

## Grade 4 EOY

Per the PARCC Calculator Policy, PARCC mathematics assessments for Grades 3 – 5 will not allow for calculator usage.

Evidence Statement Key	Evidence Statement Text	Clarifications	MP
4.OA.1-1	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.	i) Tasks have “thin context” or no context.	2, 4
4.OA.1-2	Represent verbal statements of multiplicative comparisons as multiplication equations.	i) Tasks have “thin context” or no context.	2, 4
4.OA.2	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.	i) See the <a href="#">Progression for Operations and Algebraic Thinking</a> , especially p. 29 and Table 3 on p. 23. ii) Tasks sample equally the situations in the third row of Table 2, p. 89 of <a href="#">CCSS</a> .	1, 4, 5
4.OA.3-1	Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations.	i) Assessing reasonableness of answer is not assessed here. ii) Tasks do not involve interpreting remainders.	1, 2, 7
4.OA.3-2	Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, in which remainders must be interpreted.	i) Assessing reasonableness of answer is not assessed here. ii) Tasks involve interpreting reminders. iii) See page 30 of the <a href="#">Progression for Operations and Algebraic Thinking</a> .	1, 2, 7
4.OA.4-1	Find all factor pairs for a whole number in the range 1–100.	None	7
4.OA.4-2	Recognize that a whole number is a multiple of each of its factors.	None	2
4.OA.4-3	Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number.	None	8
4.OA.4-4	Determine whether a given whole number in the range 1–100 is prime or composite	None	7, 8
4.OA.5	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>	i) Tasks do not require students to determine a rule; the rule is given. ii) 75% of patterns should be number patterns.	8

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Evidence Statement Key	Evidence Statement Text	Clarifications	MP
4.NBT.1	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.	None	7
4.NBT.2	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.	i) Tasks assess conceptual understanding, e.g. by including a mixture (both within and between items) of expanded form, number names, and base ten numerals.	7
4.NBT.3	Use place value understanding to round multi-digit whole numbers to any place.	i) Grade 4 expectations are limited to whole numbers less than or equal to 1,000,000 ( <a href="#">CCSS</a> footnote, p. 29).	7
4.NBT.4-1	Fluently add multi-digit whole numbers using the standard algorithm.	The given addends are such as to require an efficient/standard algorithm (e.g., $7263 + 4875$ ). Addends in the task do not suggest any obvious ad hoc or mental strategy (as would be present for example in a case such as $16,999 + 3,501$ ).  i) Tasks do not have a context. ii) Grade 4 expectations in <a href="#">CCSS</a> are limited to whole numbers less than or equal to 1,000,000; for purposes of assessment, both of the given numbers should have 4 digits.	-
4.NBT.4-2	Fluently subtract multi-digit whole numbers using the standard algorithm.	The given subtrahend and minuend are such as to require an efficient/standard algorithm (e.g. $7263 - 4875$ or $7406 - 4637$ ). The subtrahend and minuend do not suggest any obvious ad hoc or mental strategy (as would be present for example in a case such as $7300 - 6301$ .).  i) Tasks do not have a context. ii) Grade 4 expectations in <a href="#">CCSS</a> are limited to whole numbers less than or equal to 1,000,000; for purposes of assessment, both of the given numbers should have 4 digits.	-

