

Macmillan/McGraw-Hill

Math Connects

2009

Grade 1

Correlated with

**Maryland
Mathematics
Voluntary State Curriculum**

Grade 1

**Macmillan/McGraw-Hill
The McGraw-Hill School Solutions Group
800-442-9685**

STANDARD 1.0 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	
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	pp. 241, 242, 245-246, 249-252, 253, 259-260, 261-262, 264, 265, 269-270, 272, 312, 348, 362, 452, 498
b) Represent and analyze numeric patterns using skip counting backward by 10s starting with a multiple of 10, and using manipulatives	pp. 241, 242, 245-246, 249-252, 253, 259-260, 261-262, 264, 265, 269-270, 272, 312, 348, 362, 452, 498
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, ...	pp. 13G, 17B, 19A, 20, 21B, 33B, 259B
b) Represent and analyze repeating patterns using no more than 3 different objects in the core of the pattern	pp. 13B, 14, 17, 18, 19A, 19B, 19, 20, 21A, 21B, 21, 22, 23A, 29, 31, 32, 33B, 34, 43, 45, 46, 64, 118, 150, 168, 239A-272, 335-338, 389-390
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	pp. 17B, 19B
d) Identify patterns in real-world situations	pp. 13H, 15, 18, 19B, 41-42, 239G, 239H
B. Expressions, Equations, and Inequalities	
1. Write and identify expressions	
a) Represent numeric quantities using concrete and pictorial representations and operational symbols (+, -) with whole numbers to 20	pp. 47, 51, 52, 272, 339-340
2. Identify, write, and solve equations and inequalities	
a) Represent relationships using the terms greater than, less than, and equal to for quantities up to 100	pp. 152, 271, 452, 500
b) Find the missing number (unknown) in a number sentence using operational symbols (+, -) with whole numbers to 20 using pictures and manipulatives	pp. 170, 320, 332

C. Numeric and Graphic Representations of Relationships	
1. Locate points on a number line	
a) Identify and represent whole numbers up to 50 on a number line using manipulatives and symbols	pp. 15, 16, 39, 40, 44, 45, 46, 100, 118, 165-166, 167, 179, 189-190, 191, 204, 205, 207, 241, 242, 259, 270, 328, 445-446, 450
STANDARD 2.0 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, name, and compare triangles, circles, squares, rectangles, and rhombi by their attributes	pp. 14, 301-304, 305-306, 382, 383, 384, 395-396, 397, 399-400, 405-406, 409-410, 411, 438
b) Create models of triangles, circles, squares, and rectangles with varied materials	pp. 391-392, 405-406
c) Combine and subdivide squares and triangles	pp. 405-406
B. Solid Geometric Figures	
1. Recognize and use the attributes of solid geometric figures	
a) Identify and compare cubes, spheres, cylinders, pyramids, cones, and rectangular prisms	pp. 9-10, 381, 382, 385-386, 387-388, 389-390, 391-392, 393, 394, 397, 411-412, 413, 438
C. Representation of Geometric Figures	
1. Represent plane geometric figures	
a) Sketch triangles, circles, squares, rectangles, and rhombi	pp. 10, 396, 404, 405-406, 409-410
D. Congruence	
1. Identify congruent figures	
a) Match congruent figures	pp. CS5, CS6
E. Transformations	
1. Recognize a transformation	
a) Use the direction, location, and position words right and left	pp. 401-404, 407-408, 412, 414
b) Apply spatial reasoning in activities such as: pattern block	pp. 291B, 405B, 405-406
c) Identify and demonstrate slides and flips using manipulatives	p. 291B

2. Analyze geometric figures and pictures	
a) Demonstrate symmetry in basic shapes and pictures by paper folding and drawing a line of symmetry	pp. CS5, CS6
STANDARD 3.0 KNOWLEDGE OF MEASUREMENT- Students will identify attributes, units, or systems of measurements or apply a variety of techniques, formulas, tools, or technology for determining measurements.	
A. Measurement Units	
1. Read measurement units	
a) Read a calendar to identify days of the week and months of the year	pp. 13H, 47H, 83H, 119H, 151H, 181H, 209H, 239H, 254, 273H, 313H, 347H, 381H, 415H, 453H, 481H
b) Tell time in intervals of hours and half-hours using an analog clock	pp. 160, 209, 211, 212, 215-216, 217-218, 221, 223-224, 225-226, 227-228, 230, 231-232, 235-236, 237-238, 254, 271, 272, 290, 312, 328, 379, 398, 414, 468, 480
c) Compare the same time on analog and digital clocks	pp. 223-224, 225-226, 230, 235, 290, 312
d) Read a thermometer to tell temperature to the nearest 10° F	pp. 295B, CS9, CS10
e) Compare and order objects by weight using a spring scale and a bathroom scale	Opportunities to address: pp. 273H, 285B, 287
B. Measurement Tools	
1. Measure in customary units	
a) Measure length of objects and pictures of objects to the nearest inch using a ruler	pp. LA11B, LA11-LA12
b) Identify and compare units of capacity using cups and gallons	p. 291B
c) Compare and order objects by weight in pounds using a spring scale and a bathroom scale	Opportunities to address: pp. 273H, 285B, 287
d) Describe the attributes of length, weight, and capacity	pp. 7-8, 273, 274, 275, 276, 277-278, 279-280, 281-282, 283, 284, 285-288, 289-290, 291-294, 299-300, 308, 309-310, 311-312, 362

