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MARYLAND MATHEMATICS VOLUNTARY CURRICULUM CORRELATED TO *MOVING WITH MATH®-BY-TOPIC GRADE 3 (LEVEL B)*

	Student Book	Skill Builders
STANDARD 1: KNOWLEDGE OF ALGEBRA, PATTERNS, AND FUNCTIONS		
Students will algebraically represent, model, analyze, or solve mathematical or real-world problems involving patterns or functional relationships		
A. Patterns and Functions		
1. Identify, describe, extend, and create numeric patterns and functions		
a) Represent and analyze numeric patterns using skip counting •Assessment limit: Use 2, 5, 10 or 100 starting with any whole number (0 - 1000)	BI: 12, 14-16	3-1
b) Represent and analyze numeric patterns using skip counting •Assessment limit: Use 3 or 4 starting with 0, 1, 2, 3 or 4 (0-3)	BI: 12, 14-16	3-1
c) Represent and analyze numeric patterns using skip counting backward •Assessment limit: Use 10 or 100 starting with any whole number (0-1000)	BI: 53	
d) Complete a function table using a given addition or subtraction rule	BI: 13	
2. Identify, describe, extend, and create non-numeric patterns or repeating patterns		
a) Represent and analyze growing patterns using symbols, shapes, designs or pictures •Assessment limit: Start at the beginning, show at least 3 levels but no more than 5 levels, and ask for the next level		
b) Represent and analyze repeating patterns using symbols, shapes, designs, or pictures •Assessment limit: Use no more than 4 objects in the core of the pattern		
B. Expression, Equations, and Inequalities		
1. Write and identify expressions		

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a)	Represent numeric quantities using operational symbols (+, -, x, ÷) ● Assessment limit: Use operational symbols (+ or -) and whole numbers (0 - 50)	BI: 39, 40 BII: 8	9-2
2. Identify, write, solve, and apply equations and inequalities			
a)	Represent relationships using appropriate relational symbols (<, >, or =) and operational symbols (+, -, x, ÷) on either side ● Assessment limit: Use operation symbols (+ or -) and whole numbers (0 - 1000)	BI: 11 BII: 77 BIII: 16-18	
b)	Find the missing number (unknown) in a number sentence (equation) using operational symbols (+, -, x, ÷) ● Assessment limit: Use one operational symbol (+ or -) and whole numbers (0 - 100)	BI: 39 BII: 37, 50, 77	9-2
c)	Find the missing number(s) (unknown) on one or both sides of number sentence (equation)	BI: 39 BII: 37, 50, 77	9-2
C. Numeric and Graphic Representations of Relationships			
1. Locate points on a number line			
a)	Represent whole numbers on a number line ● Assessment limit: Use whole numbers (0-500)	BI: 35, 37, 39, 40 BII: 47	7-2, 8-2
b)	Represent proper fractions on a number line ● Assessment limit: Use fractions that have denominators of 2, 3 or 4		
STANDARD 2: KNOWLEDGE OF GEOMETRY			
Students will apply the properties of one-, two-, or three-dimensional geometric figures to describe, reason, or solve problems about shape, size, position, or motion of objects			
A. Plane Geometric Figures			
1. Analyze the properties of plane geometric figures			
a)	Identify and describe points, lines, line segments, rays and angles	BIII: 32, 34, 35, 37	35-1, 35-2, 36-1, 37-1
b)	Identify or describe polygons ● Assessment limit: Use triangles, quadrilaterals, pentagons, hexagons, or octagons and the number of sides or vertices	BIII: 33	40-2
c)	Identify or describe quadrilaterals ● Assessment limit: Use squares, rectangles, rhombi, parallelograms, and trapezoids and the length of sides	BIII: 33	
d)	Identify triangles, rectangles, or squares as part of a composite figure ● Assessment limit: Use a combination of 2 of the stated polygons		

