

Standard	Assessment Anchor	Learning Goals/Concepts	Eligible Content	Student Performance Objectives	Resources/Activities	Terminology
2.1.3.B.1		<p>Understanding Place Value *Beginning of the year review.</p> <p>Apply place-value understanding and properties of operations to perform multi-digit arithmetic.</p>	<p>Round 2 and 3 digit numbers to the nearest ten or hundred.</p> <p>Add 2 and 3 digit whole numbers (limit sums from 100 to 1,000) and/or subtract 2 and 3 digit whole numbers.</p> <p>Order a set of whole numbers from least to greatest or greatest to least (up thru 9,999 and limit sets to not more than 4 numbers.</p>	<p>Students will be able to round 2 and 3 digit numbers to the nearest 10 or 100.</p> <p>Students will be able to fluently add and subtract within 1,000 using strategies and relationships between addition and subtraction.</p> <p>Students will be able to apply place value understandings to compare and order numbers.</p> <p>Make sense of and persevere in solving complex and novel mathematical problems.</p> <p>Students will be able to communicate and apply appropriate mathematical vocabulary in daily calculations and problem solving.</p> <p>Students will be able to recite from memory and with fluency, basic multiplication facts.</p>	<p>Harcourt (old) Text: Ch. 1 Lesson 2 Ch. 1 Lesson 3 Ch. 2 Lesson 2 Ch. 2 Lesson 3</p> <p>Go Math! Lesson 1.1 GM Lesson 1.2 GM Lesson 1.3 GM Lesson 1.5 GM Lesson 1.7 GM Lesson 1.8 GM Lesson 1.10 GM Lesson 1.12</p>	<p>digit</p> <p>standard form</p> <p>expanded form</p> <p>commutative property of addition</p> <p>pattern</p> <p>round</p> <p>estimate</p> <p>associative property of addition</p>

PA Core Critical Concepts 1

Standard	Assessment Anchor	Learning Goals/Concepts	Eligible Content	Student Performance Objectives	Resources/Activities	Terminology
2.2.3.A.1		Represent and solve problems involving multiplication and division.	<p>Interpret and/or describe products of whole numbers (up to and inc 10x10)  <u>Ex.</u> Interpret 35 as a total number of objects in 5 groups each containing 7 objects  <u>Ex.</u> Describe a context in which a total number of objects can be expressed as 5x7.</p> <p>Interpret and/or describe whole number quotients of whole numbers (limit dividends thru 50 and divisors and quotients thru 10)  <u>Ex.</u> Interpret 48÷8 as the number of objects in each share when 48 objects are partitioned equally into 8 shares, or as a number of shares when 48 objects are partitioned into equal shares of 8 objects each.  <u>Ex.</u> Describe a context in which a number of shares or a number of groups can be expressed as 48÷ 8.</p> <p>Use multiplication (thru 10x10) and/or division (limit dividends thru 50 and divisors and quotients thru 10) to solve word problems in situations involving equal groups, arrays, and/or measurement quantities.</p>	<p>Students will be able to model various strategies to solve multiplication facts.</p> <p>Students will be able to demonstrate an understanding of the relationship between multiplication and division.</p> <p>Students will be able to apply mathematical knowledge to analyze and model multiplication and division problems.</p> <p>Make sense of and persevere in solving complex and novel mathematical problems.</p> <p>Students will be able to communicate and apply appropriate mathematical vocabulary in daily calculations and problem solving.</p> <p>Students will be able to recite from memory and with fluency, basic multiplication facts.</p>	<p>GM Lesson 3.1                      GM Lesson 3.2                      GM Lesson 3.3                      GM Lesson 3.4                      GM Lesson 3.5                      GM Lesson 3.6                      GM Lesson 3.7</p> <p>GM Lesson 6.1                      GM Lesson 6.2                      GM Lesson 6.3                      GM Lesson 6.4                      GM Lesson 6.5                      GM Lesson 6.6                      GM Lesson 6.7                      GM Lesson 6.8                      GM Lesson 6.9</p> <p>GM Lesson 4.1 + 7.1, 7.5                      GM Lesson 4.2 + 7.2, 7.3                      GM Lesson 4.3 + 7.4, 7.6                      GM Lesson 4.5 + 7.7                      GM Lesson 4.8 + 7.8                      GM Lesson 4.9 + 7.9                      GM Lesson 4.6                      GM Lesson 4.7                      GM Lesson 4.10</p> <p>GM Lesson 5.1                      GM Lesson 5.2                      GM Lesson 5.4                      GM Lesson 5.5</p>	<p>equal groups</p> <p>factor</p> <p>multiply</p> <p>product</p> <p>array</p> <p>zero property of multiplication</p> <p>multiple</p> <p>divide</p> <p>dividend</p> <p>divisor</p> <p>quotient</p> <p>inverse operation</p> <p>related facts</p> <p>order of operations</p>

