



# Math Teachers Press, Inc.

4850 Park Glen Road, Minneapolis, MN 55416  
 phone (800) 852-2435 fax (952) 546-7502

Dec. 05

## MARYLAND MATHEMATICS VOLUNTARY CURRICULUM CORRELATED TO *MOVING WITH MATH*<sup>®</sup> MATH-BY-TOPIC LEVEL A (GRADE 2)

|  | Student Book   | Skill Builders      |
|--|--|---------------------|
| <b>STANDARD 1. KNOWLEDGE OF PATTERNS, ALGEBRA AND FUNCTIONS</b>  |  |                     |
| Students will algebraically represent, model, analyze, or solve mathematical or real-world problems involving patterns or functional relationships                             |  |                     |
| <b>A. Patterns and Functions</b>   |  |                     |
| <b>1. Identify, describe, extend, and create numeric patterns</b>  |  |                     |
| 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                                     | <b>AI:</b> 50, 51, 7-73<br><b>All:</b> 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 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  |  |                     |
| <b>2. Identify, copy, describe, create, and extend non-numeric patterns</b>  |  |                     |
| 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 |  |                     |
| b) Represent and analyze repeating patterns using 3 different objects in the core of the pattern   |  |                     |
| 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>B. Expressions, Equations, and Inequalities</b>   |  |                     |
| <b>1. Write and identify expressions</b>   |  |                     |
| a) Represent numeric quantities using operational symbols (+, -), and whole numbers to 25  | <b>AI:</b> 6, 8, 10-12, 20-23<br><b>All:</b> 4-11, 13-36 | 16-9, 17-1, 18-1    |

|   | Student Book   | Skill Builders             |
|---|--|----------------------------|
| <b>2. Identify, write, and solve equations and inequalities</b>   |  |                            |
| a) Represent relationships using appropriate relational symbols (>, <, =) and operational symbols (+, -) with whole numbers to 100  | <b>AI:</b> 18, 19, 27, 37<br><b>All:</b> 4                         | 6-1, 9-3, 9-5              |
| b) Find the missing number (unknown) in a number sentence using operational symbols (+, -) with whole numbers up to 50  | <b>AI:</b> 71<br><b>All:</b> 18                                    | 3-1, 3-2, 16-2, 16-8, 26-5 |
| <b>C. Numeric and Graphic Representations of Relationships</b>  |  |                            |
| <b>1. Locate points on a number line</b>  |  | 2-3, 6-3                   |
| a) Represent whole numbers up to 100 on a number line   | <b>AI:</b> 12, 13, 25<br><b>All:</b> 37, 49<br><b>All:</b> 4, 8, 9 | 2-3, 6-3                   |
| <b>STANDARD 2: KNOWLEDGE OF GEOMETRY</b>  |  |                            |
| 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 |  |                            |
| <b>A. Plane Geometric Figures</b>   |  |                            |
| <b>1. Recognize and apply the properties/attributes of plane geometric figures</b>  |  |                            |
| 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   | <b>AI:</b> 63, 64<br><b>All:</b> 12, 13, 15-19                     | 37-1, 38-1, 39-1, 40-1     |
| d) Combine and subdivide squares, triangles, and rectangles to identify a new shape   | <b>AI:</b> 68<br><b>All:</b> 28-37                                 | 45-3                       |
| <b>B. Solid Geometric Figures</b>   |  |                            |
| <b>1. Analyze the properties of solid geometric figures</b>   |  |                            |
| a) Compare two- and three-dimensional shapes such as: square to a cube, square and rectangle to a rectangular prism.  | <b>All:</b> 65, 66   |                            |
| <b>C. Representation of Geometric Figures</b>   |  |                            |
| <b>1. Represent plane geometric figures</b>   |  |                            |
| a) Sketch plane figures   | <b>All:</b> 14   |                            |
| <b>D. Congruence</b>  |  |                            |

