



Math Teachers Press, Inc.

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MARYLAND MATHEMATICS STATE CURRICULUM CORRELATED TO *MOVING WITH MATH@ MATH-BY-TOPIC LEVEL C GRADE 6*

| | Student Book | Skill Builders |
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| 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 and functions | | |
| a) Identify and describe sequences represented by a physical model or in a function table | CI: 72 | |
| b) Interpret and write a rule for a one-operation (+, -, x, ÷) function table •Assessment limit: Use whole numbers or decimals with no more than two decimal places (0-10,000) | CI: 72 | |
| c) Complete a function table with a given two-operation rule •Assessment limit: Use the operations of (+, -, X), numbers no more than 10 in the rule, and whole numbers (0-50) | CI: 74 | |
| B. Expressions, Equations, and Inequalities | | |
| 1. Write and evaluate expressions | | |
| a) Write an algebraic expression to represent unknown quantities •Assessment limit: Use one unknown and one operation (+, -) with whole numbers, fractions with denominators as factors of 24, or decimals with no more than two decimal places (0-200) | CI: 68 | 45-5 |
| b) Evaluate an algebraic expression •Assessment limit: Use one unknown and one operation (+, -) with whole numbers (0-200), fractions with denominators as factors of 24 (0-50), or decimals with no more than two decimal places (0-50) | CI: 72 | |
| c) Evaluate numeric expressions using the order of operations •Assessment limit: Use no more than 4 operations (+, -, x, ÷ with no remainders) with or without 1 set of parentheses or a division bar and whole numbers (0-100) | | |
| d) Represent algebraic expressions using physical models, manipulatives, and drawings | | |

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| 2. Identify, write, solve, and apply equations and inequalities | | |
| a) Identify and write equations and inequalities to represent relationships ●Assessment limit: Use a variable, the appropriate relational symbols ($>$, $<$, $=$) and one operational symbol ($+$, $-$, \times , \div) on either side and use fractions with denominators as factors | | |
| b) Determine the unknown in a linear equation ●Assessment limit: Use one operation ($+$, $-$, \times , \div with no remainders) and positive whole number coefficients using decimals with no more than two decimal places (0-100) | | |
| c) Solve for the unknown in a one-step inequality | | |
| d) Identify or graph solutions of a one-step inequality on a number line | | |
| e) Apply given formulas to a problem solving situation | | |
| C. Numeric and Graphic Representations of Relationships | | |
| 1. Locate points on a number line and in a coordinate plane | | |
| a) Represent rational numbers on a number line ●Assessment limit: Use integers (-20 to 20) | CI: 9, 17, 66 | 14-3 |
| b) Graph ordered pairs in a coordinate plane ●Assessment limit: Use no more than 3 ordered pairs of integers (-20 to 20) or no more than 3 ordered pairs of fractions/mixed numbers with denominators of 2 (-10 to 10) | CI: 73 | |
| c) Graph linear data from a function table | CI: 73 | |
| 2. Analyze linear relationships | | |
| a) Identify and describe the change represented in a graph ●Assessment limit: Identify increase, decrease, or no change | | |
| b) Translate the graph of a linear relationship onto a table of values that illustrates the type of change | | |
| 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 | | |

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| a) Identify, describe, and label points, lines, rays, line segments, vertices, angles, and planes using correct symbolic notation | CIII: 6, 8-11, 24 | 31-1, 32-1, 32-2, 35-2 |
| b) Identify and describe line segments ● Assessment limit: Use diagonal line segments | CIII: 6, 24 | 31-1, 32-1, 32-2, 35-2 |
| c) Identify and describe the parts of a circle ● Assessment limit: Use radius, diameter, or circumference | CIII: 22, 23 | 35-1 |
| 2. Analyze geometric relationships | | |
| a) Compare and classify triangles by sides ● Assessment limit: use scalene, equilateral, or isosceles | CIII: 15 | 34-2 |
| b) Compare and classify triangles by angle measure ● Assessment limit: Use equiangular, obtuse, acute, or right | CIII: 16 | 34-2 |
| c) Determine a third angle measure of a triangle given two angle measures ● Assessment limit: Use the concept of the sum of angles in any triangle is 180 degrees without using a diagram | | |
| d) Identify and compare the relationship between parts of a circle ● Assessment limit: Use radius, diameter or circumference ($\pi = 3.14$) | | |
| C. Representation of Geometric Figures | | |
| 1. Represent plane geometric figures | | |
| a) Draw geometric figures using a variety of tools ● Assessment limit: Draw triangles given the measures of 2 sides and one angle or 2 angles and 1 side using whole numbers (0-20) and angle measures | CIII: 8, 13, 15, 37 | 34-2, 37-1 |
| b) Identify, describe, or draw a polygon ● Assessment limit: Use the first quadrant given no more than six coordinates | CIII: 14, 15, 17, 18 | 34-1, 34-2, 34-4, 35-2 |
| c) Identify or describe angle relationships ● Assessment limit: Use perpendicular bisectors or angle bisectors | | |
| D. Congruence and Similarity | | |
| 1. Analyze congruent figures | | |
| a) Identify and describe congruent polygons and their corresponding parts | CIII: 3 | |
| E. Transformations | | |
| 1. Analyze a transformation on a coordinate plane | | |
| a) Plot the result of one transformation (translation, reflection, rotation) on a coordinate plane | | |

