b></p> <p>Understand concepts of area and relate area to multiplication and to addition</p> <p>Recognize perimeter as an attribute of plane figures and distinguish between linear and area measures</p> <p><b>Geometry</b></p> <p>Reason with shapes and their attributes</p>	<p style="text-align: center;"><b>Introduced Skills</b></p> <table border="1" style="width: 100%;"> <tr><td style="width: 20px;"></td><td>Solve real-world problems involving perimeters of polygons</td></tr> <tr><td></td><td>Recognize areas as an attribute of plane figures</td></tr> <tr><td></td><td>Relate area to the operations of multiplication and addition</td></tr> <tr><td></td><td>Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world problems</td></tr> <tr><td></td><td>Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths <math>a</math> and <math>b+c</math> is the sum of <math>a \times b</math> and <math>a \times c</math></td></tr> </table> <p style="text-align: center;"><b>Reviewed Skills</b></p> <table border="1" style="width: 100%;"> <tr><td style="width: 20px;"></td><td>Explain concepts of area measurement</td></tr> <tr><td></td><td>Measure areas by counting unit squares (i.e. square cm, square m,</td></tr> <tr><td></td><td>Find the area of a rectangle with whole-number side lengths by tiling</td></tr> <tr><td></td><td>Recognize area as additive</td></tr> </table> <p style="text-align: center;"><b>Reviewed Skills</b></p> <table border="1" style="width: 100%;"> <tr><td style="width: 20px;"></td><td>Identify quadrilaterals and pentagons</td></tr> <tr><td></td><td>Recognize rhombuses, rectangles and square as quadrilaterals</td></tr> <tr><td></td><td>Identify shapes as three-dimensional</td></tr> </table> <p style="text-align: center;"><b>Mastered Skills</b></p> <table border="1" style="width: 100%;"> <tr><td style="width: 20px;"></td><td>Correctly name shapes regardless of orientation or size (square, circle, triangle, rectangle, hexagon, cube, cone, cylinder, sphere)</td></tr> <tr><td></td><td>Identify shapes as two-dimensional</td></tr> </table> <p style="text-align: center;"><b>Introduced Skills</b></p> <table border="1" style="width: 100%;"> <tr><td style="width: 20px;"></td><td>Show understanding that shapes in different categories (i.e. rhombus and rectangle) may share attributes (i.e. four sides) and that the shared attributes can define a larger category (i.e. quadrilaterals)</td></tr> <tr><td></td><td>Express the area of the parts of a whole shape as unit fractions</td></tr> </table>		Solve real-world problems involving perimeters of polygons		Recognize areas as an attribute of plane figures		Relate area to the operations of multiplication and addition		Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world problems		Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths $a$ and $b+c$ is the sum of $a \times b$ and $a \times c$		Explain concepts of area measurement		Measure areas by counting unit squares (i.e. square cm, square m,		Find the area of a rectangle with whole-number side lengths by tiling		Recognize area as additive		Identify quadrilaterals and pentagons		Recognize rhombuses, rectangles and square as quadrilaterals		Identify shapes as three-dimensional		Correctly name shapes regardless of orientation or size (square, circle, triangle, rectangle, hexagon, cube, cone, cylinder, sphere)		Identify shapes as two-dimensional		Show understanding that shapes in different categories (i.e. rhombus and rectangle) may share attributes (i.e. four sides) and that the shared attributes can define a larger category (i.e. quadrilaterals)		Express the area of the parts of a whole shape as unit fractions		
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