STANDARD 4.0 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	pp. 11-12, 121, 122, 125-126, 129-130, 138
b) Collect data on tally charts	pp. 12, 121, 122, 129-130, 131, 138, 148, 374
c) Organize and display data to make picture graphs	pp. 11, 121, 122, 125-126
d) Organize and display data to make single bar graphs	pp. 12, 121, 122, 137-138, 139-140, 148, 328
B. Data Analysis	
1. Analyze data	
a) Interpret data contained in tables	pp. 72, 77, 119, 127-128, 219, 220, 228, 238, 328, 486, 503
b) Interpret data contained in picture graphs using a variety of categories with 1:1 intervals	pp. 125-126, 132
c) Interpret data contained in single bar graphs	pp. 133-134, 135, 137-138, 139-140, 146, 147-148, 149, 168, 328
STANDARD 5.0 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	pp. 143-144, 148
STANDARD 6.0 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) Use concrete materials to compose and decompose quantities up to 20	pp. 48, 49, 50, 51, 52, 53, 54, 56, 60, 65, 66, 67, 68, 69, 70, 71, 72, 85, 86, 87, 88, 89, 90, 94, 96, 101, 102, 103, 104, 155-156, 157-158, 161-162, 163, 167, 169-170, 171-172, 178, 185-186, 199-200, 323-324, 339-340, 419-422, 423-424, 429-432, 433-436

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b) Identify multiple representations for a number, such as: 12, $6 + 6$, dozen	pp. 243, 339-340
c) Demonstrate instant recognition of quantities in patterned sets	pp. 239G, 239, 243B, 243-244, 245-246
d) Use the numbers of 5 and 10 as anchors in relationship to other numbers	pp. 27, 28, 29, 30, 34, 46, 243-244, 245-246, 255-256, 257-258, 259-260, 261-262, 267-268, 416, 419-422, 423-424, 426, 429-432, 437, 439-440, 449-450, 451, 482
e) Read, write, and represent whole numbers up to 100 and beyond using models, symbols, and words	pp. 3-4, 13, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 39, 40, 44, 46, 48, 51, 52, 55, 56, 57, 59, 60, 61, 62, 63, 65, 66, 67, 68, 70, 71, 72, 74, 75, 76, 77, 78, 79, 80, 84, 100, 120, 222, 243-244, 245-246, 263-264, 269, 429-432, 433-436, 437, 449, 468
f) Express whole numbers up to 99 using expanded form	pp. 253, 423-424, 433-434, 437, 449, 468
g) Identify the place value of a digit in a whole number up to 99	pp. 244, 245-246, 253, 269, 272, 419-422, 423-424, 425, 429-432, 433-436, 437, 441, 449, 451, 482, 485-486, 487-488, 491-492, 497, 499-500, 501-502, 509-510, 511
h) Compare and order whole numbers up to 99 using terms such as: greater than, less than, equal to	pp. 35, 36, 37, 38, 44, 45, 46, 64, 82, 120, 163-164, 167, 417, 418, 443-444, 445-446, 450, 512
i) Estimate quantities up to 50 and use the term “about”	pp. 255-256, 439-440, 495-496, 505-506
j) Count to 100	pp. 3-4, 13, 14, 24, 25, 26, 27, 28, 29, 30, 31, 32, 34, 44, 45, 46, 48, 53, 84, 100, 118, 120, 222, 243-244, 249-252
k) Count forward and backward starting with numbers other than one	pp. 40, 249, 251, 252
l) Use ordinal numbers to indicate position: first through tenth	pp. P9, P12, P13
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	pp. 453, 454, 455, 456, 457-458, 459-460, 461-462, 463-464, 465, 466, 467, 469-470, 473-474, 477, 479, 480

