

<p style="text-align: center;">Domain: Operations and Algebraic Thinking Emphasis: Problem solving with multiples and factors</p>	<p style="text-align: center;">Fourth Grade</p>
<p>Key: ■ Major Clusters; ■ Supporting Clusters; ● Additional Clusters</p> <p>Major Cluster (green): Use the four operations with whole numbers to solve problems.</p>	
<p>Common Core State Standards for Mathematical Content</p> <p>Operations and Algebraic Thinking – 4.OA</p> <p>B. Gain familiarity with factors and multiples.</p> <p><u>4.OA.B.4</u> Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.</p> <p>C. Generalize and analyze patterns</p> <p><u>4.OA.C.5</u> Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. <i>For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.</i></p> <p>No Gaps in PASS</p>	<p>Academic Vocabulary:</p> <p><u>4.OA.B.4</u> Composite, digit, factor, factor pair, multiple, prime, range, whole number.</p> <p><u>4.OA.C.5</u> Features, number pattern, shape pattern, rule</p> <p>Mathematical Practices</p> <p>3. Construct viable arguments and critique the reasoning of others.</p> <p>7. Look for and make use of structure.</p>
<p>CLARIFICATIONS from evidence tables from PARCC:</p> <p><u>4.OA.B.4</u> None</p> <p><u>4.OA.C.5</u> Tasks do not require students to determine the rule. Rule is given. 75% of patterns should be number patterns.</p>	
<p>Comments:</p>	

Teacher Notes

SPED Notes

Assessment Ideas (work in progress to be added)

<p align="center">Domain: Number and Operations in Base Ten Emphasis: Multiplication and Division Strategies with Larger Numbers</p>	<p>Fourth Grade</p>
<p>Major Cluster (green): Generalize place value understanding for multi-digit whole numbers</p>	
<p>Common Core State Standards for Mathematical Content</p> <p>Operations and Algebraic Thinking – 4.OA</p> <p>A. Use the four operations with whole numbers to solve problems. <u>4.OA.A.3</u> Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</p> <p>Number and Operations in Base Ten²—4.NBT</p> <p>B. Use place value understanding and properties of operations to perform multi-digit arithmetic <u>4.NBT.B.5</u> Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. <i>PASS GAP: 3 digit by 3 digit(PASS 2a)</i> <u>4.NBT.B.6</u> Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. <i>PASS GAP: Estimate (PASS 2bii)</i></p> <p>Measurement and Data --- 4.MD</p> <p>A. Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. <u>4.MD.A.3</u> Apply the area and perimeter formulas for rectangles in real world and mathematical problems.</p>	<p>Academic Vocabulary:</p> <p><u>4.OA.A.3</u> addition, estimation, mental, reasonableness, remainder, subtraction</p> <p><u>4.NBT.B.5</u> area model, associative and commutative property of multiplication, distributive property, properties of operations, rectangular array</p> <p><u>4.NBT.B.6</u> dividend</p> <p><u>4.MD.A.3</u> area, length, perimeter, rectangle, width</p> <p>Mathematical Practices</p> <ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively 8. Look for and express regularity and repeated reasoning.
<p>CLARIFICATIONS from evidence tables from PARCC:</p> <p><u>4.OA.A.3</u> no interpreting of remainders</p> <p><u>4.NBT.B.5</u> and <u>4.NBT.B.6</u> tasks do not have context (no word problems) and explanations are not assessed here.</p> <p><u>4.MD.A.3</u> None</p>	
<p>Comments:</p>	

Teacher Notes

SPED Notes

Assessment Ideas (work in progress to be added)

