

## Grade 5 PBA/MYA

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
5.NBT.1	Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.	<ul style="list-style-type: none"> <li>i) Tasks have “thin context” or no context.</li> <li>ii) Tasks involve the decimal point in a substantial way (e.g. by involving, for example, a comparison of a tenths digit to a thousandths digit or a tenths digit to a tens digit).</li> </ul>	2, 7
5.NBT.3a	Read, write, and compare decimals to thousandths. a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g. $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times \frac{1}{10} + 9 \times \frac{1}{100} + 2 \times \frac{1}{1000}$	<ul style="list-style-type: none"> <li>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.</li> <li>ii) Tasks have “thin context” or no context.</li> </ul>	7
5.NBT.3b	Read, write, and compare decimals to thousandths. b. Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.	<ul style="list-style-type: none"> <li>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.</li> <li>ii) Tasks have “thin context” or no context.</li> </ul>	7
5.NBT.A.Int.1	Demonstrate understanding of the place value system by combining or synthesizing knowledge and skills articulated in 5.NBT.A	i) See <a href="#">ITN Appendix F</a> , section A, “Illustrations of Innovative Task Characteristics,” subsection 4, “Integrative tasks with machine scoring of responses entered by computer interface,” subsection “Illustration at the cluster level.”	1, 7
5.NBT.5-1	Multiply multi-digit whole numbers using the standard algorithm.	<ul style="list-style-type: none"> <li>i) Tasks do not explicitly assess fluency.</li> <li>ii) The given factors are such as to require an efficient/standard algorithm (e.g., <math>726 \times 48</math>). Factors in the task do not suggest any obvious ad hoc or mental strategy (as would be present for example in a case such as <math>725 \times 40</math>).</li> <li>iii) Tasks do not have a context.</li> <li>iv) For purposes of assessment, the possibilities are 2-digit <math>\times</math> 3-digit.</li> </ul>	-

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Evidence Statement Key	Evidence Statement Text	Clarifications	MP
5.NBT.Int.1	Perform exact or approximate multiplications and/or divisions that are best done mentally by applying concepts of place value, rather than by applying multi-digit algorithms or written strategies.	<ul style="list-style-type: none"> <li>i) Tasks have no context.</li> <li>ii) See <a href="#">ITN Appendix F</a>, section A, “Illustrations of Innovative Task Characteristics,” subsection 4, “Integrative tasks with machine scoring of responses entered by computer interface,” subsection “Illustration at the domain level.”</li> </ul>	1, 7
5.NF.1-1	<p>Add two fractions with unlike denominators, or subtract two fractions with unlike denominators, by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. <i>For example,</i> <math>\frac{2}{3} + \frac{5}{4} = \frac{8}{12} + \frac{15}{12} = \frac{23}{12}</math>. <i>(In general,</i> <math>\frac{a}{b} + \frac{c}{d} = \frac{ad+bc}{bd}</math> <i>.)</i> “Prompts do not provide visual fraction models; students may at their discretion draw visual fraction models as a strategy.”</p>	<ul style="list-style-type: none"> <li>i) Tasks do not have a context.</li> <li>ii) Tasks ask for the answer or ask for an intermediate step that shows evidence of using equivalent fractions as a strategy.</li> <li>iii) Tasks do not include mixed numbers.</li> <li>iv) Tasks may involve fractions greater than 1 (including fractions and whole numbers.)</li> </ul>	7
5.NF.2-1	Solve word problems involving addition and subtraction of fractions referring to the same whole, in cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem.	<ul style="list-style-type: none"> <li>i) The situation types are those shown in Table 2, p. 9 of <a href="#">Progressions for Operations and Algebraic Thinking</a>, sampled equally across rows and, within rows, sampled equally across columns.</li> <li>ii) Prompts do not provide visual fraction models; students may at their discretion draw visual fraction models as a strategy.</li> </ul>	1, 4, 5
5.NF.3-1	Interpret a fraction as division of the numerator by the denominator $\left(\frac{a}{b} = a \div b\right)$ .	<ul style="list-style-type: none"> <li>i) Tasks do not have a context.</li> </ul>	2