PA Core Critical Concepts 1

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2.1.3.B.1		Apply place-value understanding and properties of operations to perform multi-digit arithmetic.	<p>Determine the unknown whole number in a multiplication (up to and including 10x10) or division (limit dividends thru 50 and limit divisors and quotients thru 10) equation relating three whole numbers. Ex. Determine the unknown number that makes an equation true.</p> <p>Multiply 1-digit whole numbers by 2-digit multiples of 10 (from 10-90).</p>	<p>Students will be able to apply and explain related multiplication and division facts.</p> <p>Students will be able to model and record multiplication with multiples of 10.</p> <p>Students will be able to model the commutative and associative properties of multiplication and apply it to find products.</p>		
2.2.3.A.2		Understand properties of multiplication and the relationships between multiplication and division.	<p>Apply the commutative property of multiplication (not identification or definition of the property).</p> <p>Apply the associative property of multiplication (not identification or definition of the property).</p> <p>Interpret and/or model division as a multiplication equation with an unknown factor. Ex. Find <math>32 \div 8</math> by solving <math>8 \times ? = 32</math>.</p>	<p>Students will be able to represent and solve problems involving multiplication and division.</p> <p>Make sense of and persevere in solving complex and novel mathematical problems.</p> <p>Students will be able to communicate and apply appropriate mathematical vocabulary in daily calculations and problem solving.</p>		<p>expression</p> <p>commutative property of multiplication</p> <p>equation</p> <p>associative property of multiplication</p>
2.2.3.A.3		Demonstrate multiplication and division fluency.	None	<p>Students will be able to recite from memory and with fluency, basic multiplication facts.</p>		

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2.2.3.A.4		Solve problems involving the four operations, and identify and explain patterns in arithmetic.	<p>Solve 2 step word problems using the 4 operations (expressions are not explicitly stated). Limit to problems w/ whole numbers and whole number answers.</p> <p>Represent 2 step word problems using equations w/ a symbol standing for the unknown quantity. Limit prob. to whole numbers and whole number answers.</p> <p>Assess the reasonableness of answers. Limit problems posed w/whole numbers and whole number answers.</p> <p>Solve 2 step equations using order of operations (equation is explicitly states w/ no grouping symbols.)</p> <p>Identify arithmetic patterns, including patterns in the addition or multiplication table) and/or explain them using properties of operations.  <u>Ex.</u> Observe that 4 x a number is always even.  <u>Ex.</u> Explain why 6 x a number can be decomposed into 3 equal addends.</p> <p>Create or match a story to a given combo. of symbols (+,-,x,÷,&lt;,&gt;, and =) and numbers.</p> <p>Identify the missing symbol (+,-,x,÷,&lt;,&gt;, and =) that makes a number sentence true.</p>	<p>Students will be able to solve problems using the four operations and identify and explain patterns in arithmetic.</p> <p>Students will be able to solve 2-step word problems using the 4 operations while representing the problems using equations with symbols standing for an unknown quantity.</p> <p>Students will be able to represent a real-world situation symbolically as an equation.</p> <p>Students will be able to state the meaning of symbols they use in mathematical expressions and sentences accurately.</p> <p>Make sense of and persevere in solving complex and novel mathematical problems.</p> <p>Students will be able to communicate and apply appropriate mathematical vocabulary in daily calculations and problem solving.</p> <p>Students will be able to recite from memory and with fluency, basic multiplication facts.</p>	<p>Harcourt (old) Text:                      Ch. 12 Lesson 4                      Ch. 12 Lesson 5                      Ch. 4 Lesson 6</p> <p>GM Lesson 7.10                      GM Lesson 7.11</p> <hr/> <p style="text-align: center;"><b>Recommended Time Frame = 60 days</b></p>	<p>estimate</p> <p>compatible number</p> <p>order of operations</p>