<p align="center">Domain: Numbers and Operations-Fractions Emphasis: Decomposing and composing fractions for addition and subtraction</p>	<p>Fourth Grade</p>
<p>Major Cluster (green): Build Fractions by applying and extending previous understandings of operations on whole numbers.</p>	
<p>Common Core State Standards for Mathematical Content</p> <p>Number and Operations – Fractions – 4.NF</p> <p>B. Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.</p> <p>4.NF.B.3a Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.</p> <p>4.NF.B.3b Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model.</p> <p>No Gaps in PASS</p>	<p>Academic Vocabulary:</p> <p>4.NF.B.3a addition, associative and communicative property of addition, decompose, difference, like denominator, mixed number, properties of operations, sum, unit fraction</p> <p>4.NF.B.3b same as above</p> <p>Mathematical Practices</p> <p>4. Model with mathematics.</p>
<p>CLARIFICATIONS from evidence tables from PARCC:</p> <p>4.NF.B.3a Tasks limited to denominators of 2, 3, 4, 5, 6, 8, 10, 12, 100</p> <p>4.NF.B.3b Only answer is required, no representations.</p>	
<p>Comments:</p>	

Teacher Notes

SPED Notes

Assessment Ideas (work in progress to be added)

<p align="center">Domain: Number and Operations Base Ten Emphasis: Applying place value concepts to whole number addition and subtraction.</p>	<p>Fourth Grade</p>
<p>Major Cluster (green): Generalize place value understanding for multi-digit whole numbers. Major Cluster (green): Use place value understanding and properties of operations to perform multi-digit arithmetic .</p>	
<p>Common Core State Standards for Mathematical Content</p> <p>Number and Operations – Base Ten 4. NBT</p> <p>A. Generalize place value understanding for multi-digit whole numbers. <u>4.NBT.A.1</u> Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division. PASS Gap: through 6 digits (PASS 1ai) <u>4. NBT.A.2</u> Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons. <u>4.NBT.A.3</u> Use place value understanding to round multi-digit whole numbers to any place.</p> <p>B. Use place value understanding and properties of operations to perform multi-digit arithmetic. <u>4.NBT.B.4</u> Fluently add and subtract multi-digit whole numbers using the standard algorithm. PASS GAP: basic multiplication and division facts up to 144/12 (PASS 2bi)</p>	<p>Academic Vocabulary:</p> <p><u>4.NBT.A.1</u> place value <u>4. NBT.A.2</u> equal to, expanded form, greater than, less than, numeral <u>4.NBT.A.3</u> round <u>4.NBT.B.4</u> standard algorithm</p> <hr/> <p>Mathematical Practices</p> <p>6. Attend to precision. 8. Look for and express regularity in repeated reasoning.</p>
<p>CLARIFICATIONS from evidence tables from PARCC:</p> <p><u>4.NBT.A.1</u> none <u>4. NBT.A.2</u> tasks assess conceptual understanding with mixture of expanded form, number names and base ten numerals. <u>4.NBT.A.3</u> limited to whole numbers less than or equal to 1,000,000 <u>4.NBT.B.4</u> addends require algorithm and no obvious mental strategies. For the purpose of assessment both given numbers should have four digits</p>	
<p>Comments:</p>	

Teacher Notes

SPED Notes

Assessment Ideas (work in progress to be added)

<p style="text-align: center;">Domain: Number and Operations Fractions</p> <p style="text-align: center;">Emphasis: Understanding fractions equivalence and comparison</p>	<p>Fourth Grade</p>
<p>Major Cluster (green): Extend understanding fractions equivalence and comparison.</p>	
<p>Common Core State Standards for Mathematical Content</p> <p>A. Extend understanding of fraction equivalence and ordering.</p> <p style="padding-left: 40px;"><u>4.NF.A.1</u> Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.</p> <p style="padding-left: 40px;"><u>4.NF.A.2</u> Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $1/2$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.</p> <p>No PASS Gaps</p>	<p>Academic Vocabulary:</p> <p><u>4.NF.A.1</u> equivalent, fraction, order</p> <p><u>4.NF.A.2</u> common denominator, common numerator, denominator, fraction model, numerator, whole</p> <hr/> <p>Mathematical Practices</p> <p>3. Construct viable arguments and critique the reasoning of others.</p> <p>5. Use appropriate tools strategically.</p>
<p>CLARIFICATIONS from evidence tables from PARCC:</p> <p>4.NF.A.1 – explanation aspect not assessed, tasks limited to denominators (2,3, 4, 5, 6, 8, 10, 12 , and 100) tasks may include fractions that equal whole numbers.</p> <p>4.NF.A.2- only the answers is required , tasks require students to choose the comparison strategy autonomously (independently), tasks limited to denominators (2,3, 4, 5, 6, 8, 10, 12, and 100) tasks may include fractions that equal whole numbers.</p>	
<p>Comments:</p>	

