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4th Grade PA Core Mathematics Standards Checklist				
M04.B-O Operations and Algebraic Thinking Reporting Category				
ASSESSMENT ANCHOR				
M04.B-O.1 Use the four operations with whole numbers to solve problems.				
DESCRIPTOR				
M04.B-O.1.1 Use numbers and symbols to model the concepts of expressions and equations.				
ELIGIBLE CONTENT	**Textbook Resources**	**Online Resources**	**Additional Resources**	**Assessment**
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.	Chapter 3 Lesson 3		Coach Book Chapter 1 Lesson 1	
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 not just 3 more objects.	Chapter 3 Lessons 3, 4, 8	i-Ready 119	Coach Book Chapter 1 Lesson 2	
M04.B-O.1.1.3 Solve multi-step word problems posed with whole numbers using the four operations. Answers will be either whole numbers 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.	Chapter 2 Lessons 5, 6, 9 Chapter 4 Lesson 8 Chapter 5 Lesson 5 Chapter 6 Lesson 11 Chapter 7 Lessons 7, 9	i-Ready 115, 118, 124	Coach Book Chapter 1 Lesson 3	

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ELIGIBLE CONTENT	Textbook Resources	Online Resources	Additional Resources	Assessment
M04.B-O.1.1.4 Identify the missing symbol (+, −, ×, ÷, =, <, and >) that makes a number sentence true (single-digit divisor only).		i-Ready 116	Coach Book Chapter 1 Lesson 4	

ELIGIBLE CONTENT	Textbook Resources	Online Resources	Additional Resources	Assessment
M04.B-O.2.1.1 Find all factor pairs for a whole number in the interval 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.	Chapter 8 Lesson 1	i-Ready 121, 122, 123, 128	Coach Book Chapter 1 Lesson 5	

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M04.B-O Operations and Algebraic Thinking Reporting Category (Part II)				
ELIGIBLE CONTENT	Textbook Resources	Online Resources	Additional Resources	Assessment
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 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.	Chapter 2 Lesson 2 Chapter 7 Lessons 1-6, 8, 9	i-Ready 38	Coach Book Chapter 1 Lesson 6	
M04.B-O.3.1.2 Determine the missing elements in a function table (limit to +, −, or × and to whole numbers or money).	Chapter 2 Lesson 2 Chapter 7 Lessons 1-6, 8, 9		Coach Book Chapter 1 Lesson 7	
M04.B-O.3.1.3 Determine the rule for a function given a table (limit to +, −, or × and to whole numbers).	Chapter 2 Lesson 2 Chapter 7 Lessons 1-6, 8, 9	i-Ready 125, 132	Coach Book Chapter 1 Lesson 7	

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4th Grade PA Core Mathematics Standards Checklist				
M04.A-T Numbers and Operations in Base Ten Reporting Category				
ASSESSMENT ANCHOR				
M04.A-T.1 Generalize place-value understanding for multi-digit whole numbers.				
DESCRIPTOR				
M04.A-T.1.1 Apply place-value and numeration concepts to compare, find equivalencies, and round.				
ELIGIBLE CONTENT	**Textbook Resources**	**Online Resources**	**Additional Resources**	**Assessment**
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.	Chapter 1 Lesson 1 Chapter 4 Lesson 1 Chapter 6 Lesson 1	i-Ready 123, 136	Coach Book Chapter 2 Lesson 9	
M04.A-T.1.1.2 Read and write whole numbers in expanded, standard, and word form through 1,000,000.	Chapter 1 Lessons 2, 3, 4, 6	i-Ready 123, 124, 125	Coach Book Chapter 2 Lesson 8	
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.	Chapter 1 Lessons 2, 3, 4, 6	i-Ready 146, 156	Coach Book Chapter 2 Lesson 8	
M04.A-T.1.1.4 Round multi-digit whole numbers (through 1,000,000) to any place.	Chapter 1 Lessons 5, 6 Chapter 2 Lesson 4 Chapter 4 Lessons 2, 10 Chapter 5 Lesson 2 Chapter 6 Lesson 2	i-Ready 147	Coach Book Chapter 2 Lesson 10	