Standard	Assessment Anchor	Learning Goals/Concepts	Eligible Content	Student Performance Objectives	Resources/Activities	Terminology
2.4.3.A.3		Solve problems and make change involving money using a combination of coins and bills.	<p>Compare total values of combinations of coins (penny, nickel, dime, quarter) and/or dollar bills less than \$5.00.</p> <p>Make change for an amount up to \$5.00 with no more than \$2.00 change (penny, nickel, dime, quarter, dollar)</p> <p>Round amounts of money to the nearest dollar.</p>	<p>Students will be able to solve problems by rounding, comparing, and computing combinations of money.</p> <p>Students will be able to apply strategies to compute change.</p>	<p>Think Central, Go Math! Additional Resources for PA Standards on the online Resource List</p> <p>Harcourt (old) Text: Ch. 5 Lesson 1 Ch. 5 Lesson 3 Ch. 5 Lesson 4 Ch. 5 Lesson 5 Ch. 5 Lesson 2</p>	<p>equivalent</p> <p>change</p>
2.4.3.A.2		Tell and write time to the nearest minute and solve problems by calculating time intervals.	<p>Tell, show, and/or write time (analog) to the nearest minute.</p> <p>Calculate elapsed time to the minute in a given situation (total elapsed time limited to 60 minutes or less).</p>	<p>Students will be able to read, write, and tell time on analog and digital clocks to the nearest minute.</p> <p>Students will be able to represent real-world situations to calculate elapsed time.</p> <p>Make sense of and persevere in solving complex and novel mathematical problems.</p> <p>Students will be able to communicate and apply appropriate mathematical vocabulary in daily calculations and problem solving.</p> <p>Students will be able to recite from memory and with fluency, basic multiplication facts.</p>	<p>Go Math! Lesson 10.1 GM Lesson 10.2 GM Lesson 10.3 GM Lesson 10.4</p> <p>Harcourt (old) Text Ch. 6 Lesson 4 Ch. 6 Lesson 5</p>	<p>minute</p> <p>A.M.</p> <p>P.M.</p> <p>midnight</p> <p>noon</p> <p>elapsed time</p>

PA Core Critical Concepts 2

Standard	Assessment Anchor	Learning Goals/Concepts	Eligible Content	Student Performance Objectives	Resources/Activities	Terminology
2.1.3.C.1		Explore and develop an understanding of fractions as numbers.	<p>Demonstrate that when a whole or set is partitioned into <math>y</math> equal parts, the fraction <math>1/y</math> represents 1 part of the whole and/or the fraction <math>x/y</math> represents <math>x</math> equal parts of the whole (limit denominators to 2, 4, 6, 8; limit numerators to whole numbers less than the denominator; and no simplifying nec.).</p> <p>Represent fractions on a number line (limit denominators to 2, 3, 4, 6, and 8; limit numerators to whole numbers less than the denominator; and no simplifying nec.).</p> <p>Recognize and generate simple equivalent fractions (limit the denominators to 1, 2, 3, 4, 6, and 8 and limit numerators to whole numbers less than the denominator).  <u>Ex.</u> <math>1/2 = 2/4</math>  <u>Ex.</u> <math>4/6 = 2/3</math></p> <p>Express whole numbers as fractions, and/or generate fractions that are equivalent to whole numbers (limit denominators to 1, 2, 3, 4, 6, and 8).  <u>Ex.</u> Express 3 in the form <math>3 = 3/1</math>.  <u>Ex.</u> Recognize that <math>6/1 = 6</math>.</p> <p>Compare two fractions with the same denominator (limit denominators to 1, 2, 3, 4, 6, and 8), using the symbols <math>&gt;</math>, <math>=</math>, <math>&lt;</math>, and/or justify the conclusions.</p>	<p>Students will be able to explore and identify equal parts of a whole.</p> <p>Students will be able to locate and represent fractions on a number line.</p> <p>Students will be able to generate equivalent fractions by using models.</p> <p>Students will be able to compare 2 fraction with the same denominator by reasoning about their size.</p> <p>Students will be able to use a fraction to name one part of a whole that is divided into equal parts.</p>	<p>Go Math! Lesson 8.1                      GM Lesson 8.3                      GM Lesson 8.4                      GM Lesson 8.2                      GM Lesson 8.5                      GM Lesson 8.6                      GM Lesson 8.7                      GM Lesson 8.8                      GM Lesson 8.9</p> <p>GM Lesson 9.2                      GM Lesson 9.1                      GM Lesson 9.6                      GM Lesson 9.7                      GM Lesson 9.9</p>	<p>whole</p> <p>equal parts</p> <p>halves</p> <p>thirds</p> <p>fourths</p> <p>sixths</p> <p>eighths</p> <p>fraction</p> <p>unit fraction</p> <p>numerator</p> <p>denominator</p> <p>equivalent fraction</p> <p>fraction greater than one</p>