Teacher Notes

SPED Notes

Assessment Ideas (work in progress to be added)

<p align="center">Domain: Measurement and Data Emphasis: Introducing measurement conversions</p>	<p>Fourth Grade</p>
<p>Major Cluster (green): None Supporting Cluster (blue): Solve Problems involving measurements from a larger unit to a smaller unit.</p>	
<p>Common Core State Standards for Mathematical Content</p> <p>Operations and Algebraic Thinking - 4.OA</p> <p>A. Use the four operations with whole numbers to solve problems. <u>4.OA.A.1</u> Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations. No Gaps in PASS</p> <p>Number and Operations in Base Ten - 4.NBT</p> <p>A. Generalize place value understanding for multi-digit whole numbers. <u>4.NBT.A.1</u> Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division. No Gaps in PASS</p> <p>Measurement and Data - 4.MD</p> <p>A. Solve problems involving measurement and conversions of measurements from a larger unit to a smaller unit. <u>4.MD.A.1</u> Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table No Gaps in PASS</p>	<p>Academic Vocabulary:</p> <p><u>4.OA.A.1</u> compare, comparison, equation, equation, interpret, multiplication, product, solve <u>4.NBT.A.1</u> place value <u>4.MD.A.1</u> centimeter, conversion of measurements, gram, hour, kilogram, kilometer, liter, measurement, meter, milliliter, minute, ounce</p> <p>Mathematical Practices</p> <p>2. Reason abstractly and quantitatively. 6. Attend to precision 7. Look for and make use of structure.</p>
<p>CLARIFICATIONS from evidence tables from PARCC:</p> <p><u>4.OA.A.1</u> Tasks are given thin or no context. (Does not include word problems.) <u>4.NBT.A.1</u> None <u>4.MD.A.1</u> None</p>	
<p>Comments:</p>	

Teacher Notes

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Assessment Ideas (work in progress to be added)

<p align="center">Domain: Operations and Algebraic Thinking Emphasis: Solving Problems using multiplicative comparisons</p>	<p>Fourth Grade</p>
<p>Major Cluster (green): Use the four operations with whole numbers to solve problems.</p>	
<p>Common Core State Standards for Mathematical Content</p> <p>Operations and Algebraic Thinking - 4.OA</p> <p>A. Use the four operations with whole numbers to solve problems. <u>4.OA.A.2</u> Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.</p> <p>No PASS GAPS</p> <p>Number and Operations in Base Ten - 4.NBT</p> <p>A. Generalize place value understanding for multi-digit whole numbers. <u>4.NBT.A.3</u> Use place value understanding to round multi-digit whole numbers to any place.</p> <p>No PASS GAPS</p> <p>Measurement and Data - 4.MD</p> <p>A. Solve problems involving measurement and conversions of measurements from a larger unit to a smaller unit. <u>4.MD.A.2</u> Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.</p> <p>No PASS GAPS</p>	<p>Academic Vocabulary:</p> <p><u>4.OA.A.2</u> division, quotient, represent, symbol, unknown</p> <p><u>4.NBT.A.3</u> round</p> <p><u>4.MD.A.2</u> distance, intervals of time, liquid volume, mass, measurement scale, money, number line</p> <hr/> <p>Mathematical Practices</p> <p>1. Make sense of problems and persevere in solving them.</p>
<p>CLARIFICATIONS from evidence tables from PARCC:</p> <p><u>4.OA.A.2</u> Tasks given thin or no context. (Does not include word problems.)</p> <p><u>4.NBT.A.3</u> Limited to whole numbers less than or equal to 1,000,000</p> <p><u>4.MD.A.2</u> Situations involve whole number measurements and require expressing measurements given in a larger unit in terms of a smaller unit, tasks may include measuring to the nearest cm or mm.</p>	
<p>Comments:</p>	

Teacher Notes

SPED Notes

Assessment Ideas (work in progress to be added)