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ASSESSMENT ANCHOR				
M04.A-T.2 Use place-value understanding and properties of operations to perform multi-digit arithmetic.				
DESCRIPTOR				
M04.A-T.2.1 Use operations to solve problems.				
ELIGIBLE CONTENT	Textbook Resources	Online Resources	Additional Resources	Assessment
M04.A-T.2.1.1 Add and subtract multi-digit whole numbers (limit sums and subtrahends up to and including 1,000,000).	Chapter 2 Lessons 1-9 Chapter 5 Lesson 5		Coach Book Chapter 2 Lesson 11	
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.	Chapter 3 Lessons 1, 5, 6 Chapter 4 Lessons 1-11 Chapter 5 Lessons 1-6		Coach Book Chapter 2 Lesson 12	
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.	Chapter 3 Lessons 1, 2 Chapter 6 Lessons 1-10		Coach Book Chapter 2 Lesson 13	
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).	Chapter 2 Lesson 4 Chapter 5 Lesson 2		Coach Book Chapter 2 Lesson 14	

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4th Grade PA Core Mathematics Standards Checklist				
M04.A-F Numbers and Operations—Fractions Reporting Category				
ASSESSMENT ANCHOR				
M04.A-F.1 Extend understanding of fraction equivalence and ordering.				
DESCRIPTOR				
M04.A-F.1.1 Find equivalencies and compare fractions				
ELIGIBLE CONTENT	**Textbook Resources**	**Online Resources**	**Additional Resources**	**Assessment**
M04.A-F.1.1.1 Recognize and generate equivalent fractions.	Chapter 8 Lessons 3-5	i-Ready 129, 134, 145	Coach Book Chapter 3 Lesson 15	
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.	Chapter 8 Lessons 6-8	i-Ready 130, 140	Coach Book Chapter 3 Lesson 16	

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ELIGIBLE CONTENT	Textbook Resources	Online Resources	Additional Resources	Assessment
M04.A-F.2.1.1 Add and subtract fractions with a common denominator (denominators limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100; answers do not need to be simplified; and no improper fractions as the final answer).	Chapter 8 Lessons 9, 10 Chapter 9 Lessons 1-7	i-Ready 131, 143, 163	Coach Book Chapter 3 Lesson 17	
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 (e.g., 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	Chapter 8 Lesson 9 Chapter 9 Lessons 1,2,6,7	i-Ready 132, 142, 145, 152	Coach Book Chapter 3 Lesson 18	
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 simplified; and no improper fractions as the final answers).	Chapter 9 Lessons 6, 7	i-Ready 141	Coach Book Chapter 3 Lesson 19	
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).	Chpater 9 Lessons 1-7	i-Ready 133	Coach Book Chapter 3 Lesson 20	
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 and final answers do not need to be simplified or written as a mixed number). Example: 5 × (1/4) = 5/4	Chapter 9 Lessons 8, 9	i-Ready 134	Coach Book Chapter 3 Lesson 21	

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ELIGIBLE CONTENT	Textbook Resources	Online Resources	Additional Resources	Assessment
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 and final answers do not need to be simplified or written as a mixed number). Example: 3 × (5/6) = 15/6	Chapter 9 Lessons 8, 9	i-Ready 144	Coach Book Chapter 3 Lesson 21	
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).	Chapter 9 Lessons 8, 9	i-Ready 135	Coach Book Chapter 3 Lesson 22	

M04.A-F Numbers and Operations—Fractions Reporting Category (Part II)

ASSESSMENT ANCHOR

M04.A-F.3 Understand decimal notation for fractions and compare decimal fractions.

DESCRIPTOR

M04.A-F.3.1 Use operations to solve problems involving decimals, including converting between fractions and decimals (may include word problems).

