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MARYLAND MATHEMATICS VOLUNTARY CURRICULUM CORRELATED TO *MOVING WITH MATH*® MATH-BY-TOPIC LEVEL A (GRADE 1)

	Student Book	Skill Builders
STANDARD 1: KNOWLEDGE OF PATTERNS, ALGEBRA 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		
a) Represent and analyze numeric patterns using skip counting by multiples of 2 and 10, starting with any whole number, and using manipulatives and the 100 chart	AI: 50, 51, 70-73 All: 71, 72	5-2, 6-4, 9-1, 30-1
b) Represent and analyze numeric patterns using skip counting backward by 10's starting with a multiple of 10, and using manipulatives		
2. Identify, copy, describe, create and extend non-numeric patterns		
a) Represent and analyze growing patterns kinesthetically, such as: clap/snap, clap/snap/snap, clap/snap/snap/snap...		
b) Represent and analyze repeating patterns using no more than 3 different objects in the core of the pattern	AI: 65-69	9-1, 14-1
c) Transfer a repeating pattern from one medium to a different medium using no more than 3 different objects in the core of the pattern	AI: 50, 51, 65-67	9-1, 14-1
d) Identify patterns in real-world situations		
B. Expressions, Equations, and Inequalities		
1. Write and identify expressions		
a) Represent numeric quantities using concrete and pictorial representations and operational symbols (+, -) and whole numbers to 25	AI: 6, 8, 10-12, 20-23 All: 4-11, 13-36	16-9, 17-1, 18-1
2. Identify, write, and solve equations and inequalities		

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a) Represent relationships using the terms greater than, less than, and equal to for quantities up to 100	AI: 18, 19, 27, 37 All: 4	6-1, 9-3, 9-5
b) Find the missing number (unknown) in a number sentences using operational symbols (+, -) with whole numbers to 20 using pictures and manipulatives	AI: 71 All: 18	3-1, 3-2, 16-2, 16-8, 26-5
C. Numeric and Graphic Representations of Relationships		
1. Locate points on a number line		2-3, 6-3
a) Identify and represent whole numbers up to 50 on a number line using manipulatives and symbols	AI: 12, 13, 25 All: 37, 49 All: 4, 8, 9	2-3, 6-3
STANDARD 2: KNOWLEDGE OF GEOMETRY		
Students will apply the properties of one-, two-, or three-dimensional geometric figure to describe, reason, or solve problems about shape, size, position, or motion of objects		
A. Plane Geometric Figures		
1. Recognize and apply the properties/attributes of plane geometric figures		
a) Identify, name, and compare triangles, circles, squares, rectangles, and rhombi by their attributes	AI: 63, 64 All: 12, 13, 15-19	37-1, 38-1, 39-1, 40-1
b) Create models of triangles, circles, squares, and rectangles with varied materials	AI: 68	
c) Combine and subdivide squares and triangles	AI: 68 All: 28-37	45-3
B. Solid Geometric Figures		
1. Recognize and use the attribute of solid geometric figures		
a) Identify and compare cubes, spheres, cylinders, pyramids, cones, and rectangular prisms	All: 65, 66	
C. Representation of Geometric Figures		
1. Represent plane geometric figures		
a) Sketch triangles, circles, squares, rectangles, and rhombi	All: 14	
D. Congruence		
1. Identify congruent figures		

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a) Match congruent figures	AI: 63, 64 All: 20-24, 26, 27	11-1, 43-1, 44-1, 45-1, 45-2
E. Transformations		
1. Recognize a transformation		
a) Use the direction, location, and position words right and left	All: 6-8, 10, 11, 25	32-1, 33-1, 36-1
b) Apply spatial reasoning in activities such as: pattern block		
c) Identify and demonstrate slides and flips using manipulatives		
2. Analyze geometric figures and pictures		
a) Demonstrate symmetry in basic shapes and pictures by paper folding and drawing a line of symmetry		
STANDARD 3: KNOWLEDGE OF MEASUREMENT		
Students 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 measurement units		
a) Read a calendar to identify days of the week and months of the year	AI: 77, 78 All: 52	49-3
b) Tell time in intervals of hours and half-hours using an analog clock	All: 46-51	49-1, 49-2
c) Compare the same time on analog and digital clocks	All: 51	49-1, 49-2
d) Read a thermometer to tell temperature to the nearest 10 degrees Fahrenheit		
e) Compare and order objects by weight using a spring scale and a bathroom scale		
B. Measurement Tools		
1. Measure in customary units		
a) Measure length of objects and pictures of objects to the nearest inch using a ruler	All: 53, 54, 57	50-1, 50-2
b) Identify and compare units of capacity using cups and gallons	All: 63	

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c) Compare and order objects by weight in pounds using a spring scale and a bathroom scale		
d) Describe the attributes of length, weight, and capacity	All: 53, 54, 64	50-1 to 50-3
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) Collect data on tally charts		50-6
c) Organize and display data to make picture graphs		50-4, 50-6
d) Organize and display data to make single bar graphs		50-4, 50-6
B. Data Analysis		
1. Analyze data		
a) Interpret data contained in tables	All: 78	29-6
b) Interpret data contained in picture graphs using a variety of categories with 1:1 intervals	All: 76, 77	50-7
c) interpret data contained in single bar graphs	All: 76, 77	
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) Recognize that a real life situation may have more than one outcome such as a coin having heads or tails	All: 59-62	51-1 to 51-3
STANDARD 6: KNOWLEDGE OF NUMBER RELATIONSHIPS AND COMPUTATIONAL 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		