PA Core Critical Concepts 2

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2.3.3.A.2		Use the understanding of fractions to partition shapes into parts with equal areas and express the area of each part as a unit fraction of the whole.	Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. <u>Ex.</u> Partition a shape into 4 parts w/ = areas. <u>Ex.</u> Describe the area of each of 8 equal parts as $\frac{1}{8}$ of the area of the shape.			
2.4.3.A.4		Represent and interpret data using tally charts, tables, pictographs, line plots, and bar graphs.	Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Display the data by making a line plot, where the horizontal scale is marked in appropriate units- whole numbers, halves, or quarters.  Complete a scaled pictograph and a scaled bar graph to represent a data set w/ several categories (scales limited to 1, 2, 5, and 10).  Solve 1 and 2 step problems using info. to interpret data presented in scaled pictographs and scaled bar graphs (scales limited to 1, 2, 5, and 10). <u>Ex.</u> Which category is the largest? <u>Ex.</u> How many more are in category A than in category B?  Translate info. from one type of display to another. Limit to pictographs, tally charts, bar graphs, and tables. <u>Ex.</u> Convert a tally chart to a bar graph.	Students will be able to draw various graphs to represent a data set.           Students will be able to solve problems using data represented in various graphs.  Make sense of and persevere in solving complex and novel mathematical problems.  Students will be able to recite from memory and with fluency, basic multiplication facts.	GM Lesson 2.1 GM Lesson 2.2 GM Lesson 2.3 GM Lesson 2.4 GM Lesson 2.5 GM Lesson 2.6 GM Lesson 2.7	frequency table  key  picture graph  bar graph  scale  horizontal bar graph  vertical bar graph  line plot
					<b>Recommended Time Frame = 60 days</b>	

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2.3.3.A.1		Identify, compare, and classify shapes and their attributes.	<p>Explain that shapes in different categories may share attributes and that the shared attributes can define a larger category.  <u>Ex.</u> A rhombus and a rectangle are both quadrilaterals since they both have exactly four sides.  <u>Ex.</u> A triangle and a pentagon are both polygons since they are both multi-sided plane figures.</p> <p>Recognize rhombi, rectangles, and squares as examples of quadrilaterals and/or draw examples of quadrilaterals that do not belong to any of these subcategories.</p>	<p>Students will be able to model and construct examples of geometric figures by their sides and angles.</p> <p>Students will be able to describe, classify, and compare quadrilaterals based on their sides and angles.</p> <p>Make sense of and persevere in solving complex and novel mathematical problems.</p> <p>Students will be able to communicate and apply appropriate mathematical vocabulary in daily calculations and problem solving.</p> <p>Students will be able to recite from memory and with fluency, basic multiplication facts.</p>	<p>GM Lesson 12.1                      GM Lesson 12.2                      GM Lesson 12.3                      GM Lesson 12.4                      GM Lesson 12.5                      GM Lesson 12.6                      GM Lesson 12.7                      GM Lesson 12.8</p> <p>Harcourt (old) Text:                      Ch. 17 Lesson 1                      Ch. 17 Lesson 2                      Ch. 18 Lesson 4                      Ch. 18 Lesson 5                      Ch. 19 Lesson 1                      Ch. 19 Lesson 2                      Ch. 19 Lesson 3                      Ch. 19 Lesson 4</p>	<p>closed shape                      end point                      point                      ray                      line segment                      angle                      vertex                      right angle                      intersecting lines                      perpendicular lines                      parallel lines                      rhombus                      rectangle                      quadrilateral                      congruent                      symmetry                      face                      edge                      triangle                      pentagon                      octagon                      hexagon                      polygon                      trapezoid                      tessellation</p>



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2.2.3.A.3		Demonstrate multiplication and division fluency.	None	Students will be able to find whole number quotients and remainders with up to 2 digit dividends and 1 digit divisors.  Students will be able to add and subtract fractions.	Suggestion: use timed tests Go Math! Practice Book Getting Ready for Grade 4 <b>(These lessons are in the teacher planning guide)</b> Lessons 5-11	
2.1.4.B.2		Use place value understanding and properties of operations to perform multi-digit arithmetic.	Divide up to 2-digit dividends by 1-digit divisors w/ answers written as whole number quotients and remainders.	Students will be able to represent and write numbers to ten thousand.	See district worksheets	remainder
2.1.4.C.2		Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	Add and subtract fractions w/ a common denominator (denominator limited to 2, 3, 4, 5, 6, 8, 10; answers do not need to be simplified; no improper fractions as final answer)	Students will be able to represent whole numbers to ten thousand on a number line.	See district worksheets	
2.1.4.B.1		Apply place-value concepts to show an understanding of multi-digit whole numbers.	Demonstrate an understanding that in multi-digit whole numbers (thru 1,000,000) a digit in one place represents ten times what it represents in the place to its right. Ex. Recognize in the number 770, the 7 in the hundreds place is 10x the 7 in the tens place.  Read and write whole numbers in expanded, standard, and word form thru 10,000.00	Make sense of and persevere in solving complex and novel mathematical problems.  Students will be able to communicate and apply appropriate mathematical vocabulary in daily calculations and problem solving.  Students will be able to recite from memory and with fluency, basic multiplication facts.	Go Math! Practice Book Getting Ready for Grade 4 <b>(These lessons are in the teacher planning guide)</b> Lessons 1-4	
					<b>Recommended Time Frame = 60 days</b>	