ELIGIBLE CONTENT	Textbook Resources	Online Resources	Additional Resources	Assessment
M04.A-F.3.1.1 Add two fractions with respective denominators 10 and 100. Example: Express 3/10 as 30/100, and add 3/10 + 4/100 = 30/100 + 4/100 = 34/100.	Chpater 8 Lesson 4 Chapter 10 Lessons 4-6 Chapter 10 Lesson 8.		Coach Book Ch. 3 L23	
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.	Chapter 10 Lessons 1-8		Coach Book Ch.3 L24	
M04.A-F.3.1.3 Compare two decimals to hundredths using the symbols >, =, or <, and justify the conclusions.	Chapter 10 Lessons 1-7	i-Ready 153	Coach Book Ch.3 L25	

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4th Grade PA Core Mathematics Standards Checklist

M04.C-G Geometry Reporting Category

ASSESSMENT ANCHOR

M04.C-G.1 Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

DESCRIPTOR

M04.C-G.1.1 List properties, classify, draw, and identify geometric figures in two dimensions.

ELIGIBLE CONTENT	Textbook Resources	Online Resources	Additional Resources	Assessment
M04.C-G.1.1.1 Draw points, lines, line segments, rays, angles (right, acute, and obtuse), and perpendicular and parallel lines. Idenify these in two-dimensional figures	Chapter 14 Lessons 1-9, 11	i-Ready 29	Coach Book Chapter 5 Lesson 35	
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.	Chapter 14 Lessons 8, 9, 11	i-Ready 30, 32	Coach Book Chapter 5 Lesson 36	
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).	Chapter 14 Lesson 10	i-Ready 33, 34	Coach Book Chapter 5 Lesson 37	

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4th Grade PA Core Mathematics Standards Checklist				
M04.D-M Measurement and Data Reporting Category				
ASSESSMENT ANCHOR				
M04.D-M.1 Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.				
DESCRIPTOR				
M04.D-M.1.1 Solve problems involving length, weight (mass), liquid volume, time, area, and perimeter.				
ELIGIBLE CONTENT	**Textbook Resources**	**Online Resources**	**Additional Resources**	**Assessment**
M04.D-M.1.1.1 Know relative sizes of measurement units within one system of units including standard units (in., ft, yd, mi; oz., lb; and c, pt, qt, gal), metric units (cm, m, km; g, kg; and mL, L), and time (sec, min, hr, day, wk, mo, and 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.	Chapter 11 Lessons 1-7 Chapter 12 Lessons 1-3 Chapter 12 Lessons 5-6	i-Ready 82, 87, 94, 96	Coach Book Chapter 4 Lessons 26-28	
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.	Chapter 11 Lessons 1-7, 9-10 Chapter 12 Lessons 4-6	i-Ready 83, 85, 97	Coach Book Chapter 4 Lesson 29	
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.	Chapter 13 Lessons 1-5	i-Ready 88, 89, 167	Coach Book Chapter 4 Lesson 30	

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ELIGIBLE CONTENT	Textbook Resources	Online Resources	Additional Resources	Assessment
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	N/A	i-Ready 49, 56, 57	Coach Book Chapter 4 Lesson 26	

ASSESSMENT ANCHOR

M04.D-M.2 Represent and interpret data.

DESCRIPTOR

M04.D-M.2.1 Organize, display, and answer questions based on data.

ELIGIBLE CONTENT	Textbook Resources	Online Resources	Additional Resources	Assessment
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, or 1/8).	Chapter 11 Lesson 8	i-Ready 92, 98	Coach Book Chapter 4 Lesson 32	
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).	Chapter 11 Lesson 8		Coach Book Chapter 4 Lesson 32	
M04.D-M.2.1.3 Translate information from one type of display to another (table, chart, bar graph, or pictograph).	Chapter 11 Lesson 8		Coach Book Chapter 4 Lessons 31-32	

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<tr><td colspan="5">DESCRIPTOR</td></tr>
<tr><td colspan="5">M04.D-M.3.1 Use appropriate tools and units to sketch an angle and determine angle measurements.</td></tr>
<tr><td>ELIGIBLE CONTENT</td><td>Textbook Resources</td><td>Online Resources</td><td>Additional Resources</td><td>Assessment</td></tr>
<tr><td>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.</td><td>Chapter 14 Lessons 5-6</td><td>i-Ready 91</td><td>Coach Book Chapter 4 Lesson 33</td><td></td></tr>
<tr><td>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.)</td><td>Chapter 14 Lesson 7</td><td>i-Ready 84, 90</td><td>Coach Book Chapter 4 Lesson 34</td><td></td></tr>
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