<p style="text-align: center;">Domain: Measurement and Data</p> <p style="text-align: center;">Emphasis: Solving measurement problems using all four operations</p>	<p>Fourth Grade</p>
<p>Major Cluster (green): Use the four operations with whole numbers to solve problems.</p>	
<p>Common Core State Standards for Mathematical Content</p> <p>Operations and Algebraic Thinking - 4.OA</p> <p>A. Use the four operations with whole numbers to solve problems. <u>4.OA.A.3</u> Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</p> <p>No PASS GAPS</p> <p>Number and Operations in Base Ten - 4.NBT</p> <p>B. Use place value understanding and properties of operations to perform multi-digit arithmetic. <u>4.NBT.B.4</u> Fluently add and subtract multi-digit whole numbers using the standard algorithm. PASS Gap: basic multiplication and division up to 144/12 (PASS 2bi)</p> <p>Measurement and Data - 4.MD</p> <p>A. Solve problems involving measurement and conversions of measurements from a larger unit to a smaller unit. <u>4.MD.A.2</u> Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. PASS Gap: Temperature (4.2 b)</p>	<p>Academic Vocabulary:</p> <p><u>4.OA.A.3</u> addition, estimation, mental, reasonableness, remainder, subtraction</p> <p><u>4.NBT.B.4</u> standard algorithm</p> <p><u>4.MD.A.2</u> distance, intervals of time, liquid volume, mass, measurement scale, money, number line</p> <p>Mathematical Practices</p> <ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 6. Attend to precision.
<p>CLARIFICATIONS from evidence tables from PARCC:</p> <p><u>4.OA.A.3</u> Tasks do involve interpreting remainders, assessing reasonableness is NOT assessed. Example given page 30 of progressions for OA</p> <p><u>4.NBT.B.4</u> Tasks require an algorithm, not mental strategies. Tasks do not have context (no word problems), limited to whole numbers less than or equal to 1,000,000, both given numbers should have four digits</p> <p><u>4.MD.A.2</u> Situations involve whole number measurements and require expressing measurements given in a larger unit in terms of a smaller unit, tasks may include measuring to the nearest cm or mm.</p>	
<p>Comments:</p>	

Teacher Notes

SPED Notes

Assessment Ideas (work in progress to be added)

<p align="center">Domain: Number and Operations Fractions</p> <p align="center">Emphasis: Solving addition and subtraction word problems involving fractions and mixed numbers.</p>	<p>Fourth Grade</p>
<p>Major Cluster (green): Build fractions from unit fractions by applying and extending previous understandings of operations of whole numbers.</p>	
<p>Common Core State Standards for Mathematical Content</p> <p>Number and Operations Fractions - 4.NF</p> <p>B. Build fractions from unit fractions by applying and extending previous understandings of operations of whole numbers.</p> <p><u>4.NF.B.3c</u> Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.</p> <p><u>4.NF.B.3d</u> Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.</p> <p><i>No PASS gaps</i></p> <p>Measurement and Data - 4.MD</p> <p>B. Represent and interpret data</p> <p><u>4.MD.B.4</u> Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots</p> <p><i>No PASS gaps</i></p>	<p>Academic Vocabulary:</p> <p><u>4.NF.B.3c</u> addition, associative and commutative property of addition, decompose, difference, like denominator, mixed number, properties of operations, sum, unit fraction</p> <p><u>4.NF.B.3d</u> addition, associative and communicative property of addition, decompose, difference, like denominator, mixed number, properties of operations, sum, unit fraction</p> <p><u>4.MD.B.4</u> data, set, line plot</p> <hr/> <p>Mathematical Practices</p> <p>2. Reason abstractly and quantitatively.</p> <p>4. Model with mathematics.</p>
<p>CLARIFICATIONS from evidence tables from PARCC:</p> <p><u>4.NF.B.3c</u> tasks have no context (no word problems), denominators limited to (2, 3, 4, 6, 8)</p> <p><u>4.NF.B.3d</u> denominators limited to (2, 3, 4, 6, 8, 10, 12, 100), check table 2, page 9 of progressions (the dark and medium shaded cells)</p> <p><u>4.MD.B.4</u> None</p>	
<p>Comments:</p>	