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Evidence Statement Key	Evidence Statement Text	Clarifications	MP
5.NF.3-2	Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. <i>For example, interpret <math>3/4</math> as the result of dividing 3 by 4, noting that <math>3/4</math> multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size <math>3/4</math>. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? 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) Note that one of the italicized examples in standard 5.NF.3 is a two-prompt problem.</li> </ul>	1, 4, 5
5.NF.4a-1	Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. a. For a whole number $q$ , interpret the product $\frac{a}{b} \times q$ as $a$ parts of a partition of $q$ into $b$ equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$ . <i>For example, use a visual fraction model to show <math>\frac{2}{3} \times 4 = \frac{8}{3}</math>, and create a story context for this equation. Do the same with <math>\frac{2}{3} \times \frac{4}{5} = \frac{8}{15}</math> (In general, <math>\frac{a}{b} \times \frac{c}{d} = \frac{ac}{bd}</math>.)</i>	<ul style="list-style-type: none"> <li>i) Tasks require finding a fractional part of a whole number quantity.</li> <li>ii) The result is equal to a whole number in 20% of tasks; these are practice-forward for MP.7.</li> <li>iii) Tasks have “thin context” or no context.</li> </ul>	7
5.NF.4a-2	Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. a. For a fraction $q$ , interpret the product $(a/b) \times q$ as a parts of a partition of $q$ into $b$ equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$ . <i>For example, use a visual fraction model to show <math>(2/3) \times 4 = 8/3</math>, and create a story context for this equation. Do the same with <math>(2/3) \times (4/5) = 8/15</math>. (In general, <math>(a/b) \times (c/d) = ac/bd</math>.)</i>	<ul style="list-style-type: none"> <li>i) Tasks require finding a product of two fractions (neither of the factors equal to a whole number).</li> <li>ii) The result is equal to a whole number in 20% of tasks; these are practice-forward for MP.7.</li> <li>iii) Tasks have “thin context” or no context.</li> </ul>	7

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Evidence Statement Key	Evidence Statement Text	Clarifications	MP
5.NF.4b-1	Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. b. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.	i) 50% of the tasks present students with the rectangle dimensions and ask students to find the area; 50% of the tasks give the fractions and the product and ask students to show a rectangle to model the problem.	2, 5
5.NF.6-1	Solve real world problems involving multiplication of fractions, e.g., by using visual fraction models or equations to represent the problem.	i) Tasks do not involve mixed numbers. ii) Situations include area and comparison/times as much, with product unknown. (See Table 2, p. 89 of <a href="#">CCSS</a> and Table 3, p. 23 of <a href="#">Progression for Operations and Algebraic Thinking</a> .) iii) Prompts do not provide visual fraction models; students may at their discretion draw visual fraction models as a strategy.	1, 4, 5
5.MD.3	Recognize volume as an attribute of solid figures and understand concepts of volume measurement. a. A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume. b. A solid figure which can be packed without gaps or overlaps using $n$ unit cubes is said to have a volume of $n$ cubic units.	i) Measures may include those in whole mm or cm.	7
5.MD.4	Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.	i) Tasks assess conceptual understanding of volume (see 5.MD.3) as applied to a specific situation – not applying a volume formula.	7
5.C.1.1	Base explanations/reasoning on the properties of operations. Content Scope: Knowledge and skills articulated in 5.NBT.6	i) Students need not use technical terms such as commutative, associative, distributive, or property. ii) Tasks do not have a context.	3, 7, 5, 6
5.C.1.2	Base explanations/reasoning on the properties of operations. Content Scope: Knowledge and skills articulated in 5.NBT.7	i) Students need not use technical terms such as commutative, associative, distributive, or property. ii) Tasks do not have a context.	3, 7, 8, 6
5.C.1.3	Base explanations/reasoning on the properties of operations. Content Scope: Knowledge and skills articulated in 5.MD.5a	None	2, 3, 7, 6

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Evidence Statement Key	Evidence Statement Text	Clarifications	MP
5.C.2.1	Base explanation/reasoning on the relationship between addition and subtraction or the relationship between multiplication and division. Content Scope: Knowledge and skills articulated in 5.NTB.6	None	3, 7, 5, 6
5.C.2.2	Base explanation/reasoning on the relationship between addition and subtraction or the relationship between multiplication and division. Content Scope: Knowledge and skills articulated in 5.NBT.7	None	3, 7, 6
5.C.2.3	Base explanations/reasoning on the relationship between addition and subtraction or the relationship between multiplication and division. Content Scope: Knowledge and skills articulated in 5.NF.3, 5.NF.4a	None	2, 3, 7, 6
5.C.2.4	Base explanations/reasoning on the relationship between addition and subtraction or the relationship between multiplication and division. Content Scope: Knowledge and skills articulated in 5.NF.7	None	3, 5, 7, 6
5.C.3	Reason about the place value system itself. Content Scope: Knowledge and skills articulated in 5.NBT.A	i) Tasks do not involve reasoning about place value in service of some other goal (e.g., to multiply multi-digit numbers). Rather, tasks involve reasoning directly about the place value system, in ways consistent with the indicated content scope.	3, 7, 6
5.C.4.1	Base arithmetic explanations/reasoning on concrete referents such as diagrams (whether provided in the prompt or constructed by the student in her response), connecting the diagrams to a written (symbolic) method. Content Scope: Knowledge and skills articulated in 5.NF.2	None	3, 5, 6
5.C.4.2	Base arithmetic explanations/reasoning on concrete referents such as diagrams (whether provided in the prompt or constructed by the student in her response), connecting the diagrams to a written (symbolic) method. Content Scope: Knowledge and skills articulated in 5.NF.4b	None	2, 3, 5, 6

