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MARYLAND MATHEMATICS VOLUNTARY CURRICULUM CORRELATED TO *MOVING WITH MATH®* EXTENSIONS GRADE 2

		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 2, 5 1st 10 starting with any whole number and using whole numbers to 100	23	30-1 to 30-3, 31-1, 31-2
b)	Represent and analyze numeric patterns using skip counting backward by 10's starting with any 2-digit whole number		
c)	Recognize a function table as a relationship between numbers		
d)	Complete a function table with a given one-operation rule (+, -) using whole numbers		
2.	**Identify, copy, describe, create, and extend non-numeric patterns**		
a)	Represent and analyze growing patterns that start at the beginning and show no more than 3 levels, and ask for the next level, using symbols, shapes, designs, and pictures	24	14-1
b)	Represent and analyze repeating patterns using 3 different objects in the core of the pattern	24	14-1
c)	Transfer a repeating pattern from one medium to 2 different media using no more than 3 different objects in the core of the pattern such as red, green, red, green,...		
	B. Expressions, Equations, and Inequalities		
1.	**Write and identify expressions**		
a)	Represent numeric quantities using operational symbols (+, -), and whole numbers to 25		

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2.	**Identify, write, and solve equations and inequalities**		
a)	Represent relationships using appropriate relational symbols (>, <, =) and operational symbols (+, -) with whole numbers to 100	4	
b)	Find the missing number (unknown) in a number sentence using operational symbols (+, -) with whole numbers up to 50		
	C. Numeric and Graphic Representations of Relationships		
1.	**Locate points on a number line**		
a)	Represent whole numbers up to 100 on a number line	17, 18, 41, 47	20-1, 50-3
	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.	**Recognize and apply the properties/attributes of plane geometric figures**		
a)	Identify and describe sides and corners		
b)	Identify and describe quadrilaterals such as; squares, rectangles, rhombi		
c)	Identify and describe polygons by the number of sides, such as: triangles, squares, rectangles, hexagons, octagons		
d)	Combine and subdivide squares, triangles, and rectangles to identify a new shape		
	B. Solid Geometric Figures		
1.	**Analyze the properties of solid geometric figures**		
a)	Compare two- and three-dimensional shapes such as: square to a cube, square and rectangle to a rectangular prism.		
	C. Representation of Geometric Figures		
1.	**Represent plane geometric figures**		
a)	Sketch plane figures		

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	D. Congruence		
1.	**Compare congruent figures**		
a)	Describe congruent figures as having the same size and shape	63	11-1, 37-2, 38-2, 39-2, 40-2, 43-1, 44-1, 45-1
	E. Transformations		
1.	**Recognize a transformation**		
a)	Apply visualization and spatial reasoning in activities such as: tangrams		
b)	Identify and demonstrate slides, flips, and turns		
2.	**Analyze geometric figures and pictures**		
a)	Recognize that basic shapes have several lines of symmetry		
b)	Demonstrate symmetry in basic shapes and pictures by drawing 2 lines of symmetry		
	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)	Read the scale on a ruler to identify length, in inches		
b)	Tell time in intervals of 5 minutes using an analog clock	54	49-3
c)	Compare the same time on analog and digital clocks	55	49-2, 49-4
d)	Read a thermometer to the nearest 5 degree (F and C) on a thermometer with a scale of 10 degree intervals		
e)	Identify and compare the weight of objects to the nearest pound		
	B. Measurement Tools		
1.	**Measure in customary and metric units**		
a)	Measure length of objects and pictures of objects using a ruler or tape measure to the nearest inch, centimeter, and foot	61	10-1, 12-1, 50-1
b)	Measure capacity of objects using cup, pint, quart, liter, and gallon		
c)	Measure objects to the nearest pound and kilogram		

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d)	Select and use appropriate units of measure for length/height, weight, and capacity		
	C. Applications in Measurement		
1.	Apply measurement concepts		
a)	Develop the concept of perimeter by counting units around a picture or geometric shape		
b)	Develop the concept of area by counting square units within a picture or geometric shape		
2.	Calculate to determine equivalent units		
a)	Recognize equivalent units of 12 inches = 1 foot		
	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 in tables		
c)	Organize and display data to make pictographs using scales of 1:1 and 2:1		
d)	Organize and display data to make single bar graphs	62	32-1, 33-1, 34-1, 35-1, 36-1, 37-1, 38-1, 39-1, 40-1, 50-2
	B. Data Analysis		
1.	Analyze data		
a)	Interpret data contained in tables		
b)	Interpret data contained in pictographs using scales of 1:1 and 2:1		
c)	Interpret data contained in single bar graphs using a variety of categories and intervals of 1, 2, 5, and 10		
	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		