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2. Analyze geometric relationships		
a) Identify right angles	Bill: 33, 34, 37	35-2, 37-1
B. Solid Geometric Figures		
1. Analyze the properties of solid geometric figures		
a) Identify and describe cubes, rectangular prisms, and triangular prisms •Assessment limit: Use cubes and the number of edges, faces, vertices, or shape of each face	Bill: 40, 41	40-1
C. Representation of Geometric Figures		
1 Represent plane geometric figures		
a) Sketch triangles, quadrilaterals, pentagons, hexagons, octagons, and circles		
D. Congruence		
1. Analyze congruent figures		
a) Identify and describe geometric figures as congruent •Assessment limit: Use the same shape and same size	Bill: 39	39-1
E. Transformations		
1. Analyze a transformation		
a) Identify and describe the results of a slide, flip, and turn •Assessment limit: Use horizontal slide, flip over a vertical line, or turn of 90° clockwise around a given point of a geometric figure or picture		
2. Analyze geometric figures and pictures		
a) Identify and describe symmetry •Assessment limit: Use no more than 4 lines of symmetry	Bill: 38	38-1, 38-2
STANDARD 3: KNOWLEDGE OF MEASUREMENT		
Students will identify attributes, units, or systems of measurements or apply a variety of techniques, formulas, tools, or technology for determining measurement		
A. Measurement Units		
1. Read customary and metric measurement units		
a) Estimate and determine length •Assessment limit: Use the nearest centimeter or 1/2 inch	Bill: 48-50, 52, 56, 57	43-1 to 43-4, 45-1
b) Tell time in days, hours, minutes, and seconds •Assessment limit: Use the nearest minutes using an analog clock	Bill: 44, 45	41-1 to 43-3

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c)	Estimate and read temperature ● Assessment limit: Use the nearest degree (°F or °C)	Bill: 46	42-2
d)	Estimate and determine weight of objects ● Assessment limit: Use the nearest pound or ounce	Bill: 46, 54, 59	42-2
B. Measurement Tools			
1. Measure in customary and metric units			
a)	Measure length of objects and pictures of objects using a ruler, a tape measure, a yardstick, or a meter stick ● Assessment limit: Use a ruler and the nearest centimeter or 1/2 inch	Bill: 48-50	43-1 to 43-4, 45-1
b)	Measure capacity of containers to the nearest cup, pint, quart, gallon, milliliter, and liter using graduated containers	Bill: 53, 54, 58	44-2, 45-2
c)	Measure weight of objects to the nearest ounce and pound and the mass of an object to the nearest gram and kilogram	Bill: 46, 59	44-2, 45-2
C. Applications in Measurement			
1. Apply measurement concepts			
a)	Estimate and determine the perimeter of geometric figures and pictures on a grid ● Assessment limit: Use counting and whole numbers (0 - 50)	Bill: 61-64, 67	46-1, 46-2
b)	Estimate and determine the area of geometric figures and pictures on a grid ● Assessment limit: Use counting and whole numbers (0 - 50)	Bill: 65-67	
2. Calculate equivalent measurements			
a)	Determine equivalent units of length ● Assessment limit: Use 12 inches = 1 foot and 3 feet = 1 yard and whole numbers (0 - 30)	Bill: 51, 54, 55, 57	44-1
STANDARD 4: KNOWLEDGE OF STATISTICS			
Students will collect, organize, display, analyze or interpret data to make decisions or predictions			
A. Data Displays			
1. Collect, organize, and display data			
a)	Collect data by conducting surveys		
b)	Organize and display data to make tables using a variety of categories and sets of data ● Assessment limit: Use no more than 4 categories from one set of data and whole numbers (0 - 1000)	Bill: 74	

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c) Organize and display data to make pictographs using a variety of scales ● Assessment limit: Use scales of 2:1, 4:1 or 10:1 and whole numbers (0 - 100)		50-1
d) Organize and display data to make single bar graphs using a variety of categories and intervals ● Assessment limit: Use no more than 4 categories of data with intervals of 1, 2, 5 or 10 and whole numbers (0-100)	Bill: 74	50-2
e) Organize and display data to make line plots using a variety of intervals		29-2, 50-2, 50-5
Data Analysis		
1. Analyze data		
a) Interpret data contained in tables using a variety of categories and intervals ● Assessment limit: Use no more than 4 categories from one set of data and whole numbers (0 -1000)	BI: 49, 51 Bill: 55, 79	29-2
b) Interpret data contained in pictographs using a variety of categories and intervals ● Assessment limit: Use scales of 2:1, 4:1 or 10:1 and whole numbers (0 - 100)	Bill: 72, 73	50-1
c) Interpret data contained in single bar graphs using a variety of categories and intervals ● Assessment limit: Use no more than 4 categories of data, intervals of 1, 2, 5, or 10 and whole numbers (0 - 100)	Bill: 75	50-2
d) Interpret data contained in line plots using a variety of intervals		
STANDARD 5: KNOWLEDGE OF PROBABILITY		
Students will use experimental methods or theoretical reasoning to determine probabilities to make predictions or solve problems about events whose outcomes involve random variation		
A. Sample Space		
1. Identify possible outcomes		
a) Identify possible outcomes that make up the sample space for a given real life situation	Bill: 77-79	50-3
b) Identify possible outcomes that make up the sample space for a given experiment such as: flipping a coin, spinning a spinner, and rolling a number cube	Bill: 77-79	50-3
B. Theoretical Probability		
1. Identify the probability of one simple event		