Teacher Notes

SPED Notes

Assessment Ideas (work in progress to be added)

<p style="text-align: center;">Domains: Measurement and Data Emphasis: Angle Measurements</p>	<p style="text-align: center;">Fourth Grade</p>
<p>Major Cluster (green):None Supporting Clusters (blue): None Additional Clusters (yellow): Geometric measurement: understanding concepts of angle and measure angles.</p>	
<p>Common Core State Standards for Mathematical Content Measurement and Data - 4.MD</p> <p>C. Geometric measurement: understand concepts of angle and measure angles.</p> <p>4.MD.C.5 Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement. <i>PASS Gap: Add compare angles to 90 degrees (<,>,-) PASS 3.2</i></p> <p>4.MD.C.5a An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a “one-degree angle,” and can be used to measure angles.</p> <p>4.MD.C.5b An angle that turns through one-degree angles is said to have an angle measure of n degrees.</p> <p>4.MD.C.6 Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.</p> <p>Geometry – 4.G</p> <p>4.G.A.1 Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures. <i>PASS Gap: include transformations (3.4)</i></p>	<p>Academic Vocabulary:</p> <p>4.MD.C.5 angle, arc, circle, degree endpoint, intersect, point, ray, shape</p> <p>4.MD.C.5a angle, arc, circle, degree endpoint, intersect, point, ray, shape</p> <p>4.MD.C.5b angle, arc, circle, degree endpoint, intersect, point, ray, shape</p> <p>4.MD.C.6 protractor</p> <p>4.G.A.1 acute angle, line, line segment, obtuse angle, parallel lines, perpendicular lines, point, right angle, two-dimensional figure</p> <p>Mathematical Practices</p> <p>4. Model with Mathematics. 5. Use appropriate tools strategically.</p>
<p>CLARIFICATIONS from evidence tables from PARCC:</p> <p>4.MD.C.5 None 4.MD.C.6 None 4.G.A.1 None</p>	
<p>Comments:</p>	

Teacher Notes

SPED Notes

Assessment Ideas (work in progress to be added)

<p style="text-align: center;">Domain: Numbers and Operations - Fractions</p> <p style="text-align: center;">Emphasis: Multiplying fractions by whole numbers</p>	<p>Fourth Grade</p>
<p>Major Cluster (green):Build fractions by applying and extending previous understandings of operations on whole numbers.</p>	
<p>Common Core State Standards for Mathematical Content Operations and Algebraic Thinking – 4.OA</p> <p>A. Use the four operations with whole numbers to solve problems. <u>4.OA.A.1</u> Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations. No PASS Gaps</p> <p>Numbers and Operations - Fractions - 4.NF</p> <p>B. Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. <u>4.NF.B.4</u> Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. <u>4.NF.B.4a</u> Understand a fraction a/b as a multiple of $1/b$. <u>4.NF.B.4b</u> Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number. <u>4.NF.B.4c</u> Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. No PASS Gaps</p>	<p>Academic Vocabulary:</p> <p><u>4.OA.A.1</u> compare, comparison, equation, interpret, multiplication, product, solve</p> <p><u>4.NF.B.4</u> fraction</p> <p><u>4.NF.B.4a</u> multiple</p> <p><u>4.NF.B.4b</u> multiple</p> <p><u>4.NF.B.4c</u> word problems, multiplication, fraction, whole number</p> <p>Mathematical Practices</p> <ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 6. Attend to precision.
<p>CLARIFICATIONS from evidence tables from PARCC:</p> <p><u>4.OA.A.1</u> Thin or no context given. (Does not include word problems.)</p> <p><u>4.NF.B.4</u></p> <p><u>4.NF.B.4a</u> limited to denominators of (2, 3, 4, 5, 6, 8, 10, 12, and 100)</p> <p><u>4.NF.B.4b</u> do not have context, (Does not include word problems.) do not provide visual fraction models, express a multiple of a/b as a fraction, can equal fractions greater than one, limited to denominators of (2, 3, 4, 5, 6, 8, 10, 12, and 100),</p> <p><u>4.NF.B.4c</u> do not provide visual models, do not provide visual fraction models, express a multiple of a/b as a fraction, can equal fractions greater than one, limited to denominators of (2, 3, 4, 5, 6, 8, 10, 12, and 100), situations are limited to those in which the product is unknown (including unknown factors)</p>	
<p>Comments:</p>	