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Evidence Statement Key	Evidence Statement Text	Clarifications	MP
4.NBT.5-1	Multiply a whole number of three or four digits by a one-digit whole number using strategies based on place value and the properties of operations.	<ul style="list-style-type: none"> <li>i) Tasks do not have a context.</li> <li>ii) The illustrative/explain aspect of 4.NBT.5 is not assessed here.</li> </ul>	7
4.NBT.5-2	Multiply two two-digit numbers, using strategies based on place value and the properties of operations.	<ul style="list-style-type: none"> <li>i) Tasks do not have a context.</li> <li>ii) The illustrative/explain aspect of 4.NBT.6 is not assessed here.</li> </ul>	7
4.NBT.6-1	Find whole-number quotients and remainders with three-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division.	<ul style="list-style-type: none"> <li>i) Tasks do not have a context.</li> <li>ii) The illustrative/explain aspect of 4.NBT.6 is not assessed here.</li> </ul>	7, 8
4.NBT.6-2	Find whole-number quotients and remainders with 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.	<ul style="list-style-type: none"> <li>i) Tasks do not have a context.</li> <li>ii) The illustrative/explain aspect of 4.NBT.6 is not assessed here.</li> </ul>	7, 8
4.NBT.Int.1	Perform computations by applying conceptual understanding of place value, rather than by applying multi-digit algorithms.	<ul style="list-style-type: none"> <li>i) Tasks do not have a context.</li> <li>ii) See <a href="#">ITN Appendix E</a>, section A, “Illustrations of Innovative Task Characteristics,” subsection 4, “Integrative tasks with machine scoring of responses entered by computer interface.”</li> </ul>	1, 7
4.NF.1-2	Use the principle $\frac{a}{b} = \frac{n \times a}{n \times b}$ to recognize and generate equivalent fractions.	<ul style="list-style-type: none"> <li>The explanation aspect of 4.NF.1 is not assessed here. i) Tasks are limited to denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100 (<a href="#">CCSS</a> footnote, p. 30).</li> <li>ii) Tasks may include fractions that equal whole numbers.</li> </ul>	7
4.NF.2-1	Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or by comparing to a benchmark fraction such as $\frac{1}{2}$ . Record the results of comparisons with symbols $<$ , $=$ , or $>$ .	<ul style="list-style-type: none"> <li>i) Only the answer is required (methods, representation, justification, etc. are not assessed here).</li> <li>ii) Tasks require the student to choose the comparison strategy autonomously.</li> <li>iii) Tasks are limited to denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100. (<a href="#">CCSS</a> footnote, p. 30).</li> <li>iv) Tasks may include fractions that equal whole numbers.</li> </ul>	6, 7

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Evidence Statement Key	Evidence Statement Text	Clarifications	MP
4.NF.A.Int.1	Apply conceptual understanding of fraction equivalence and ordering to solve simple word problems requiring fraction comparison.	<ul style="list-style-type: none"> <li>i) Tasks have “thin context.”</li> <li>ii) Tasks do not require adding, subtracting, multiplying, or dividing fractions.</li> <li>iii) Prompts do not provide visual fraction models; students may at their discretion draw visual fraction models as a strategy.</li> <li>iv) Tasks are limited to denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100 (<a href="#">CCSS</a> footnote, p. 30).</li> </ul>	1, 4, 5
4.NF.3a	Understand a fraction $a/b$ with $a > 1$ as a sum of fractions $1/b$ . a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.	<ul style="list-style-type: none"> <li>i) Tasks are limited to denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100. (<a href="#">CCSS</a> footnote, p. 30).</li> </ul>	2, 7, 8
4.NF.3b-1	Understand a fraction $a/b$ with $a > 1$ as a sum of fractions $1/b$ . b. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Examples: $\frac{3}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$ ; $\frac{3}{8} = \frac{1}{8} + \frac{2}{8}$ ; $2\frac{1}{8} = 1 + 1 + \frac{1}{8} = \frac{8}{8} + \frac{8}{8} + \frac{1}{8}$ .	<ul style="list-style-type: none"> <li>i) Only the answer is required (methods, representation, etc. are not assessed here).</li> <li>ii) Tasks are limited to denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100. (<a href="#">CCSS</a> footnote, p. 30).</li> <li>iii) Tasks may include fractions that equal whole numbers.</li> </ul>	7, 8
4.NF.3c	Understand a fraction $a/b$ with $a > 1$ as a sum of fractions $1/b$ . c. 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.	<ul style="list-style-type: none"> <li>i) Tasks do not have a context.</li> <li>ii) Denominators are limited to grade 3 possibilities (2, 3, 4, 6, 8) so as to keep computational difficulty lower (<a href="#">CCSS</a> footnote, p. 24).</li> </ul>	7
4.NF.3d	Understand a fraction $a/b$ with $a > 1$ as a sum of fractions $1/b$ . d. 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.	<ul style="list-style-type: none"> <li>i) Tasks are limited to denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100 (<a href="#">CCSS</a> footnote, p. 30).</li> <li>ii) Addition and subtraction situations are limited to the dark- or medium-shaded types in Table 2, p. 9 of the <a href="#">Progression for Operations and Algebraic Thinking</a>; these situations are sampled equally.</li> <li>iii) Prompts do not provide visual fraction models; students may at their discretion draw visual fraction models as a strategy.</li> </ul>	1, 4, 5