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1. Apply knowledge of whole numbers and place value		
a) Use concrete materials to compose and decompose quantities up to 20	AI: 12, 20, 22, 23,	1-1 to 1-11, 4-1 to 4-5, 5-1, 16-6
b) Identify multiple representations for a number, such as: 12, 6 + 6, dozen	AI: 7, 11, 72,	15-5, 16-6, 16-9, 17-1
c) Demonstrate instant recognition of quantities in patterned sets	AI: 22, 23, 29	5-3, 31-1
d) Use the numbers of 5 and 10 as anchors in relationship to other numbers	AI: 20-24, 29	5-3
e) Read, write, and represent whole numbers up to 100 and beyond using models, symbols, and words	AI: 4, 5, 7-9, 11, 20, 24, 30, 38-43, 45-49	5-3, 7-1, 7-2, 8-1, 8-2
f) Express whole numbers up to 99 using expanded form	AI: 22-24, 29-31, 38-44, 75	5-3
g) Identify the place value of a digit in a whole number up to 99	AI: 31, 42-44	5-3, 5-4
h) Compare and order whole numbers up to 99 using terms such as: greater than, less than, equal to	AI: 12, 14-19, 27, 37	3-2, 6-1, 9-3, 9-5
i) Estimate quantities up to 50 and use the term "about"	AI: 74 A3: 74	
j) Count to 100	AI: 4, 6, 10, 20, 24, 26, 32	5-3
k) Count forward and backward starting with numbers other than one	AI: 28, 33-36 AIII: 9	6-2, 9-2, 9-4, 35-1
l) Use ordinal numbers to indicate position: first through tenth	AI: 60-62	13-1, 13-2
2. Apply knowledge of fractions		
a) Read, write, and represent fractions as parts of a single region using symbols and models with denominators of 2 or 4	AIII: 29-37	41-1, 42-1 to 42-4
b) Read, write, and represent halves as parts of a set using pictures and models	AIII: 29, 30	41-1
3. Apply knowledge of money		
a) Determine the value of a given set of same currency up to \$1	AIII: 38-45	46-1, 46-2, 47-1, 47-2, 48-1, 48-2,
b) Demonstrate monetary value using real or play coins	AIII: 38-45, 67-73	46-1, 46-2, 47-1, 47-2, 48-1, 48-2,

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c) Compare the value of 2 sets of mixed currency up to \$1.00	All: 38-45	46-1, 46-2, 47-1, 47-2, 48-1, 48-2
C. Number Computation		
1. Analyze number relations and compute		
a) Develop strategies for addition and subtraction basic facts such as : counting on, counting back, making ten, doubles, and doubles plus one	All: 4-43	15-1 to 15-4, 16-1, 16-3 to 16-7, 16-9, 18-1 to 18-7, 19-1 to 19-7, 20-1, 21-1, 22-1, 22-3, 23-1, 24-1 to 24-3, 25-1 to 25-3, 26-1 to 26-4, 30-1
b) Solve a given word problem based on addition or subtraction situation	All: 4, 5, 12, 15, 25, 37, 38, 48, 53, 55, 58, 62-70, 73, 74 All: 70	16-6, 27-1, 27-2
c) Identify the concept of inverse operation to addition and subtraction		
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		
a) Identify the question in the problem	All: 4, 5, 12, 25-27, 32, 37, 38, 44, 62-70, 73, 74 All: 70	27-1 to 27-3, 28-1 to 28-3, 29-1 to 29-5
b) Decide if enough information is present to solve the problem	All: 4, 5, 12, 25-27, 37, 38, 44, 62-70, 73, 74	27-1 to 27-3, 28-1 to 28-3, 29-1 to 29-5
c) Make a plan to solve a problem	All: 4, 5, 12, 25-27, 37, 38, 44, 62-70, 73, 74	27-1 to 27-3, 28-1 to 28-3, 29-1 to 29-5
d) Apply a strategy, i.e., draw a picture, guess and check, finding a pattern, writing an equation	All: 4, 5, 12, 25-27, 37, 38, 44, 62-70, 73, 74	27-1 to 27-3, 28-1 to 28-3, 29-1 to 29-5

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e) Select a strategy, i.e., draw a picture, guess and check, finding a pattern, writing an equation	All: 4, 5, 12, 25-27, 37, 38, 44, 62-70, 73, 74	27-1 to 27-3, 28-1 to 28-3, 29-1 to 29-5
f) Identify alternative ways to solve a problem	All: 26-27, 37, 38, 44, 62-70, 73, 74	27-1 to 27-3, 28-1 to 28-3, 29-1 to 29-5
g) Show that a problem might have multiple solutions or no solution		
h) Extend the solution of a problem to a new problem situation		
B. Reasoning		
1. Justify ideas or solutions with mathematical concepts or proofs		
a) Use inductive or deductive reasoning	All: 5	
b) Make or test generalizations		
c) Support or refute mathematical statements or solutions		
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		
b) Express mathematical ideas orally		
c) Explain mathematical ideas in written form		
d) Express solutions using concrete materials		
e) Express solutions using pictorial, tabular, graphical, or algebraic methods	All: 37-42	
f) Explain solutions in written form		
g) Ask questions about mathematical ideas or problems		
h) Give or use feedback to revise mathematical thinking		
D. Connections		
1. Relate or apply mathematics within the discipline, to other disciplines, and to life		

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a) Identify mathematical concepts in relationship to other mathematical concepts			
b) Identify mathematical concepts in relationship to other disciplines			
c) Identify mathematical concepts in relationship to life		All: 75	
d) Use the relationship among mathematical concepts to learn other mathematical concepts			
AI: Numeration			
All: Addition & Subtraction			
All: Fractions, Geometry & Measurement			