Teacher Notes

SPED Notes

Assessment Ideas (work in progress to be added)

<p style="text-align: center;">Domain: Number and Operations- Fractions</p> <p style="text-align: center;">Emphasis: Comparing decimal fractions and understanding notation</p>	<p style="text-align: center;">Fourth Grade</p>
<p>Major Cluster (green): Understand decimal notations for fractions and compare decimal fractions.</p>	
<p>Common Core State Standards for Mathematical Content</p> <p>Number and Operations- Fractions- 4.NF</p> <p>C. Understand decimal notation for fractions, and compare decimal fractions.</p> <p><u>4.NF.C.5</u> Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100</p> <p>No PASS GAP</p> <p><u>4.NF.C.6</u> Use decimal notation for fractions with denominators 10 or 100.</p> <p>PASS GAP: ADD Percents (1bii)</p> <p><u>4.NF.C.7</u> Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual model.</p> <p>No PASS GAP</p> <p>Measurement and Data - 4.MD</p> <p>A. Solve problems involving measurement and conversions of measurements from a larger unit to a smaller unit.</p> <p><u>4.MD.A.2</u> Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.</p> <p>No PASS GAP</p>	<p>Academic Vocabulary:</p> <p><u>4.NF.C.5</u></p> <p><u>4.NF.C.6</u> decimal, decimal notation, hundredths, tenths</p> <p><u>4.NF.C.7</u></p> <p><u>4.MD.A.2</u> distance, intervals of time, liquid volume, mass, measurement scale, money, number line</p> <hr/> <p>Mathematical Practices</p> <p>3. Construct viable arguments and critique the reasoning of others.</p> <p>7. Look for and make use of structure.</p>
<p>CLARIFICATIONS from evidence tables from PARCC:</p> <p><u>4.NF.C.5</u> Tasks do not have context (No word problems)</p> <p><u>4.NF.C.6</u> measuring to the nearest mm or cm is equivalent to measuring on the number line.</p> <p><u>4.NF.C.7</u> tasks have thin or no context, (Does not include word problems.) justifying is not assessed here, prompts do not provide visual fractions, students may draw visual fraction models.</p> <p><u>4.MD.A.2</u> situations involve whole number measurements require expressing measurements given in a larger unit to a smaller unit., tasks do not have a context, Measuring to the nearest mm or cm is equivalent to measuring on the number line.</p>	
<p>Comments:</p>	

Teacher Notes

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Assessment Ideas (work in progress to be added)

<p style="text-align: center;">Domain: Geometry</p> <p style="text-align: center;">Emphasis: Recognizing and analyzing attributes of 2-dimensional shapes</p>	<p>Fourth Grade</p>
<p>Major Cluster (green): none Supporting Cluster (blue): none Additional cluster (yellow): Generate and analyze patterns, geometric measurement: understand concepts of angle and measure angles.</p>	
<p>Common Core State Standards for Mathematical Content</p> <p>Operations and Algebraic Thinking-4.OA</p> <p>C. Generate and analyze patterns. <u>4.OA.C.5</u> Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way. <i>PASS GAP: using tables, graphs and verbal models (PASS 1.1)</i></p> <p>Measurement and Date- 4.MD</p> <p>C. Geometric Measurement: understand concepts of angles and measure angles. <u>4.MD.C.7</u> Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.</p> <p>Geometry-4.G</p> <p>A. Draw and identify lines and angles, and classify shapes by properties of their lines and angles. <u>4.G.A.1</u> Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures. <u>4.G.A.2</u> Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles. <u>4.G.A.3</u> Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.</p>	<p>Academic Vocabulary:</p> <p><u>4.OA.C.5</u> features, number pattern, shape pattern, rule <u>4.MD.C.7</u> <u>4.G.A.1</u> acute angle, line, line segment, obtuse angle, parallel lines, perpendicular lines, point, right angle, two-dimensional figure <u>4.G.A.2</u> category, classify <u>4.G.A.3</u> line of symmetry, line-symmetric figure</p> <p>Mathematical Practices</p> <p>3. Construct viable arguments and critique the reasoning of others. 5. Use appropriate tools strategically. 7. Look for and make use of structure.</p>
<p>CLARIFICATIONS from evidence tables from PARCC:</p> <p><u>4.OA.C.5</u> do not require students to determine a rule-rule given <u>4.MD.C.7</u> and <u>4.G.A.1</u> and <u>4.G.A.3</u>None <u>4.G.A.2</u> trapexoid defind as “A quadrilateral with at least one pair of parallel lines.”</p>	
<p>Comments:</p>	