|  | Student Book                                   | Skill Builders               |
|--|--|------------------------------|
| <b>1. Compare congruent figures</b>  |  |                              |
| a) Describe congruent figures as having the same size and shape  | <b>AI:</b> 63, 64<br><b>All:</b> 20-24, 26, 27 | 11-1, 43-1, 44-1, 45-1, 45-2 |
| <b>E. Transformations</b>  |  |                              |
| <b>1. Recognize a transformation</b>   |  |                              |
| a) Apply visualization and spatial reasoning in activities such as: tangrams   |  | 45-3                         |
| b) Identify and demonstrate slides, flips, and turns   |  |                              |
| <b>2. Analyze geometric figures and pictures</b>   |  |                              |
| a) Recognize that basic shapes have several lines of symmetry  |  |                              |
| b) Demonstrate symmetry in basic shapes and pictures by drawing 2 lines of symmetry  |  |                              |
| <b>STANDARD 3: KNOWLEDGE OF MEASUREMENT</b>  |  |                              |
| <b>Students will identify attributes, units, or systems of measurements or apply a variety of techniques, formulas, tools, or technology for determining measurement</b> |  |                              |
| <b>A. Measurement Units</b>  |  |                              |
| <b>1. Read customary and metric measurement units</b>  |  |                              |
| a) Read the scale on a ruler to identify length, in inches   |  |                              |
| b) Tell time in intervals of 5 minutes using an analog clock   | <b>All:</b> 46-51                              | 49-1, 49-2                   |
| c) Compare the same time on analog and digital clocks  | <b>All:</b> 51                                 | 49-1, 49-2                   |
| 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>B. Measurement Tools</b>  |  |                              |
| <b>1. Measure in customary and metric units</b>  |  |                              |
| a) Measure length of objects and pictures of objects using a ruler or tape measure to the nearest inch, centimeter, and foot   | <b>All:</b> 53, 54, 57                         | 50-1, 50-2                   |

|   | <b>Student Book</b>    | <b>Skill Builders</b> |
|---|------------------------|-----------------------|
| b) Measure capacity of objects using cup, pint, quart, liter, and gallon  | <b>All:</b> 63         |                       |
| c) Measure objects to the nearest pound and kilogram  |                        |                       |
| d) Select and use appropriate units of measure for length/height, weight, and capacity                          | <b>All:</b> 53, 54, 64 | 50-1 to 50-3          |
| <b>C. Applications in Measurement</b>   |                        |                       |
| <b>1. Apply measurement concepts</b>  |                        |                       |
| 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                     |                        |                       |
| <b>2. Calculate to determine equivalent units</b>   |                        |                       |
| a) Recognize equivalent units of 12 inches = 1 foot   |                        |                       |
| <b>STANDARD 4: KNOWLEDGE OF STATISTICS</b>  |                        |                       |
| <b>Students will collect, organize, display, analyze or interpret data to make decisions or predictions</b>     |                        |                       |
| <b>A. Data Displays</b>   |                        |                       |
| <b>1. Collect, organize, and display data</b>   |                        |                       |
| 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                                    |                        | 50-4, 50-6            |
| d) Organize and display data to make single bar graphs  |                        | 50-4, 50-6            |
| <b>B. Data Analysis</b>   |                        |                       |
| <b>1. Analyze data</b>  |                        |                       |
| a) Interpret data contained in tables   | <b>All:</b> 78         | 29-6                  |
| b) Interpret data contained in pictographs using scales of 1:1 and 2:1  | <b>All:</b> 76, 77     | 50-7                  |
| c) Interpret data contained in single bar graphs using a variety of categories and intervals of 1, 2, 5, and 10 | <b>All:</b> 76, 77     |                       |
| <b>STANDARD 5: KNOWLEDGE OF PROBABILITY</b>   |                        |                       |