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| 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 | | |
| B. Measurement tools | | |
| 1. Measure in customary and metric units | | |
| a) Select and use appropriate tools and units ● Assessment limit: Measure length to the nearest 1/16 inch with a ruler | CIII: 28-32, 34 | 36-1, 36-2, 36-4 |
| 2. Measure angles in polygons | | |
| | CIII: 16 | |
| C. Applications in Measurement | | |
| 1. Estimate and apply measurement formulas | | |
| a) Estimate and determine the area of a polygon ● Assessment limit: Use triangles and whole number dimensions (0-1200) | CIII: 41-46 | 38-3 to 38-6, 39-4 |
| b) Estimate and determine the volume of a rectangular prism ● Assessment limit: Use rectangular prisms and whole number dimensions (0-1000) | CIII: 47-49 | 39-1, 39-2 39-4 |
| c) Estimate and determine the area of a composite figure ● Assessment limit: Use composite figures with no more than four polygons (triangles or rectangles) and whole number dimensions (0-500) | CIII: 41, 43 | 38-3, 38-4 |
| d) Determine missing dimensions of a quadrilateral given the perimeter length ● Assessment limit: Find length in a quadrilateral given the perimeter with whole number dimensions (0-200) | | |
| e) Determine the missing dimension of rectangles ● Assessment limit: Find length in a square or rectangle given the area and whole number dimensions (0-200) | | |
| STANDARD 4: KNOWLEDGE OF STATISTICS | | |
| Students will collect, organize, display, analyze, or interpret data to make decisions or predictions | | |
| A. Data Displays | | |
| 1. Organize and display data | | |
| a) Organize and display data to make frequency tables ● Assessment limit: Use no more than 5 categories or ranges of numbers and total frequencies of no more than 25 | | |

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| b) Organize and display data to make stem-and-leaf plots ● Assessment limit: Use no more than 20 data points and whole numbers (0-99) | | |
| c) Organize and display data using back-to-back stem-and-leaf plot | | |
| B. Data Analysis | | |
| 1. Analyze data | | |
| a) Interpret frequency tables ● Assessment limit: Use no more than 5 categories or ranges of numbers and frequencies of no more than 25 | | |
| b) Read and analyze circle graphs ● Assessment limit: Use no more than 5 categories using data in whole numbers or percents (0-1000) | CIII: 68, 69 | 48-2 |
| c) Interpret data from a stem-and-leaf plot | | |
| 2. Describe a set of data | | |
| a) Apply measures of central tendency (mean, median, mode) | CI: 58, 59 | 46-1, 46-2 |
| 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 | | |
| B. Theoretical Probability | | |
| 1. Determine the probability of one simple event comprised of equally likely outcomes | | |
| a) Express the probability of an event as a fraction | | 47-4 |
| b) Express the probability of an event as a decimal ● Assessment limit: Use a sample space of 10k, 20, 25, or 50 outcomes | | |
| c) Express the probability of an event as a percent | | |
| C. Experimental Probability | | |
| 1. Analyze the results of a probability experiment | | |
| a) Make predictions and express the experimental probability as a fraction, a decimal, or a percent ● Assessment limit: Use no more than 30 results in the sample space | | 47-4 |
| 2. Conduct a probability experiment | | |
| | | 47-4 |