Teacher Notes

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Assessment Ideas (work in progress to be added)

<p style="text-align: center;">Domain: Operations and Algebraic Thinking and Number and Operation NBT</p> <p style="text-align: center;">Emphasis: Problem solving with whole numbers</p>	Fourth Grade
<p>Major Cluster (green): Use the four operations with whole numbers to solve problems.</p> <p>Major Cluster (green): Use place values understanding and properties of operations to perform multi-digit arithmetic.</p>	
<p>Common Core State Standards for Mathematical Content Operations and Algebraic Thinking-4.OA</p> <p>A. Use the four operations with whole numbers to solve problems.</p> <p><u>4.OA.A.2</u> Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.</p> <p><u>4.OA.A.3</u> Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</p> <p>Number and Operations in Base Ten – 4 NBT</p> <p>B. Use place value understanding and properties of operations to perform multi-digit arithmetic.</p> <p><u>4.NBT.B.4</u> Fluently add and subtract multi-digit whole numbers using the standard algorithm. <i>PASS GAP: add basic multiplication and division up to 144/12 PASS 2bi</i></p> <p><u>4.NBT.B.5</u> Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. <i>PASS Gap: 3 digit by 3 digit and estimation PASS 2a</i></p> <p><u>4.NBT.B.6</u> Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. <i>PASS Gap: Estimate PASS2bii</i></p>	<p>Academic Vocabulary:</p> <p><u>4.OA.A.2</u> division, quotient, represent, symbol, unknown</p> <p><u>4.OA.A.3</u> addition, estimation, mental, reasonableness, remainder, subtraction</p> <p><u>4.NBT.B.4</u> standard algorithm</p> <p><u>4.NBT.B.5</u> area model, associative and commutative property of multiplication, distributive property, properties of operations, rectangular array</p> <p><u>4.NBT.B.6</u> dividend</p> <p>Mathematical Practices</p> <ol style="list-style-type: none"> 1. Reason abstractly and quantitatively. 8. Look for and express regularity in repeated reasoning.
<p>CLARIFICATIONS from evidence tables from PARCC:</p> <p><u>4.OA.A.2</u> See progressions page 29 and Table 3 on page 23, tasks sample equally the situations in the 3rd row of table 2 page 89 of CCSS</p> <p><u>4.OA.A.3</u> Reasonableness of answers is not assessed here, tasks involve interpreting reminders, see page 30 of progressions.</p> <p><u>4.NBT.B.4</u> addends require efficient/standard algorithm, do not have context, limited to whole numbers less than or equal to 1,000,000, both numbers should have four digits.</p> <p><u>4.NBT.B.5</u> and <u>4.NBT.B.6</u> Tasks do not have context, illustrative part is not assessed here.</p>	

Teacher Notes

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Assessment Ideas (work in progress to be added)

Domain: Not Represented in CCSS PASS Standard 5 Data Analysis	Fourth Grade
This will be removed once CCSS is in full implementation AND TESTED	
<p>PASS Standard 5 Data Analysis</p> <p><u>Data Analysis:</u> Read and interpret data displays Collect, organize and record data in tables and graphs</p> <p><u>Probability:</u> Certain, equally likely, and impossible</p> <p><u>Central Tendency:</u> Median and Mode</p>	

Teacher Notes

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Assessment Ideas (work in progress to be added)