|  | Student Book                                | Skill Builders                      |
|--|---|-------------------------------------|
| Students will use experimental methods or theoretical reasoning to determine probabilities to make predictions or solve problems about events whose outcomes involve random variation. |   |                                     |
| <b>A. Sample Space</b>   |   |                                     |
| <b>1. Identify possible outcomes</b>   |   |                                     |
| a) Identify some possible outcomes that make up the sample space such as on a number cube rolling a 2  | <b>All:</b> 59-62                           | 51-1 to 51-3                        |
| <b>STANDARD 6: KNOWLEDGE OF NUMBER RELATIONSHIPS AND COMPUTATIONAL ARITHMETIC</b>  |   |                                     |
| Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil, or technology                            |   |                                     |
| <b>A. Knowledge of Number and Place Value</b>  |   |                                     |
| <b>1. Apply knowledge of whole numbers and place value</b>   |   |                                     |
| a) Use concrete materials to compose and decompose quantities up to 100  | <b>AI:</b> 12, 20, 22, 23,                  | 1-1 to 1-11, 4-1 to 4-,5, 5-1, 16-6 |
| b) List multiple representations for a number  | <b>AI:</b> 7, 11, 72,                       | 15-5, 16-6, 16-9, 17-1              |
| 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   | <b>AI:</b> 20-24, 29                        | 5-3                                 |
| e) Read, write, and represent whole numbers using models, symbols, and words through 1000  | <b>AI:</b> 4, 5, 7-9, 11, 20, 24, 30, 38-49 | 5-3, 7-1, 7-2, 8-1, 8-2             |
| f) Express whole numbers up to 999 using expanded form   | <b>AI:</b> 22-24, 29-31, 38-44, 75          | 5-3                                 |
| g) Identify the place value of a digit in whole numbers up to 999  | <b>AI:</b> 31, 42-44                        | 5-3, 5-4                            |
| h) Compare and order whole numbers up to 999 using words and relational symbols (>, <, =)  | <b>AI:</b> 12, 14-19, 27, 37                | 3-2, 6-1, 9-3, 9-5                  |
| i) Estimate quantities up to 100 using a reference point such as 10 and the terminology "about"  | <b>AI:</b> 74<br><b>All:</b> 74             |                                     |
| j) Count forward by; 2's, 5's, and 10's starting with numbers other than one   | <b>AI:</b> 4, 6, 10, 20, 24, 26, 32         | 5-3                                 |
| 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   | <b>AI:</b> 60-62                            | 13-1, 13-2                          |

|  | Student Book             | Skill Builders   |
|--|--------------------------|--|
| <b>2. Apply knowledge of fractions</b>   |                          |  |
| a) Read, write, and represent fractions as parts of a single region using symbols or models with denominators of 2, 3 or 4 | <b>All:</b> 29-37        | 41-1, 42-1 to 42-4   |
| b) Read, write, and represent halves or fourths as parts of a set using symbols, words and models                          | <b>All:</b> 29, 30       | 41-1   |
| <b>3. Apply knowledge of money</b>   |                          |  |
| a) Determine the value of a given set of mixed currency up to \$10   | <b>All:</b> 38-45        | 46-1, 46-2, 47-1, 47-2, 48-1, 48-2   |
| b) Represent money amounts up to \$10  | <b>All:</b> 38-45, 67-73 | 46-1, 46-2, 47-1, 47-2, 48-1, 48-2   |
| c) Compare the value of 2 sets of mixed currency up to \$10  | <b>All:</b> 38-45        | 46-1, 46-2, 47-1, 47-2, 48-1, 48-2   |
| <b>B. Number Theory</b>  |                          |  |
| <b>1. Apply number relationships</b>   |                          |  |
| a) Build and describe models of even and odd numbers using concrete materials, and discuss the models                      |                          |  |
| <b>C. Number Computation</b>   |                          |  |
| <b>1. Analyze number relations and compute</b>   |                          |  |
| a) Demonstrate proficiency with addition and subtraction basic facts using a variety of strategies                         | <b>All:</b> 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>Student Book</b>   | <b>Skill Builders</b>   |
|--|---|---|
| <b>b)</b> Add no more than 3 whole number addends with no more than 2 digits in each addend and a sum of no more than 100                  | <b>All:</b> 4-43  | 15-1 to 15-,4, 16-1, 16-3 to 16-7, 16-9, 18- 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>c)</b> Subtract whole numbers with no more than 2 digits in the minuend or the subtrahend   | <b>All:</b> 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>d)</b> Solve word problems based on addition or subtraction situations  | <b>All:</b> 4, 5, 12, 15, 25, 37, 38, 48, 53, 55, 58, 62-70, 73, 74<br><b>All:</b> 70 | 16-6, 27-1, 27-2  |
| <b>e)</b> Write word problems for addition and subtraction situations  |   |   |
| <b>f)</b> Add and subtract money amounts up to \$1   |   |   |
| <b>g)</b> Apply the concept of inverse operations to addition and subtraction  |   |   |
| <b>h)</b> Build equal groups to model multiplication   |   |   |
| <b>l)</b> Build groups that share equally for division   |   |   |
|  |   |   |
| <b>2. Estimation</b>   |   |   |
| <b>a)</b> Determine the reasonableness of sums and differences   |   |   |
|  |   |   |
| <b>STANDARD 7: PROCESSES OF MATHEMATICS</b>  |   |   |
| Students demonstrate the processes of mathematics by making connections and applying reasoning to solve and to communicate their findings. |   |   |
| <b>A. Problem Solving</b>  |   |   |
| <b>1. Apply a variety of concepts, processes, and skills to solve problems</b>   |   |   |

