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Grade 4: PA Academic Eligible Content and PA Common Core Crosswalk

Alignment of Eligible Content: More than Just Content

The crosswalk below is designed to show the alignment between the PA Academic Standard *Eligible Content and the PA Common Core Eligible Content. While content is in many cases* similar, the **key message is that PA Common Core focused instruction is more rigorous and will prepare students for upcoming PSSAs and future PA Common Core aligned PSSAs.**

The defining element of the PA Common Core Standards is one of rigor. Barbara Blackburn elaborates on the concept of rigor when she states: "True rigor is creating an environment in which each student is expected to learn at high levels, each student is supported so he or she can learn at high levels, and each student demonstrates learning at high levels.[1]"

Focus on PA Common Core

As instruction segues from the PA Academic Standards to the PA Common Core Standards, it is important to understand the need to prepare students for the current and upcoming PA CC-aligned PSSAs and to consider not only the content but the degree of rigor embraced by the new standards. Instructional time should focus on three critical areas: (1) developing understanding and fluency with multi-digit multiplication, and developing understanding of dividing to find quotients involving multi-digit dividends; (2) developing an understanding of fraction equivalence, addition and subtraction of fractions with like denominators, and multiplication of fractions by whole numbers; (3) understanding that geometric figures can be analyzed and classified based on their properties, such as having parallel sides, perpendicular sides, particular angle measures, and symmetry.

PA Common Core – Raising the Bar

Educators will note that the items developed to measure the new Assessment Anchors and Eligible Content (Common Core aligned AA/EC) will differ from the current PSSA items in both rigor and difficulty. This will be a direct result of the rigor of the new Assessment Anchors and Eligible Content where the average Depth of Knowledge (DOK) will be higher than the DOK of the existing PSSA Assessment Anchors and Eligible Content. As a result, educators should see items written at the higher cognitive levels (e.g., level 2 and level 3). However, that does not mean that a DOK level 1 item will not be found on the transitioned PSSA. For example, an item measuring math fluency is typically written at DOK level 1. For reading, there may be a vocabulary AA/EC that allows for an item to be written at DOK 1.

Regardless of the increased rigor of the items measuring the new Assessment Anchors and Eligible Content (Common Core aligned AA/EC), educators will also perceive the difficulty of the assessment to have increased.

Eye on the Standards

It is important to remember that while Assessment Anchors and Eligible Content provide the blueprint for the PSSA assessments, they are a reflection only of what can be assessed in large scale testing and do not reflect all of classroom instruction.

[1] Barbara Blackburn, *Rigor and the Common Core State Standards*, mailto:http://www.educationworld.com/a_admin/rigor-and-common-core-state-standards.shtml (January 2013)

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M4.A Numbers and Operations	**M04.A-T Number and Operations in Base Ten** **M04.A-F Number and Operations – Fractions**	
M4.A.1.1.1 Write the fraction or decimal, including mixed numbers, which corresponds to a drawing or set – no simplification necessary.	**M04.A-F.1.1.1** Recognize and generate equivalent fractions.	PACCS requires equivalent fractions
M4.A.1.1.2 Create a drawing or set that represents a given fraction or decimal, including mixed numbers (through the tenths).	**M04.A-F.1.1.2** Compare two fractions with different numerators and different denominators (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100) using the symbols >, =, or <, and justify the conclusions.	PACCS requires a comparison of fractions
M4.A.1.1.3 Match the standard number form to the word form of decimal numbers (through the tenths place).	**M04.A-T.1.1.2** Read and write whole numbers in expanded, standard and word form through 1,000,000.	PACCS addresses whole numbers
M4.A.1.1.4 Write whole numbers in expanded, standard and/or word form through 6 digits (example of standard to expanded form: 43,076 = 40,000+3000+70+6).	**M04.A-T.1.1.1** Demonstrate an understanding that in a multi-digit whole number (through 1,000,000) a digit in one place represents ten times what it represents in the place to its right. Example: Recognize that in the number 770, the 7 in the hundreds place is ten times the 7 in the tens place.	PACCS addresses whole numbers through 7 digits
M4.A.1.2.1 Locate/identify fractions or decimals on a number line (decimals and fractions through the tenths – do not mix fractions and decimals).	Intentionally Blank	Not specifically addressed in the PACCS Eligible Content
M4.A.1.2.2 Compare and/or order whole numbers through 6 digits and amounts of money to $100 (limit sets for ordering, to no more than 4 numbers).	**M04.A-T.1.1.3** Compare two multi-digit numbers through 1,000,000 based on meanings of the digits in each place, using >, =, and < symbols.	PACCS also includes read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form.
M4.A.1.3.1 Find/list/identify all factors through 10 of any given number.	**M04.A-T.2.1.1** Add and subtract multi-digit whole numbers (limit sums and subtrahends up to and including 1,000,000). **M04.B-O.2.1.1** Find all factor pairs for a whole number in the range 1 through 100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the interval 1 through 100 is a multiple of a given one-digit number. Determine whether a given whole number in the interval 1 through 100 is prime or composite.	All of the PACCS refers to the "use the 4 basic operations to solve problems" part of the PA standard