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b) Read, write, and represent halves as parts of a set using pictures and models	pp. 454, 471-472, 475-476, 478, 479, 480
3. Apply knowledge of money	
a) Determine the value of a given set of same currency up to \$1	pp. 351-352, 353-354, 355-356, 359-360, 361, 363-364, 365-368, 369-370, 371-372, 373, 374, 375-376, 377-378, 379-380, 398, 480, 498
b) Demonstrate monetary value using real or play coins	pp. 349, 350, 355-356, 357-358, 359-360, 363-364
c) Compare the value of 2 sets of mixed currency up to \$1.00	pp. 371, 374, 498
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	pp. 2, 5-6, 51-52, 53-54, 55-56, 57, 58, 59-60, 61, 62, 63, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 114, 115, 116, 117, 118, 132, 152, 153, 154, 155-156, 157-158, 159, 160, 161-162, 163-164, 165-166, 167, 169-170, 171-172, 173-174, 175, 177-178, 179-180, 181, 182, 183, 184, 185-186, 187-188, 189-190, 191, 192, 193-194, 195-196, 197-198, 199-200, 201, 202, 203-204, 205-206, 207-208, 222, 254, 290, 314, 315, 316, 317-318, 319-320, 321, 323-324, 325-326, 327, 328, 329-330, 331-332, 333-334, 335-338, 339-340, 341-342, 343-344, 345-346, 362, 398, 414, 438, 482, 483, 484, 485-486, 487-488, 489-490, 491-492, 493, 494, 497-498, 499-500, 501-502, 503-504, 509-510, 511-512
b) Solve a given word problem based on addition or subtraction situation	pp. 2, 60, 61, 62, 63, 73, 74, 80, 82, 83, 88, 89, 92, 96, 97, 98, 99, 105, 106, 112, 114, 116, 118, 141-142, 161-162, 164, 166, 167, 168, 172, 178, 180, 190, 222, 238, 240, 253, 270, 314, 325-326, 327, 333-334, 468
c) Identify the concept of inverse operation to addition and subtraction	pp. 197-198, 199-200, 201, 202, 254, 329-330, 331-332, 335-338, 343-344, 398, 438

STANDARD 7.0 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	pp. 21, 22, 33, 34, 61, 62, 73, 74, 97, 98, 105, 106, 127-128, 141-142, 161-162, 173-174, 187-188, 193-194, 219-220, 231-232, 247-248, 257-258, 281-282, 325-326, 333-334, 359-360, 369-370, 389-390, 399-400, 427-428, 441-442, 459-460, 473-474, 489-490, 503-504
b. Decide if enough information is present to solve the problem	pp. 187-188, 193-194, 219-220, 231-232
c. Make a plan to solve a problem	pp. 21, 22, 33, 34, 61, 62, 73, 74, 97, 98, 105, 106, 127-128, 141-142, 161-162, 173-174, 187-188, 193-194, 219-220, 231-232, 247-248, 257-258, 281-282, 325-326, 333-334, 359-360, 369-370, 389-390, 399-400, 427-428, 441-442, 459-460, 473-474, 489-490, 503-504
d. Apply a strategy, i.e., draw a picture, guess and check, finding a pattern, writing an equation	pp. 2, 18, 21, 22, 28, 33, 34, 61, 62, 73, 74, 97, 98, 105, 106, 112, 124, 126, 127-128, 141-142, 148, 161-162, 166, 173-174, 175-176, 178, 186, 187-188, 193-194, 198, 203-204, 206, 214, 216, 219-220, 231-232, 233-234, 236, 246, 247-248, 256, 257-258, 262, 267-268, 270, 280, 281-282, 294, 298, 299-300, 306, 307-308, 310, 318, 325-326, 330, 332, 333-334, 341-342, 344, 352, 356, 358, 359-360, 369-370, 372, 375-376, 378, 388, 389-390, 392, 399-400, 404, 409-410, 412, 427-428, 436, 440, 441-442, 444, 446, 447-448, 450, 458, 459-460, 462, 473-474, 475-476, 478, 489-490, 492, 500, 502, 503-504, 507-508, 510
e. Select a strategy, i.e., draw a picture, guess and check, finding a pattern, writing an equation	pp. 21, 22, 33, 34, 61, 62, 73, 74, 97, 98, 105, 106, 116, 127-128, 141-142, 161-162, 172, 173-174, 175-176, 187-188, 193-194, 219-220, 231-232, 247-248, 257-258, 281-282, 325-326, 333-334, 359-360, 369-370, 389-390, 399-400, 427-428, 441-442, 459-460, 473-474, 489-490, 503-504
f. Identify alternative ways to solve a problem	pp. 187-188, 193-194, 219-220, 231-232