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Evidence Statement Key	Evidence Statement Text	Clarifications	MP
4.NF.4a	<p>Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.</p> <p>a. Understand a fraction <math>a/b</math> as a multiple of <math>1/b</math>. For example, use a visual fraction model to represent <math>5/4</math> as the product <math>5 \times \frac{1}{4}</math>, recording the conclusion by the equation</p> $\frac{5}{4} = 5 \times \frac{1}{4}.$	i) Tasks are limited to denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100 ( <a href="#">CCSS</a> footnote, p. 30).	5, 7
4.NF.4b-1	<p>Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.</p> <p>b. Understand a multiple of <math>a/b</math> as a multiple of <math>1/b</math>. For example, use a visual fraction model to express <math>3 \times \frac{2}{5}</math> as</p> $6 \times \frac{1}{5}.$	<p>i) Tasks do not have a context.</p> <p>ii) Prompts do not provide visual fraction models; students may at their discretion draw visual fraction models as a strategy.</p> <p>iii) Tasks involve expressing a multiple of <math>a/b</math> as a fraction.</p> <p>iv) Results may equal fractions greater than 1 (including those equal to whole numbers).</p> <p>v) Tasks are limited to denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100 (<a href="#">CCSS</a> footnote, p. 30).</p>	7, 5
4.NF.4b-2	<p>Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.</p> <p>b. Use the understanding that a multiple of <math>a/b</math> is a multiple of <math>1/b</math> to multiply a fraction by a whole number. For example, use a visual fraction model to express <math>3 \times \frac{2}{5}</math> as <math>6/5</math>.</p> <p>(In general, <math>n \times \left(\frac{a}{b}\right) = \frac{n \times a}{b}</math>.)</p>	<p>i) Tasks do not have a context.</p> <p>ii) Prompts do not provide visual fraction models; students may at their discretion draw visual fraction models as a strategy.</p> <p>iii) Tasks involve expressing a multiple of <math>a/b</math> as a fraction.</p> <p>iv) Results may equal fractions greater than 1 (including fractions equal to whole numbers).</p> <p>v) Tasks are limited to denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100 (<a href="#">CCSS</a> footnote, p. 30).</p>	7, 5

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Evidence Statement Key	Evidence Statement Text	Clarifications	MP
4.NF.4c	Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. c. 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. <i>For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?</i>	<ul style="list-style-type: none"> <li>i) Prompts do not provide visual fraction models; students may at their discretion draw visual fraction models as a strategy.</li> <li>ii) Situations are limited to those in which the product is unknown (situations do not include those with an unknown factor).</li> <li>iii) Situations involve a whole number of fractional quantities, not a fraction of a whole-number quantity.</li> <li>iv) Results may equal fractions greater than 1 (including fractions equal to whole numbers).</li> <li>v) Tasks are limited to denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100 (<a href="#">CCSS</a> footnote, p. 30).</li> </ul>	1, 4, 5
4.NF.5	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. <i>For example, express 3/10 as 30/100, and add <math>\frac{3}{10} + \frac{4}{100} = \frac{34}{100}</math>.</i>	<ul style="list-style-type: none"> <li>i) Tasks do not have a context.</li> </ul>	7
4.NF.6	Use decimal notation for fractions with denominators 10 or 100. <i>For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.</i>	<ul style="list-style-type: none"> <li>i) Measuring to the nearest mm or cm is equivalent to measuring on the number line.</li> </ul>	7
4.NF.7	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.	<ul style="list-style-type: none"> <li>i) Tasks have “thin context” or no context.</li> <li>ii) Justifying conclusions is not assessed here.</li> <li>iii) Prompts do not provide visual fraction models; students may at their discretion draw visual fraction models as a strategy.</li> </ul>	7, 5
4.NF.Int.1	Solve one-step word problems requiring integration of knowledge and skills articulated in 4.NF.	<ul style="list-style-type: none"> <li>i) See <a href="#">ITN Appendix E</a>, section A, “Illustrations of Innovative Task Characteristics,” subsection 4, “Integrative tasks with machine scoring of responses entered by computer interface.”</li> <li>ii) Tasks are limited to denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100 (<a href="#">CCSS</a> footnote, p. 30).</li> </ul>	1, 4
4.NF.Int.2	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. <i>For example, express 3/10 as 30/100, and add <math>\frac{3}{10} + \frac{4}{100} = \frac{34}{100}</math>.</i>	<ul style="list-style-type: none"> <li>i) Tasks are one-step addition word problems of one of two kinds: Add To with result unknown, or Put Together with result unknown.</li> <li>ii) See Table 2, p. 9 of the <a href="#">Progression for Operations and Algebraic Thinking</a>; these situations are sampled equally.</li> </ul>	1