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| 3. Compare outcomes of theoretical probability with the results of experimental probability | | |
| 4. Describe the difference between theoretical and experimental probability | | |
| 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 rational numbers and place value | | |
| a) Read, write, and represent whole numbers ● Assessment limit: Use exponential form with powers of 10 (0-100,000) | CI: 4-10 | 1-1 to 1-3, 2-1, 2-2 |
| b) Read, write, and represent integers ● Assessment limit: Use integers (-100 to 100) | CI: 77, 78 | |
| c) Identify and determine equivalent forms of fractions as decimals, as percents, and as ratios ● Assessment limit: Use proper fractions with denominators as factors of 100, decimals, percents, or ratios (0-1000) | CI: 26, 27, 64, 65, 76, 95, 97, 98 | 21-1, 21-2, 22-1, 25-2, 30-1, 30-2, 30-3 |
| d) Compare and order fractions, decimals alone or mixed together, with and without relational symbols (<, >, =) ● Assessment limit: Include no more than 4 fractions with denominators with factors of 100 or decimals with up to 2 decimal places (0-100) | CI: 16, 29, 72-74 | 13-1, 13-2, 24-1 to 24-3 |
| e) Compare and order integers | CI: 78 | |
| B. Number Theory | | |
| 1. Apply number relationships | | |
| a) Determine prime factorizations for whole numbers and express them using exponential form | CI: 20 | |
| C. Number Computation | | |
| 1. Analyze number relations and compute | | |
| a) Add and subtract fractions and mixed numbers and express answers in simplest form ● Assessment limit: Use proper fractions and denominators as factors of 60 (0-20) | CI: 30-39, 42-45, 47 | 15-1 to 15-5, 16-1 to 16-4, 17-1 to 17-7, 18-1, 18-2 |
| b) Multiply fractions and mixed numbers and express in simplest form ● Assessment limit: Use denominators as factors of 24 not including 24 (0-20) | CI: 48-51, 57 | 19-1 to 19-3 |

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| c) Multiply decimals ● Assessment limit: Use a decimal with no more than 3 digits multiplied by a 2-digit decimal) (0-1000) | CII: 81-86, 89 | 27-1 to 27-3 |
| d) Divide decimals ● Assessment limit: Use a decimal with no more than 5 digits divided by a whole number with no more than 2 digits without annexing zeros (0-1000) | CII: 87-89, 91, 93, 94 | 28-1 to 28-4 |
| e) Determine a percent of a whole number ● Assessment limit: Use 10%, 20%, 25% or 50% of a whole number (0-1000) | CII: 97 | 30-1 |
| f) Simplify numeric expressions using the properties of addition and multiplication ● Assessment limit: Use the distributive property to simplify numeric expressions with whole numbers (0-1000) | CI: 25, 26 | 5-2 |
| 2. Estimation | | |
| a) Determine the approximate products and quotients of decimals ● Assessment limit: Use a decimal with no more than a 3 digits multiplied by a 2-digit whole number, or the quotient of a decimal with no more than 4 digits in the dividend divided by a 2-digit whole number (0-1000) | CII: 92 | |
| 3. Analyze ratios, proportions, and percents | | |
| a) Represent ratios in a variety of forms | CII: 26, 27 | |
| b) Use ratios and unit rates to solve problems | CII: 29, 90 | 45-6, 45-7, 45-11 |
| 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 | CI: 39-41, 68-71, 75, 76 CII: 56-58, 80 CIII: 60 | 45-1 to 45-13 |
| b) Decide if enough information is present to solve the problem | CI: 39-41, 68-71, 75, 76 CII: 56-58, 80 CIII: 60 | 45-1 to 45-13 |

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| c) Make a plan to solve a problem | CI: 39-41, 68-71, 75, 76 CII: 56-58, 80 CIII: 60 | 45-1 to 45-13 |
| d) Apply a strategy, i.e., draw a picture, guess and check, finding a pattern, writing an equation | CI: 39-41, 68-71, 75, 76 CII: 56-58, 80 CIII: 60 | 45-1 to 45-13 |
| e) Select a strategy, i.e., draw a picture, guess and check, finding a pattern, writing an equation | CI: 39-41, 68-71, 75, 76 CII: 56-58, 80 CIII: 60 | 45-1 to 45-13 |
| f) Identify alternative ways to solve a problem | CI: 39-41, 68-71, 75, 76 CII: 56-58, 80 CIII: 60 | 45-1 to 45-13 |
| 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 | | |
| 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 | | |

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| 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 | | |
| 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 | CII: 51, 90 CIII: 60, 64 | 45-2 to 45-13 |
| d) | Use the relationship among mathematical concepts to learn other mathematical concepts | | |
| | CI: Numeration, Whole Numbers | | |
| | CII: Fractions, Decimals, Percent | | |
| | CIII: Geometry, Measurement | | |