|  | <b>Student Book</b>  | <b>Skill Builders</b>                    |
|--|--|--|
| <b>a)</b> Identify the question in the problem   | <b>All:</b> 4, 5, 12, 25-27, 32, 37, 38, 44, 62-70, 73, 74<br><b>All:</b> 70 | 27-1 to 27-3, 28-1 to 28-3, 29-1 to 29-5 |
| <b>b)</b> Decide if enough information is present to solve the problem                                     | <b>All:</b> 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 |
| <b>c)</b> Make a plan to solve a problem   | <b>All:</b> 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 |
| <b>d)</b> Apply a strategy, i.e., draw a picture, guess and check, finding a pattern, writing an equation  | <b>All:</b> 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 |
| <b>e)</b> Select a strategy, i.e., draw a picture, guess and check, finding a pattern, writing an equation | <b>All:</b> 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 |
| <b>f)</b> Identify alternative ways to solve a problem   | <b>All:</b> 26-27, 37, 38, 44, 62-70, 73, 74                                 | 27-1 to 27-3, 28-1 to 28-3, 29-1 to 29-5 |
| <b>g)</b> Show that a problem might have multiple solutions or no solution                                 |  |  |
| <b>h)</b> Extend the solution of a problem to a new problem situation                                      |  |  |
| <b>B. REASONING</b>  |  |  |
| <b>1. Justify ideas or solutions with mathematical concepts or proofs</b>                                  |  |  |
| <b>a)</b> Use inductive or deductive reasoning   | <b>All:</b> 5  |  |
| <b>b)</b> Make or test generalizations   |  |  |
| <b>c)</b> Support or refute mathematical statements or solutions   |  |  |
| <b>d)</b> Use methods of proof, i.e., direct, indirect, paragraph, or contradiction                        |  |  |
| <b>C. Communication</b>  |  |  |
| <b>1. Present mathematical ideas using words, symbols, visual displays, or technology</b>                  |  |  |
| <b>a)</b> Use multiple representations to express concepts or solutions                                    |  |  |
| <b>b)</b> Express mathematical ideas orally  |  |  |
| <b>c)</b> Explain mathematically ideas in written form   |  |  |



|  |   | <b>Student Book</b> | <b>Skill Builders</b> |
|--|---|---------------------|-----------------------|
| d)   | Express solutions using concrete materials  |                     |                       |
| e)   | Express solutions using pictorial, tabular, graphical, or algebraic methods                 | <b>All:</b> 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  |                     |                       |
| <b>D. Connections</b>                              |   |                     |                       |
| <b>1.</b>  | <b>Relate or apply mathematics within the discipline, to other disciplines, and to life</b> |                     |                       |
| 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                                      |                     |                       |
| d)   | Use the relationship among mathematical concepts to learn other mathematical concepts       |                     |                       |
| <i>AI: Numeration</i>                              |   |                     |                       |
| <i>All: Addition &amp; Subtraction</i>             |   |                     |                       |
| <i>AllI: Fractions, Geometry &amp; Measurement</i> |   |                     |                       |