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M4.A.1.3.2 Find/list/identify multiples of a number, where the multiples do not exceed 100.	**M04.A-T.2.1.1** Add and subtract multi-digit whole numbers (limit sums and subtrahends up to and including 1,000,000).	PACCS moves beyond identify into addition and subtraction
M4.A.2.1.1 Solve problems involving all operations with whole numbers, and/or explain the solution (limit to two-step problems; e.g., multiply then add – single digit multipliers and divisors).	**M04.A-T.2.1.2** Multiply a whole number of up to four digits by a one-digit whole number, and multiply 2 two-digit numbers. **M04.B-O.1.1.3** Solve multi-step word problems posed with whole numbers using the four operations. Answers will be either whole number or have remainders that must be interpreted yielding a final answer that is a whole number. Represent these problems using equations with a symbol or letter standing for the unknown quantity.	PACCS multi-step problems involve all possible operations
M4.A.2.1.2 Solve problems involving addition or subtraction with decimals through the tenths or money to the cent and/or explain the solution. Limit to two-step problems.	Intentionally Blank	Not specifically addressed in the PA Academic Standards Eligible Content
M4.A.3.1.1 Round whole numbers to the nearest ten, hundred, thousand, ten-thousand or hundred-thousand.	**M04.A-T.1.1.4** Round multi-digit whole numbers (through 1,000,000) to any place.	PACCS moves to seven digit numbers
M4.A.3.1.2 Round amounts of money to the nearest dollar.	Intentionally Blank	Not specifically addressed in the PA Academic Standards Eligible Content
M4.A.3.1.3 Estimate the answer to addition, subtraction and multiplication problems using whole numbers through 6 digits (for multiplication, no more than 2 digits X 1 digit, excluding powers of 10).	**M04.A-T.2.1.4** Estimate the answer to addition, subtraction and multiplication problems using whole numbers through six digits (for multiplication, no more than 2 digits × 1 digit, excluding powers of 10).	Same eligible content
M4.A.3.2.1 Solve addition or subtraction problems involving decimals through hundredths (decimal numbers must have the same number of places).	**M04.A-T.2.1.3** Divide up to four-digit dividends by one-digit divisors with answers written as whole-number quotients and remainders. **M04.A-F.2.1.3** Add and subtract mixed numbers with a common denominator (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100; no regrouping with subtraction; fractions do not need to be reduced; no improper fractions as the final answers).	PACCS also addresses division and mixed numbers
M4.A.3.2.2 Solve addition or subtraction problems with fractions with like	**M04.A-F.2.1.1** Add and subtract fractions with a common denominator (denominators limited	PACCS has denominators up to 100 and has word problems