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Evidence Statement Key	Evidence Statement Text	Clarifications	MP
5.C.4.3	Base arithmetic explanations/reasoning on concrete referents such as diagrams (whether provided in the prompt or constructed by the student in her response), connecting the diagrams to a written (symbolic) method. Content Scope: Knowledge and skills articulated in 5.NBT.6	None	3, 5, 6
5.C.4.4	Base arithmetic explanations/reasoning on concrete referents such as diagrams (whether provided in the prompt or constructed by the student in her response), connecting the diagrams to a written (symbolic) method. Content Scope: Knowledge and skills articulated in 5.NTB.7	None	3, 5, 6
5.C.5.1	Base explanations/reasoning on a number line diagram (whether provided in the prompt or constructed by the student in her response). Content Scope: Knowledge and skills articulated in 5.NF.2	None	2, 3, 5, 7, 6
5.C.5.2	Base explanations/reasoning on a number line diagram (whether provided in the prompt or constructed by the student in her response). Content Scope: Knowledge and skills articulated in 5.NF.4a	None	3, 7, 6
5.C.5.3	Base explanations/reasoning on a number line diagram (whether provided in the prompt or constructed by the student in her response). Content Scope: Knowledge and skills articulated in 5.NF.7a, 5.NF.7b	None	3, 5, 7, 6
5.C.6	Base explanations/reasoning on concrete referents such as diagrams (whether provided in the prompt or constructed by the student in her response.) Content Scope: Knowledge and skills articulated in 5.MD.C	None	3, 5, 6

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Evidence Statement Key	Evidence Statement Text	Clarifications	MP
5.C.7.1	Distinguish correct explanation /reasoning from that which is flawed, and – if there is a flaw in the argument – present corrected reasoning. (For example, some flawed ‘student’ reasoning is presented and the task is to correct and improve it.) Content Scope: Knowledge and skills articulated in 5.NF.5b	None	3, 7, 8, 6
5.C.7.2	Distinguish correct explanation /reasoning from that which is flawed, and – if there is a flaw in the argument – present corrected reasoning. (For example, some flawed ‘student’ reasoning is presented and the task is to correct and improve it.) Content Scope: Knowledge and skills articulated in 5.NF.2	None	3, 7, 6
5.C.7.3	Distinguish correct explanations/reasoning from that which is flawed, and – if there is a flaw in the argument – present corrected reasoning. (For example, some flawed ‘student’ reasoning is presented and the task is to correct and improve it.) Content scope: Knowledge and skills articulated in 5.NF.1-1, 5. NF.1-2, 5.NF.1-3, 5.NF.1-4, 5.NF.1-5	None	3, 6

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Evidence Statement Key	Evidence Statement Text	Clarifications	MP
5.C.8.2	<p>Present solutions to multi-step problems in the form of valid chains of reasoning, using symbols such as equal signs appropriately (for example, rubrics award less than full credit for the presence of nonsense statements such as <math>1 + 4 = 5 + 7 = 12</math>, even if the final answer is correct), or identify or describe errors in solutions to multi-step problems and present corrected solutions.</p> <p>Content Scope: Knowledge and skills articulated in 5.MD.5c</p>	None	3, 5, 6
5.C.9	<p>Distinguish correct explanation/reasoning from that which is flawed, and – if there is a flaw in the argument – present corrected reasoning. (For example, some flawed ‘student’ reasoning is presented and the task is to correct and improve it.)</p> <p>Content Scope: Knowledge and skills articulated in 4.NBT, 4.NF.A, 4.NF.B</p>	Tasks may have scaffolding if necessary in order to yield a degree of difficulty appropriate to Grade 5.	3, 6
5.D.1	Solve multi-step contextual word problems with degree of difficulty appropriate to Grade 5, requiring application of knowledge and skills articulated in the Evidence Statements on the PBA (excludes Reasoning Evidence Statements).	Tasks may have scaffolding if necessary in order to yield a degree of difficulty appropriate to Grade 5.	4
5.D.2	Solve multi-step contextual problems with degree of difficulty appropriate to Grade 5, requiring application of knowledge and skills articulated in 4.OA, 4.NBT, 4.NF, 4.MD.	Tasks may have scaffolding if necessary in order to yield a degree of difficulty appropriate to Grade 5.	4