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a)	Identify some possible outcomes that make up the sample space such as on a number cube rolling a 2		
	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		
1.	Apply knowledge of whole numbers and place value		
a)	Use concrete materials to compose and decompose quantities up to 100	1 ,6	1-1
b)	List multiple representations for a number	1, 6, 29	1-1
c)	Develop a sense of the size of a number in relation to other numbers		
d)	Use the numbers of 10, 50 and 100 as anchors in relationship to other numbers	5, 19, 25, 26, 42	4-1, 21-1, 21-2, 31-1, 31-2
e)	Read, write, and represent whole numbers using models, symbols, and words through 1000	1, 6, 20, 28-30	1-1, 5-1, 5-2, 7-1, 8-1
f)	Express whole numbers up to 999 using expanded form		
g)	Identify the place value of a digit in whole numbers up to 999	27	9-1
h)	Compare and order whole numbers up to 999 using words and relational symbols (>, <, =)	2-4, 7	2-1, 3-1
I)	Estimate quantities up to 100 using a reference point such as 10 and the terminology “about”		
j)	Count forward by; 2’s, 5’s, and 10’s starting with numbers other than one	2, 3, 19	30-1 to 30-3, 31-1, 31-2
k)	Count backward by 2’s 5’s and 10’s from a multiple of that number		
l)	Use ordinal numbers to indicate position up to thirty-first	22	13-1
2.	Apply knowledge of fractions		
a)	Read, write, and represent fractions as parts of a single region using symbols or models with denominators of 2, 3 or 4	64	41-1, 42-1
b)	Read, write, and represent halves or fourths as parts of a set using symbols, words and models	64	41-1, 42-1

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3.	**Apply knowledge of money**		
a)	Determine the value of a given set of mixed currency up to $10	57-60	47-1, 48-1, 48-2
b)	Represent money amounts up to $10	57-60	47-1, 48-1, 48-2
c)	Compare the value of 2 sets of mixed currency up to $10		
	B. Number Theory		
1.	**Apply number relationships**		
a)	Build and describe models of even and odd numbers using concrete materials, and discuss the models		
	C. Number Computation		
1.	**Analyze number relations and compute**		
a)	Demonstrate proficiency with addition and subtraction basic facts using a variety of strategies	10-12, 14, 15, 31-36, 42, 43, 45, 46, 48-53	15-1, 16-2, 16-4, 17-1, 18-1, 19-1, 21-1, 21-2, 23-1, 24-1 to 24-4, 25-1 to 25-3, 26-1
b)	Add no more than 3 whole number addends wit no more than 2 digits in each addend and a sum of no more than 100	10-12, 31-33, 42, 43, 45, 46	15-1, 16-4, 17-1, 18-1, 23-1, 24-1 to 24-4
c)	Subtract whole numbers with no more than 2 digits in the minuend or the subtrahend	14, 15, 34, 48-53	16-2, 19-1, 25-1 to 25-3, 26-1 to 26-4
d)	Solve word problems based on addition or subtraction situations	9, 39, 44	22-1, 22-2, 27-1, 28-1
e)	Write word problems for addition and subtraction situations		22-1, 22-2, 27-1, 28-1
f)	Add and subtract money amounts up to $1		
g)	Apply the concept of inverse operations to addition and subtraction	16	16-3
h)	Build equal groups to model multiplication		
I)	Build groups that share equally for division		
2.	**Estimation**		
a)	Determine the reasonableness of sums and differences		

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	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		
	Apply a variety of concepts, processes, and skills to solve problems		
1.	Identify the question in the problem		
a)	Decide if enough information is present to solve the problem	9, 13, 37-40	27-1, 28-1, 29-1 to 29-3
b)	Make a plan to solve a problem	9, 13, 37-40	27-1, 28-1, 29-1 to 29-3
c)	Apply a strategy, I.e., draw a picture, guess and check, finding a pattern, writing an equation	9, 13, 37-40	27-1, 28-1, 29-1 to 29-3
d)	Select a strategy, I.e., draw a picture, guess and check, finding a pattern, writing an equation	9,13,37-40	27-1, 28-1, 29-1 to 29-3
e)	Identify alternative ways to solve a problem	9, 13, 37-40	27-1, 28-1, 29-1 to 29-3
f)	Show that a problem might have multiple solutions or no solution		
g)	Extend the solution of a problem to a new problem situation		
h)			
	B. REASONING		
	Justify ideas or solutions with mathematical concepts or proofs		
1.	Use inductive or deductive reasoning		
a)	Make or test generalizations		
b)	Support or refute mathematical statements or solutions		
c)	Use methods of proof, I.e., direct, indirect, paragraph, or contradiction		
	Communication		
	Present mathematical ideas using words, symbols, visual displays, or technology		
1.	Use multiple representations to express concepts or solutions		
a)	Express mathematical ideas orally		
b)	Explain mathematically ideas in written form		

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c)	Express solutions using concrete materials		
d)	Express solutions using pictorial, tabular, graphical, or algebraic methods		
e)	Explain solutions in written form		
f)	Ask questions about mathematical ideas or problems		
g)	Give or use feedback to revise mathematical thinking		
h)			
	D. Connections		
	Relate or apply mathematics within the discipline, to other disciplines, and to life		
1.	Identify mathematical concepts in relationship to other mathematical concepts		
a)	Identify mathematical concepts in relationship to other disciplines		
b)	Identify mathematical concepts in relationship to life		
c)	Use the relationship among mathematical concepts to learn other mathematical concepts		
d)	Use the relationship among mathematical concepts to learn other mathematical concepts		