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denominators (denominators to 10, no simplifying necessary).	to 2, 3, 4, 5, 6, 8, 10, 12, and 100; answers do not need to be reduced; no improper fractions as the final answer). **M04.A-F.2.1.4** Solve word problems involving addition and subtraction of fractions referring to the same whole or set and having like denominators (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100). **M04.A-F.2.1.3** Add and subtract mixed numbers with a common denominator (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100; no regrouping with subtraction; fractions do not need to be reduced; no improper fractions as the final answers).	
Intentionally Blank	**M04.A-F.2.1.2** Decompose a fraction or a mixed number into a sum of fractions with the same denominator (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100), recording the decomposition by an equation. Justify decompositions (for example, by using a visual fraction model). Example 1: 3/8 = 1/8 + 1/8 + 1/8 OR 3/8 = 1/8 + 2/8 Example 2: 2 1/12 = 1 + 1 + 1/12 = 12/12 + 12/12 + 1/12.	Not specifically addressed in PA Academic Standard Eligible Content. In transitioning to PACCS, these specific statements will be assessed and should be explicitly addressed.
Intentionally Blank	**M04.A-F.2.1.5** Multiply a whole number by a unit fraction (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100; final answers need not be reduced or written as a mixed number). Example: 5 × (1/4) = 5/4.	Not specifically addressed in PA Academic Standard Eligible Content. In transitioning to PACCS, these specific statements will be assessed and should be explicitly addressed.
Intentionally Blank	**M04.A-F.2.1.6** Multiply a whole number by a non-unit fraction (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100; final answers do not need to be reduced or written as a mixed number). Example: 3 × (5/6) = 15/6.	Not specifically addressed in PA Academic Standard Eligible Content. In transitioning to PACCS, these specific statements will be assessed and should be explicitly addressed.
Intentionally Blank	**M04.A-F.2.1.7** Solve word problems involving multiplication of a whole number by a fraction (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100).	Not specifically addressed in PA Academic Standard Eligible Content. In transitioning to PACCS, these specific statements will be assessed and should be explicitly addressed.
Intentionally Blank	**M04.A-F.3.1.1** Add two fractions with	Not specifically addressed in PA

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	respective denominators 10 and 100. Example: Express 3/10 as 30/100, and add 3/10 + 4/100 = 30/100 + 4/100 = 34/100.	Academic Standard Eligible Content. In transitioning to PACCS, these specific statements will be assessed and should be explicitly addressed.
Intentionally Blank	**M04.A-F.3.1.2** Use decimal notation for fractions with denominators 10 or 100. Example: Rewrite 0.62 as 62/100 and vice versa.	Not specifically addressed in PA Academic Standard Eligible Content. In transitioning to PACCS, these specific statements will be assessed and should be explicitly addressed.
Intentionally Blank	**M04.A-F.3.1.3** Compare two decimals to hundredths using the symbols >, =, or <, and justify the conclusions.	Not specifically addressed in PA Academic Standard Eligible Content. In transitioning to PACCS, these specific statements will be assessed and should be explicitly addressed.
M4.B Measurement	**M04.D-M Measurement and Data**	
M4.B.1.1.1 Match/construct analog time (a picture of a clock), to the same time written in digital.	Intentionally Blank	Not specifically addressed in PACCS Eligible Content
M4.B.1.1.2 Identify time (analog or digital) as the amount of minutes before and/or after the hour (e.g., 2:50 is the same as 10 minutes before 3:00; quarter past six is the same as 6:15).	**M04.D-M.1.1.4** Identify time (analog or digital) as the amount of minutes before or after the hour. Example 1: 2:50 is the same as 10 minutes before 3:00. Example 2: Quarter past six is the same as 6:15).	Same eligible content
M4.B.1.1.3 Calculate the elapsed time, to the minute, in a given situation (limited to 2 adjacent hours).	Intentionally Blank	Not specifically addressed in PACCS Eligible Content
M4.B.1.1.4 Determine the beginning or ending time, given the elapsed time (limited to 2 adjacent hours).	**M04.D-M.1.1.2** Use the four operations to solve word problems involving distances, intervals of time (such as elapsed time), liquid volumes, masses of objects; 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.	PACCS bot only addresses time but also other measurements
M4.B.2.1.1 Use or read a ruler (provided) to measure to the nearest 1/4 inch or centimeter.	Intentionally Blank	Not specifically addressed in PACCS Eligible Content
M4.B.2.2.1 Make reasonable estimates of weights, lengths and capacities of familiar	**M04.D-M.1.1.1** Know relative sizes of measurement units within one system of units	PACCS expands knowledge of units of measure and equivalent

