

## Mathematics Curriculum Grade 4

Anchor		Number	Fourth Grade Expectations	Every fourth grader should be able to:	Text pages or supplementary materials	Date Assessed
<b>4A.Numbers and Operations</b>						
1.	Demonstrate an understanding of numbers, ways of representing numbers, relationships among numbers and number systems	4A.1.1	Use models and/or words to represent quantities as decimals, fractions, or mixed numbers.	4A 1.1.1 Express any whole number through millions place in standard, expanded, or word form. Match amount to an appropriate model (e.g., base ten blocks.)		
				4A 1.1.2 Create, match models, and find approximate location on a number line for common fractions, mixed numbers, and decimals to hundredths.		
				4A 1.1.3 Read, write, and model decimals to the hundredths (using money, hundred squares, etc. as an example.)		
		4A 1.2	Compare quantities and magnitudes of numbers	4A 1.2.1 Compare and/or order whole numbers through millions and decimals through hundredths place, and amounts of money to \$100 using =, >, <. (Limit: 4 numbers to a set being ordered.)		
				4A 1.2.2 Compare and/or order fractions with like and unlike denominators up to twelfths using fractional models and/or a number line.		
		4A.1.3	Develop and/or apply number theory concepts to represent numbers in various ways.	4A 1.3.1 Find, identify, and list factors of a given number through factors of 10.		
4A 1.3.2 Find, identify, and list multiples of a number for multiples not exceeding 100.						
2.	Understand meanings of operations, use operations and understand how they relate to each other.	4A 2.1	Use operations to solve problems (straight computation and word problems.)	4A 2.1.1 Solve problems including word problems involving addition, subtraction, multiplication, and simple division of whole numbers; explain the solution. Limit to two-step problems		
				4A 2.1.2 Solve problems including word problems involving addition, subtraction, or multiplication with decimals through tenths (money to the cent) and explain the solution. Limit to a two-step problem; in multiplication, one factor must be a single-digit whole number.		
3.	Compute accurately and fluently and make reasonable estimates.	4A 3.1	Apply rounding and/or estimation strategies to solve problems.	4A 3.1.1 Round whole numbers to the nearest ten, hundred, thousand, ten thousand, hundred thousand; round money to the nearest dollar.		
				4A 3.1.2 Estimate the answer to addition, subtraction, and multiplication problems using whole numbers through 6 digits (limit multiplication to 2 digits X 1 digit or powers of 10).		
				4A 3.1.3 Use estimation to determine whether an answer is reasonable.		

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<b>4A. Numbers and Operations</b>					
3.	4A 3.2	Compute accurately and fluently without the use of a calculator	4A 3.2.1 Master mental math fluency for basic addition, subtraction, multiplication, and division facts.		
			4A 3.2.2 Multiply whole numbers through 3 digits by a two-digit multiplier.		
			4A 3.2.3 Divide any whole number by a one-digit divisor.		
	4A 3.3	Compute using fractions or decimals (written vertically or horizontally – straight computation only.)	4A 3.3.1 Solve addition and subtraction problems involving decimals through hundredths.		
			4A 3.3.2 Solve addition and subtraction problems with fractions with like denominators and no simplifying necessary.		
<b>4B. Measurement</b>					
1.	4B 1.1	Determine time and/or elapsed time.	4B 1.1.1 Match analog time to digital time.		
			4B 1.1.2 Read time as the number of minutes before or after the hour.		
			4B 1.1.3 Calculate elapsed time in hours and minutes, in days, weeks, months.		
			4B 1.1.4 Determine the beginning or ending time for an event when elapsed time is given.		
	4B 1.2	Convert linear measurements within the same system.	4B 1.2.1 Convert linear measurements within the same system of measurement: <ul style="list-style-type: none"> <li>▪ Metrics using mm, cm, m, km</li> <li>▪ Customary using in., ft., yd.</li> </ul>		