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g. Show that a problem might have multiple solutions or no solution	pp. 21, 22, 33, 34, 61, 62, 73, 74, 97, 98, 105, 106, 127-128, 141-142, 161-162, 173-174, 187-188, 193-194, 219-220, 231-232, 247-248, 257-258, 281-282, 325-326, 333-334, 359-360, 369-370, 389-390, 399-400, 427-428, 441-442, 459-460, 473-474, 489-490, 503-504
h. Extend the solution of a problem to a new problem situation	pp. 187-188, 193-194, 219-220, 231-232
B. Reasoning	
1. Justify ideas or solutions with mathematical concepts or proofs	
a. Use inductive or deductive reasoning	pp. 125, 126, 127, 128, 129, 130, 131
b. Make or test generalizations	pp. 277-289
c. Support or refute mathematical statements or solutions	pp. 18, 141, 142, 187-188, 193-194, 219-220, 231-232
d. Use methods of proof, i.e., direct, indirect, paragraph, or contradiction	pp. 385-393, 405, 406
C. Communication	
1. Present mathematical ideas using words, symbols, visual displays, or technology	
a. Use multiple representations to express concepts or solutions	pp. 125-135, 137-140, 197, 198, 199, 200,
b. Express mathematical ideas orally	pp. 17, 19, 24, 27, 29, 35, 39, 40, 51, 52, 55, 59, 65, 67, 70, 75, 87, 89, 91, 95, 101, 103, 108, 111, 123, 125, 129, 133, 137, 143, 155, 157, 163, 165, 169, 171, 185, 189, 195, 197, 199, 213, 215, 217, 224, 227, 243, 245, 250, 255, 259, 261, 263, 277, 279, 286, 292, 296, 302, 305, 317, 323, 329, 331, 325, 339, 351, 353, 355, 357, 363, 365, 371, 385, 387, 391, 395, 402, 405, 407, 420, 423, 430, 433, 439, 443, 445, 457, 461, 463, 469, 471, 485, 487, 491, 495, 499, 501, 505
c. Explain mathematically ideas in written form	pp. 14, 17, 18, 19, 20, 23, 24, 26, 27, 28, 31, 32, 35, 36, 39, 40, 41, 42, 43, 44, 48, 51, 52, 61, 62, 63, 64, 65, 66, 67, 68, 70, 71, 72, 74, 75, 76, 77, 78, 79, 80, 84, 87, 88, 89, 90, 91, 92, 93, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 114, 115, 116, 148, 158, 196, 218, 252, 338

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d. Express solutions using concrete materials	pp. 19, 20, 30, 31, 32, 35, 36, 48, 51, 52, 53, 54, 64, 65, 66, 67, 68, 70, 71, 72, 85, 86, 87, 88, 89, 90, 94, 96, 101, 102, 103, 104, 243-244, 245-246, 263-264, 279-280, 281-282, 283, 284, 294, 301-304, 305-306, 386, 391, 405-406, 419-422, 423-424, 429-432, 433-436, 485-486, 487-488, 491-492, 499-500, 501-502
e. Express solutions using pictorial, tabular, graphical, or algebraic methods	pp. 4, 10, 28, 213-214, 325-326, 399-400, 459-460
f. Explain solutions in written form	pp. 18, 20, 56, 66, 76, 90, 102, 104, 130, 140, 144, 364, 424, 470, 506
g. Ask questions about mathematical ideas or problems	pp. 13, 14, 47, 48, 83, 84, 119, 120, 151, 152, 181, 182, 209, 210, 239, 240, 273, 274, 313, 314, 347, 348, 381, 382, 415, 416, 453, 454, 481, 482
h. Give or use feedback to revise mathematical thinking	pp. 14, 48, 84, 120, 152, 182, 210, 240, 274, 314, 348, 382, 416, 454, 482
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	pp. 254, 399, 400
b. Identify mathematical concepts in relationship to other disciplines	pp. 26, 41-42, 145-146, 175-176, 233-234, 267-268, 307-308, 341-342, 375-376, 409-410, 447-448, 475-476, 507-508
c. Identify mathematical concepts in relationship to life	pp. 15, 16, 18, 20, 22, 26, 28, 30, 34, 36, 40, 49, 50, 52, 54, 56, 60, 62, 66, 68, 72, 74, 76, 85, 86, 88, 90, 92, 96, 98, 102, 104, 106, 110, 112, 121, 122, 124, 126, 128, 130, 134, 138, 140, 142, 144, 153, 154, 156, 158, 162, 164, 166, 170, 172, 183, 184, 186, 188, 190, 194, 196, 198, 200, 211, 212, 214, 216, 218, 226, 228, 241, 242, 244, 246, 248, 252, 256, 258, 260, 262, 264, 275, 276, 278, 280, 282, 288, 294, 298, 300, 304, 306, 315, 316, 318, 320, 324, 326, 330, 332, 334, 336, 338, 340, 349, 350, 352, 354, 356, 358, 360, 364, 368, 370, 372, 383, 384, 386, 388, 390, 392, 396, 400, 404, 406, 408, 417, 418, 422, 424, 428, 432, 436, 440, 442, 444, 446, 455, 456, 460, 472, 474, 483, 484, 486, 488, 490, 492, 496, 500, 502, 504, 506

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d. Use the relationship among mathematical
concepts to learn other mathematical concepts

pp. 254, 399, 400