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objects (measurements in the same system).	including standard units (in., ft., yd., mi; oz., lb.; c, pt., qt, gal), metric units (cm, m, km; g, kg; mL, L), and time (sec, min, hr., day, wk., mo., yr.). Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. A table of equivalencies will be provided. Example 1: Know that 1 kg is 1,000 times as heavy as 1 g. Example 2: Express the length of a 4-foot snake as 48 in.	measures
M4.C Geometry	**M04.C-G Geometry**	
M4.C.1.1.1 Identify, classify and/or compare two-dimensional figures (circle, triangle, square, parallelogram, trapezoid, rhombus, rectangle, pentagon, hexagon, octagon). **M04.C-G.1.1.1** Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	**M04.C-G.1.1.2** 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.	PACCS has additional two-dimensional figures and also classify figures based on given information
M4.C.1.1.2 Identify or classify three-dimensional figures (cube, sphere, rectangular prism and pyramid).	Intentionally Blank	Not specifically addressed in PACCS Eligible Content
M4.C.1.2.1 Identify points, lines, line segments or rays.	**M04.C-G.1.1.3** 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 mirroring parts. Identify line-symmetric figures and draw lines of symmetry (up to two lines of symmetry).	PACCS requires recognizing lines of symmetry also
M4.C.1.2.2 Identify parallel and perpendicular lines.	**M04.C-G.1.1.1** Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	Not specifically addressed in PACCS Eligible Content
M4.C.2.1.1 Identify or create figures that have one, two or no lines of symmetry.	**M04.C-G.1.1.3** 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 mirroring parts. Identify line-symmetric figures and draw lines of symmetry (up to two lines of symmetry).	PACCS extends patterns to find a given rule

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M4.C.3.1.1 Match or plot the ordered pair with the appropriate point (or object) on a simple grid.	Intentionally Blank	Not specifically addressed in PACCS Eligible Content
M4.D Algebraic Concepts	**M04.B-O Operations and Algebraic Thinking**	
M4.D.1.1.1 Extend or find a missing element in a numerical or geometric pattern (+, - or x may be used – numerical patterns must be whole numbers).	**M04.B-O.3.1.1** 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. Example 1: 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. Example 2: Given the rule "increase the number of sides by 1" and starting with a triangle, observe that the tops of the shapes alternate between a side and a vertex.	PACCS extends patterns to find a given rule
M4.D.1.1.2 Identify/describe the rule for a numerical or geometric pattern shown (+, - or x may be used - numerical patterns must be whole numbers).	**M04.B-O.3.1.1** 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. Example 1: 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. Example 2: Given the rule "increase the number of sides by 1" and starting with a triangle, observe that the tops of the shapes alternate between a side and a vertex.	PACCS extends patterns to find a given rule
M4.D.1.1.3 Create or replicate a numerical or geometric pattern showing 3 repetitions (+, - or x may be used - numerical patterns must be whole numbers or money).	**M04.B-O.3.1.1** 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. Example 1: 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. Example 2: Given the rule "increase the number of sides by 1" and starting with a triangle, observe that the tops of the shapes alternate between a side and a vertex.	PACCS extends patterns to find a given rule
M4.D.1.2.1 Determine the missing elements in a function table (functions may	**M04.B-O.3.1.2** Determine the missing elements in a function table (limit to +, – or ×	Same eligible content