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<b>4B. Measurement</b>						
2.	Apply appropriate techniques, tools, and formulas to determine measurements.	4B 2.1	Select and/or use appropriate tools and/or attributes for measuring quantities.	4B 2.1.1 Use a ruler to measure to the nearest $\frac{1}{4}$ inch or nearest millimeter.		
				4B 2.1.2 Distinguish between area and perimeter of a square of rectangle and when each is appropriate to use.		
				4B 2.1.3 Find the perimeter of a square when one side is given and a rectangle when the length and width are given. (same units)		
		4B 2.2	Estimate measurements of figures and objects.	4B 2.2.1 Make reasonable estimates of weights, lengths, and capacities of familiar objects.		
				4B 2.2.2 Estimate the area of an irregularly shaped figure on a grid.		
<b>4C. Geometry</b>						
1.	Analyze characteristics and properties of two- and three-dimensional geometric shapes and demonstrate understanding of geometric relationships.	4C 1.1	Identify/describe the basic properties of two- or three-dimensional figures.	4C 1.1.1 Identify, classify, compare two-dimensional figures. (circle, triangle, square, parallelogram, trapezoid, rhombus, rectangle, pentagon, hexagon, octagon)		
				4C 1.1.2 Classify three-dimensional figures (cube, rectangular prism, and pyramid) and/or identify the characteristics (faces, edges, vertices.)		
				4C 1.1.3 Draw and identify right triangles.		
		4C 1.2	Represent and/or use properties or relationships of points, lines, line segments, rays, and angles.	4C 1.2.1 Identify, describe, and draw representations for points, lines, line segments, or rays.		
				4C 1.2.2 Identify, describe and draw representations for parallel and perpendicular lines.		
				4C 1.2.3 Classify, describe, and compare angles as acute, right, or obtuse.		

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<b>4C. Geometry</b>						
2.	Identify and/or use the properties of a circle.	4C 2.1	Identify, describe, and define elements of a circle.	4C 2.1.1 Identify, describe, and define diameter, radius, circumference, degree.		
3.	Identify and/or apply concepts of transformation or symmetry.	4C 3.1	Apply the concepts of reflection and symmetry.	4C 3.1.1 Identify and draw congruent figures and angles.		
				4C 3.1.2 Identify and draw the reflection (flip) of a two-dimensional figure.		
				4C 3.1.3 Explore and identify lines of symmetry.		
4.	Locate points or describe relationships using the coordinate plane.	4C 4.1	Locate points on a simple grid.	4C 4.1.1 Match or plot the ordered pair with the appropriate point (or object) on a simple grid.		
<b>4D. Algebra Concepts</b>						
1.	Demonstrate an understanding of patterns, relations, and functions.	4D 1.1	Recognize, describe, extend, create, and/or replicate a variety of patterns.	4D 1.1.1 Identify the rule for a numerical or geometric pattern.		
				4D 1.1.2 Extend of find a missing element in a numerical (whole numbers only) or geometric pattern.		
				4D 1.1.3 Create or continue a numerical or geometric pattern showing three repetitions.		
		4D 1.2	Apply simple function rules.	4D 1.2.1 Determine the missing elements in a function table given the rule.		
				4D 1.2.2 Determine the rule for a function given a completed input/output table.		
2.	Represent and/or analyze mathematical situations using numbers, symbols, words, tables, and graphs.	4D 2.1	Use numbers and symbols to model the concepts of expressions and/or equations.	4D 2.1.1 Write a simple equation for a word problem or match the situation in a word problem with appropriate expressions or equations.		
		4D 2.2	Determine the missing number or symbol in a number sentence.	4D 2.2.1 Solve for a missing number in a simple equation using estimation, guess & check, etc.		
				4D 2.2.2 Identify the missing symbol that makes a number sentence true.		

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<b>4E. Data Analysis and Probability</b>					
1.	Formulate or answer questions that can be addressed with data and/or organize, display, interpret, or analyze data.	4E 1.1	Interpret data shown on tables, charts, line graphs, or pictographs.	4E 1.1.1 Describe, interpret, and/or answer questions based on data shown in tables, charts, bar graphs, line graphs, or pictographs.	
		4E 1.2	Collect, organize, display, and analyze data to answer questions	4E 1.2.2 Organize and display data using a table, bar graph, line graph, or pictograph.	
				4E 1.2.3 Translate information from one type of display to another. (table, tally chart, bar graph, line graph, pictograph)	
2.	Select and/or use appropriate statistical methods to analyze data.	4E 2.1	Use appropriate methods to analyze data.	4E 2.1.1 Determine the mean (average) for a given set of data. Limit the number of entries to six and the mean to a whole number.	
				4E 2.1.2 Identify the mode for a given set of data.	
				4E 2.1.3 Identify the median for a set of data with an odd number of elements.	
3.	Understand and/or apply basic concepts of probability or outcomes.	4E 3.1	Formulate predictions and/or draw conclusions based on data displays or probability.	4E 3.1.1 Conduct probability experiments and/or predict their outcomes based on data from charts graphs or tallies.	
				4E 3.1.2 Explain why some outcomes are certain, more likely, less likely, equally likely, or impossible based on data or chance.	
		4E 3.2	Find all possible combinations or arrangements involving two variables.	4E 3.2.1 Determine or model all possible combinations or arrangements involving two variables and no more than 8 possible arrangements (e.g., Use a tree diagram to determine all combinations of 4 shirts and 2 trousers.)	