

**DIOCESE OF HARRISBURG
MATHEMATICS CURRICULUM – GRADE 1**

Anchor	First Grade Expectations	Every first grader should be able to:	Text pages or supplementary	Date assessed	
1A. Numbers and Operations					
1.	Demonstrate an understanding of numbers, ways of representing numbers, relationships among numbers and number systems.	a. Apply place-value concepts and numeration to counting, ordering, and grouping.	1. Count, read, and write whole numbers to 100.		
			2. Identify the place value of each digit for numerals through 100.		
			3. Skip count by 2's, 3's, 5's, 10's, and 25's.		
			4. Distinguish between odd and even numbers.		
			5. Identify and name ordinal positions "first" through "tenth".		
			6. Order a set of whole numbers from least to greatest or from greatest to least up through 100.		
			7. Match equivalent forms of the same number through 100 using concrete objects, drawing, number words (ex. base 10 blocks: 2 tens and 3 ones = 23.)		
		b. Demonstrate an understanding of one-to-one correspondence.	1. Count objects using one-to-one correspondence.		
			2. Match two sets of objects, using one-to-one correspondence to determine greater than, equal, or less than.		
		c. Use fractions to represent quantities as part of a whole.	1. Use models, drawings, and diagrams to show one half, one third, and one fourth.		
		d. Identify the name and value of coins.	1. Identify and name the value of coins (penny, nickel, dime, quarter.)		
			2. Show different combinations of coins that equal the same value.		
		e. Count, record and compare collection of coins.	1. Count a collection of coins up to one dollar.		
			2. Represent money using a cent sign.		
			3. Compare total values of combinations of coins up to one dollar (penny, nickel, dime, quarter.)		

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Mathematics Curriculum – Grade 1**

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1A. Numbers and Operations				
2.	Understand the meanings and use of operations and understand how they relate to each other.	a. Understand the concepts of addition and subtraction and the relationship between them.	1. Represent the “joining” and “separating” of objects in everyday life.	
			2. Explain and describe the process of addition and subtraction.	
			3. Demonstrate the inverse relationship between addition and subtraction by writing fact families.	
			4. Select, explain, and use an appropriate method (concrete objects, illustrations, calculator, mental math, or pencil and paper) to solve word problems (addition and subtraction).	
3.	Calculate accurately and fluently and make reasonable estimates.	a. Compute addition and subtraction problems accurately.	1. Determine sums through 18, with fluent mastery to sums of 10.	
			2. Determine differences with the minuend (top number) not to exceed 18.	
			3. Determine the sum of three or more one-digit addends with a sum not to exceed 20.	
			4. Solve double-digit addition problems without regrouping.	
			5. Solve double-digit subtraction problems without renaming.	
	b. Make reasonable estimates.	1. Recognize when an estimation is or is not a reasonable approximation for a problem.		

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1B. Measurement					
1.	Demonstrate an understanding of measurable attributes of objects and figures, and the units, systems, and processes of measurement.	a. Determine time.	1. Tell and show time to the hour and half hour on an analog and digital clock.		
			2. Recognize and sequence days of the week and months of the year and seasons.		
		b. Determine temperature.	1. Read temperature from a thermometer (Celsius and Fahrenheit.)		
			c. Use attributes of length, weight, and volume to describe objects.	1. Select an appropriate unit and/or tool for the attribute being measured.	
		2. Compare objects according to length, weight, or volume.			
		3. Estimate attributes of length, weight, or volume.			
2.	Apply appropriate techniques, tools, and formulas to determine measurements.	a. Determine the measurement of objects with standard and non-standard units.	1. Use a ruler to measure to the nearest inch, centimeter, or foot.		
			2. Use a spring or balance scale to find and compare the weight of objects in pounds or kilograms.		
		b. Use measurements to solve problems.	1. Measure liquids using cups, pints, gallons, or liters.		
1C. Geometry					
1.	Analyze characteristics and properties of two- and three- dimensional geometric shapes and demonstrate understanding of geometric relationships.	a. Identify and/or describe two and three-dimensional shapes.	1. Name and identify the two-dimensional shapes- circle, rectangle, square, triangle		
			2. Identify the number of sides and angles of two-dimensional shapes.		
			3. Name and identify the three-dimensional geometric shapes- cone, cube, cylinder, pyramid, rectangular prism, sphere		
			4. Classify and/or sort a set of two or three-dimensional geometric figures by observing and identifying attributes.		
2.	Identify and/or apply concepts of transformations or symmetry.	a. Identify and/or apply concepts of transformations or symmetry.	1. Identify and draw lines of symmetry in two-dimensional figures.		
			2. Identify and draw congruent figures.		

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1D. Algebraic Concepts					
1.	Demonstrate an understanding of patterns, relations, and functions.	a. Recognize and extend a variety of patterns.	1. Recognize and extend simple, repeating patterns with shape, size, color, sound, or number.		
			2. Identify the rule for a simple, repeating pattern or a pattern that could be extended infinitely.		
		b. Determine the missing number or symbol in a number sentence.	1. Determine the missing addend that makes a number sentence true (sums less than 18.)		
			2. Identify the missing symbol (+ or -) that makes a number sentence true.		

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1E. Data Analysis and Probability					
1.	Formulate or answer questions that can be addressed with data and collect, organize, display, interpret or analyze data.	a. Answer questions based on data shown on bar graphs and tally charts.	1. Read and compare data shown on a bar graph. Use concepts of equal to, less than, or greater than.		
			2. Answer questions about data shown on pictographs, tally charts, and bar graphs.		
		b. Organize or display data using bar graphs and tally charts,	1. Complete a bar graph given the data when a labeled and calibrated bar graph is provided.		
			2. Translate information from a tally chart to a bar graph.		
2	Understand and/or apply basic concepts of probability or outcomes.	a. Predict the likelihood of events.	1. Discuss and write about predictions and conclusions using the language of probability: likely, unlikely, probably, possibly, impossible.		
			2. Identify a spinner as fair or unfair.		