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use +, - or x and whole numbers or money).	and to whole numbers or money).	
M4.D.1.2.2 Determine the rule for a function given a table (functions may use +, - or x and whole numbers).	**M04.B-O.3.1.2** Determine the missing elements in a function table (limit to +, – or × and to whole numbers or money). **M04.B-O.3.1.3** Determine the rule for a function given a table (limit to +, – or × and to whole numbers).	Same eligible content
M4.D.2.1.1 Correlate story situations with expressions or equations (may use numbers and one operation +, - or x; no variables).	**M04.B-O.1.1.**2 Multiply or divide to solve word problems involving multiplicative comparison, distinguishing multiplicative comparison from additive comparison. Example: Know that 3 × 4 can be used to represent that Student A has 4 objects and Student B has 3 times as many objects, and not just 3 more objects.	PACCS expands into multiplication and division
M4.D.2.2.1 Solve for a missing number in an equation (using estimation, guess & check, etc.). May use +, - or single digit x or ÷.	**M04.B-O.1.1.3** Solve multi-step word problems posed with whole numbers using the four operations. Answers will be either whole number or have remainders that must be interpreted yielding a final answer that is a whole number. Represent these problems using equations with a symbol or letter standing for the unknown quantity.	PACCS has multi-step word problems
M4.D.2.2.2 Identify the missing symbol (+, - , x, ÷, =, <, >) that makes a number sentence true (single digit x or □ only).	**M04.B-O.1.1.4** Identify the missing symbol 9+, –, ×, ÷, =, <, >) that makes a number sentence true (single digit divisor only).	Same eligible content
Intentionally Blank	**M04.B-O.1.1.1** Interpret a multiplication equation as a comparison. Represent verbal statements of multiplicative comparisons as multiplication equations. Example 1: Interpret 35 = 5 × 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Example 2: Know that the statement 24 is 3 times as many as 8 can be represented by the equation 24 = 3 × 8 or 24 = 8 × 3.	Not specifically addressed in PA Academic Standard Eligible Content. In transitioning to PACCS, these specific statements will be assessed and should be explicitly addressed.
M4.E Data Analysis and Probability	**M04.D-M Measurement and Data**	
M4.E.1.1.1 Describe, interpret and/or answer questions based on data shown in tables, charts, bar graphs or pictographs.	Intentionally Blank	Not specifically addressed in PACCS Eligible Content
M4.E.1.2.1 Graph data or complete a graph given the data (bar graph or pictograph – grid is provided).	**M04.D-M.2.1.**1 Make a line plot to display a data set of measurements in fractions of a unit (e.g., intervals of 1/2, 1/4, 1/8).	PACCS uses line plots

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M4.E.1.2.2 Translate information from one type of display to another (table, chart, bar graph, or pictograph).	**M04.D-M.2.1.3** Translate information from one type of display to another (table, chart, bar graph, or pictograph).	Same eligible content
M4.E.3.1.1 Make a prediction based on data or chance (data may be shown in tables, charts, line graphs, bar graphs or pictographs).	**M04.D-M.2.1.2** Solve problems involving addition and subtraction of fractions by using information presented in line plots (line plots must be labeled with common denominators, such as 1/4, 2/4, 3/4).	PACCS details line plots
Intentionally Blank	**M04.D-M.1.1.3** Apply the area and perimeter formulas for rectangles in real world and mathematical problems (may include finding a missing side length). Whole numbers only. The formulas will be provided.	Not specifically addressed in PA Academic Standard Eligible Content. In transitioning to PACCS, these specific statements will be assessed and should be explicitly addressed.
Intentionally Blank	**M04.D-M.3.1.1** Measure angles in whole-number degrees using a protractor. With the aid of a protractor, sketch angles of specified measure.	Not specifically addressed in PA Academic Standard Eligible Content. In transitioning to PACCS, these specific statements will be assessed and should be explicitly addressed.
Intentionally Blank	**M04.D-M.3.1.2** Solve addition and subtraction problems to find unknown angles on a diagram in real-world and mathematical problems. (Angles must be adjacent and non-overlapping.)	Not specifically addressed in PA Academic Standard Eligible Content. In transitioning to PACCS, these specific statements will be assessed and should be explicitly addressed.