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a) Describe the probability of an event using words ● Assessment limit: Use probability terms of more (or most) likely, less (or least) likely, or equally likely	Bill: 77	50-4
STANDARD 6: KNOWLEDGE OF NUMBER RELATIONSHIPS AND COMPUTATION/ARITHMETIC		
Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil, or technology		
A. Knowledge of Number and Place Value		
1. Apply knowledge of whole numbers and place value		
a) Read, write, and represent whole numbers using symbols, words, and models ● Assessment limit: Use whole numbers (0 - 10,000)	Bl: 26, 27, 32, 33	4-1, 4-2, 5-1, 6-6
b) Express whole numbers using expanded form ● Assessment limit: Use whole numbers (0 - 10,000)	Bl: 8, 19, 21	6-2, 6-3
c) Identify the place value of a digit in a whole number ● Assessment limit: Use whole numbers (0 - 9,999)	Bl: 3-7, 9, 18-20, 28, 29	1-1 to 1-3, 6-1, 6-4, 6-5
d) Compare, order, and describe whole numbers with or without using relational symbols (<, >, =) ● Assessment limit: Use no more than four whole numbers (0 - 10,000)	Bl: 10-12, 22-25, 30, 31	2-1 to 2-4
2. Apply knowledge of fractions		
a) Read, write, and represent fractions as parts of a single region using symbols, words, and models ● Assessment limit: Use fractions with denominators of 2, 3 or 4	Bill: 3-9	30-3, 32-1
b) Read, write and represent fractions as parts of a set using symbols, words, and models ● Assessment limit: Use fractions with denominators of 2, 3, or 4, and use sets of 2, 3, 4 items, respectively	Bill: 10-14	31-1, 31-2
3. Apply knowledge of money		
a) Represent money amounts in different ways * Assessment limit: Use money amounts (\$0 - \$100)	Bl: 28, 33, 45 Bill: 68-70	47-1
b) Determine the value of a given set of mixed currency ● Assessment limit: Use coins and bills (\$0 - \$00)	Bl: 28, 33, 45 Bill: 68-70	47-1
c) Compare the value of two sets of mixed currency	Bl: 28, 33, 45 Bill: 68-70	47-1
B. Number theory		
1. Apply number relationships		
a) Identify and describe whole numbers as even or odd ● Assessment limit: Use whole numbers (0 - 100)	Bl: 14	

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C. Number Computation		
1. Analyze number relations and compute		
a) Add numbers using a variety of strategies ● Assessment limit: Use no more than 3 addends, with no more than 3 digits in each addend and whole numbers (0-1000)	BI: 44-48, 53-54	
b) Subtract numbers using a variety of strategies ● Assessment limit: Use no more than 3 digits in the minuend or subtrahend and whole numbers (0-999)	BI: 56-63	
c) Solve addition and subtraction word problems	BI: 66-68, 73-75	
d) Add and subtract money amounts	BIII: 68, 70-71	
e) Identify and apply the concept of inverse operations to addition and subtraction	BI: 58	
f) Represent multiplication and division basic facts using number sentences, pictures, and drawings ● Assessment limit: Use basic facts of no more than $9 \times 9 = 81$	BI: 3-7, 9-11, 42-43, 46, 50-52	
g) Identify and use properties of multiplication ● Assessment limit: Use the properties of commutative, identity, or zero and whole numbers (0-20)	BI: 8	
h) Multiply a one-digit factor by a two-digit factor using models, pictures, and drawings	BI: 19-26	
i) Divide a two-digit dividend by a one-digit divisor using models, pictures, and drawings	BI: 59-60, 62-65	
j) Identify and apply the concept of inverse operations to multiplication and division	BI: 44, 48	
k) Write a word problem based on multiplication or division number sentences	BI: 31, 71	
2. Estimation		
a) Determine the reasonableness of sums and differences	BI: 70-72	
STANDARD 7: PROCESSES OF MATHEMATICS		
Students demonstrate the processes of mathematics by making connections and applying reasoning to solve and to communicate their findings.		
A. Problem Solving		
1. Apply a variety of concepts, processes, and skills to solve problems		