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Evidence Statement Key	Evidence Statement Text	Clarifications	MP
4.MD.1	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. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), and (3, 36),...	None	5, 8
4.MD.2-1	Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, in 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.	<ul style="list-style-type: none"> <li>i) Situations involve whole-number measurements and require expressing measurements given in a larger unit in terms of a smaller unit.</li> <li>ii) Tasks may present number line diagrams featuring a measurement scale.</li> <li>iii) Tasks may include measuring to the nearest cm or mm.</li> </ul>	4, 5
4.MD.2-2	Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, in problems involving simple fractions or decimals. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.	<ul style="list-style-type: none"> <li>i) Situations involve two measurements given in the same units, one a whole-number measurement and the other a non-whole-number measurement (given as a fraction or a decimal).</li> <li>ii) Tasks may present number line diagrams featuring a measurement scale.</li> <li>iii) Tasks may include measuring distances to the nearest cm or mm.</li> </ul>	4, 5
4.MD.3	Apply the area and perimeter formulas for rectangles in real world and mathematical problems. <i>For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.</i>	None	2, 5
4.MD.4-1	Make a line plot to display a data set of measurements in fractions of a unit ( $\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{1}{8}$ ).	None	5
4.MD.4-2	Solve problems involving addition and subtraction of fractions by using information presented in line plots. <i>For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.</i>	None	4, 5

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4.MD.5	<p>Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement.</p> <p>a. 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 <math>\frac{1}{360}</math> of a circle is called a "one-degree angle," and can be used to measure angles.</p> <p>b. An angle that turns through <math>n</math> one-degree angles is said to have an angle measure of <math>n</math> degrees.</p>	None	2
4.MD.6	<p>Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.</p>	None	2, 5
4.MD.7	<p>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>	None	1, 7
4.G.1	<p>Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.</p>	None	5
4.G.2	<p>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.</p>	i) A trapezoid is defined as "A quadrilateral with at least one pair of parallel sides."	7
4.G.3	<p>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>	None	-

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4.Int.1	Solve one-step word problems involving adding or subtracting two four-digit numbers.	<p>i) The given numbers are such as to require an efficient/standard algorithm (e.g., <math>7263 + 4875</math>, <math>7263 - 4875</math>, <math>7406 - 4637</math>). The given numbers do not suggest any obvious ad hoc or mental strategy (as would be present for example in a case such as <math>16,999 + 3,501</math> or <math>7300 - 6301</math>, for example).</p> <p>ii) Grade 4 expectations in <a href="#">CCSS</a> are limited to whole numbers less than or equal to 1,000,000; for purposes of assessment, both of the given numbers should be limited to 4 digits.</p>	1
4.Int.2	Solve one-step word problems involving multiplying two two-digit numbers.	i) The given numbers are such as to require a general strategy based on place value and the properties of operations (e.g., $63 \times 44$ ).	1, 7
4.Int.3	Solve one-step word problems involving multiplying a four-digit number by a one-digit number.	i) The given numbers are such as to require a general strategy based on place value and the properties of operations (e.g., $2392 \times 8$ ).	1, 7
4.Int.4	Solve one-step word problems involving dividing a four-digit number by a one-digit number	<p>i) The given numbers are such as to require a general strategy based on place value and the properties of operations (e.g., <math>2328 \div 8</math>).</p> <p>ii) Quotients are whole numbers (i.e., there are no remainders).</p>	1, 7
4.Int.5	Solve multi-step word problems posed with whole numbers and involving computations best performed by applying conceptual understanding of place value, perhaps involving rounding. See 4.OA.3, 4.NBT	None	1, 2, 7
4.Int.6	Solve real-world and mathematical problems about perimeter involving grade-level addition and subtraction of fractions, such as finding an unknown side of a rectangle. See 4.NF.3, 4.MD.3	i) Tasks are limited to denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100 ( <a href="#">CCSS</a> footnote, p. 30).	1, 2, 5
4.Int.7	Solve one-step word problems involving adding or subtracting two four-digit numbers.	i) The given numbers are such as to require an efficient/standard algorithm (e.g., $7263 + 4875$ , $7263 - 4875$ , $7406 - 4637$ . The given numbers do not suggest any obvious ad hoc or mental strategy (as would be present for example in a case such as $6,999 + 3,501$ or $7300 - 6301$ , for example).	-

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4.Int.8	Solve addition and subtraction word problems involving three four-digit addends, or two four-digit addends and a four-digit subtrahend.	i) The given numbers are such as to require an efficient/standard algorithm (e.g., $7263 + 4875$ , $7263 - 4875$ , $7406 - 4637$ . The given numbers do not suggest any obvious ad hoc or mental strategy (as would be present for example in a case such as $6,999 + 3,501$ or $7300 - 6301$ , for example).	-