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a)	Identify the question in the problem	BI: 24, 51, 64-69, 73-75 BII: 16, 17, 28, 37, 45, 47, 53-55, 57-59, 61, 70, 74, 76, 77, 79 BIII: 60, 71	10-5, 15-5 to 15-7, 29-3, 34-5, 48-1, 48-2, 49-1 to 49-7
b)	Decide if enough information is present to solve the problem	BI: 24, 51, 64-69, 73-75 BII: 16, 17, 28, 37, 45, 47, 53-55, 57-59, 61, 70, 74, 76, 77, 79 BIII: 60, 71	10-5, 15-5 to 15-7, 29-3, 34-5, 48-1, 48-2, 49-1 to 49-7
c)	Make a plan to solve a problem	BI: 24, 51, 64-69, 73-75 BII: 16, 17, 28, 37, 45, 47, 53-55, 57-59, 61, 70, 74, 76, 77, 79 BIII: 60, 71	10-5, 15-5 to 15-7, 29-3, 34-5, 48-1, 48-2, 49-1 to 49-7
d)	Apply a strategy, i.e., draw a picture, guess and check, finding a pattern, writing an equation	BI: 24, 51, 64-69, 73-75 BII: 16, 17, 28, 37, 45, 47, 53-55, 57-59, 61, 70, 74, 76, 77, 79 BIII: 60, 71	10-5, 15-5 to 15-7, 29-3, 34-5, 48-1, 48-2, 49-1 to 49-7
e)	Select a strategy, i.e., draw a picture, guess and check, finding a pattern, writing an equation	BI: 24, 51, 64-69, 73-75 BII: 16, 17, 28, 37, 45, 47, 53-55, 57-59, 61, 70, 74, 76, 77, 79 BIII: 60, 71	10-5, 15-5 to 15-7, 29-3, 34-5, 48-1, 48-2, 49-1 to 49-7
f)	Identify alternative ways to solve a problem	BI: 24, 51, 64-69, 73-75 BII: 16, 17, 28, 37, 45, 47, 53-55, 57-59, 61, 70, 74, 76, 77, 79 BIII: 60, 71	10-5, 15-5 to 15-7, 29-3, 34-5, 48-1, 48-2, 49-1 to 49-7
g)	Show that a problem might have multiple solutions or no solution		

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h)	Extend the solution of a problem to a new problem situation	BI: 39 BII: 51	
B. Reasoning			
1. Justify ideas or solutions with mathematical concepts or proofs			
a)	Use inductive or deductive reasoning	BI: 17 BII: 16, 77	
b)	Make or test generalizations	BI: 39 BIII: 22-23	
c)	Support or refute mathematical statements or solutions	BI: 39-40	
d)	Use methods of proof, i.e., direct, indirect, paragraph, or contradiction		
C. Communication			
1. Present mathematical ideas using words, symbols, visual displays, or technology			
a)	Use multiple representations to express concepts or solutions	BI: 36 BII: 7, 54	
b)	Express mathematical ideas orally	BII: 79	
c)	Explain mathematical ideas in written form	BI: 39-40	
d)	Express solutions using concrete materials	BI: 18-21 BII: 7, 17	
e)	Express solutions using pictorial, tabular, graphical, or algebraic methods	BI: 36 BII: 9, 15 BIII: 4	
f)	Explain solutions in written form	BI: 39-40	
g)	Ask questions about mathematical ideas or problems	BI: 24 BII: 79 BIII: 11	
h)	Give or use feedback to revise mathematical thinking	pre/post tests	
D. Connections			
1. Relate or apply mathematics within the discipline, to other disciplines, and to life			
a)	Identify mathematical concepts in relationship to other mathematical concepts	BI: 14-15 BII: 3-4, 44, 46	
b)	Identify mathematical concepts in relationship to other disciplines	BI: 75 BII: 14 BIII: 67	
c)	Identify mathematical concepts in relationship to life	BI: 51 BII: 19, 28, 33 BIII: 36, 40, 52, 65	

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d)	Use the relationship among mathematical concepts to learn other mathematical concepts	BI: 11 BII: 26 BIII: 28	
	BI: <i>Numeration, Addition & Subtraction</i>		
	BII: <i>Multiplication & Division</i>		
	BIII: <i>Fractions, Geometry & Measurement</i>		