

**Macmillan/McGraw-Hill**

**Math Connects**

**2009**

**Kindergarten**

**Correlated with**

**Maryland  
Mathematics  
Voluntary State Curriculum**

**Kindergarten**

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<b>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.</b>	
<b>A. Patterns and Functions</b>	
<b>1. Identify and copy numeric patterns</b>	
a) Use manipulatives with numeric qualities to build patterns	pp. 67H, 89B, LA7A
<b>2. Identify, copy, describe, create, and extend non-numeric patterns</b>	
a) Represent patterns kinesthetically such as: clap/snap/clap	pp. 69, 70, 86, 88, 96
b) Represent and analyze repeating patterns using no more than 3 objects in the core of the pattern	pp. 5-6, 77-78, 79, 80, 81-82, 83-84, 85-86, 87-88, 89-90, 91-92, 93, 94, 97-98, 124, 135-136, 146, 148, 172, 222, 346
c) Sort a collection of objects according to a rule	pp. 15, 16, 19, 20, 21, 22, 23, 24, 25, 33, 35, 36, 37, 38, 64
d) Identify patterns in real life situations	pp. 77, 78, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90
e) Recognize the difference between patterns and non-patterns	pp. 5-6, 77-78, 79, 80, 81-82, 83-84, 85-86, 87-88, 89-90, 91-92, 93, 94, 97-98, 124, 135-136, 146, 148, 172, 222, 346
f) Continue patterns	pp. 77-78, 79, 80, 81-82, 85-86, 87-88, 89-90, 93, 97-98, 173, 222, 310, 346
<b>B. Expressions, Equations, and Inequalities</b>	
<b>1. Write and identify expressions</b>	
a) Represent numeric quantities using concrete and pictorial representations to model addition expressions with a value of no more than 10	pp. 293-296, 297-298, 299-300, 301-302, 303-304
<b>2. Identify equations and inequalities</b>	
a) Represent relationships by comparing groups of no more than 10 objects to determine more or less	pp. 12, 29, 30, 31, 32, 33, 35, 36, 37, 38, 57, 98, 115-116, 123, 128, 133-134, 137, 139-140, 144, 145, 149
b) Model and name the value of the missing part in a part-part-whole situation using no more than 10 manipulatives	pp. 269, 270, 275, LA3, LA4
c) Describe addition using terms such as: and, add, plus, join, equal	pp. 283-286, 287-288, 289, 291-292, 305-306, 311-312

<b>C. Numeric and Graphic Representations of Relationships</b>	
1. Locate points on a number line	
a) Identify and represent whole numbers up to 10 on a number line using manipulatives, symbols, and one-to-one correspondence	pp. 167-168, 171, 215-216, 221, 223-224, 278, 312
<b>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.</b>	
<b>A. Plane Geometric Figures</b>	
1. Recognize and describe the attributes of plane geometric figures	
a) Sort and regroup everyday objects and geometric figures according to attributes such as: shape, color, size	pp. 13, 14, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 68, 191-192, 252
b) Describe plane figures and their attributes such as: shape, color, size	pp. 9-10, 21, 261-262, 263-264, 266
c) Identify triangles, circles, squares, and rectangles	pp. 9-10, 191-192, 198, 253, 254, 261-262, 263-264, 265, 273-274, 277
d) Compare, trace, and reproduce triangles, circles, squares, and rectangles	pp. 9-10, 198, 261-262, 263-264, 267-268, 271-272, 314
<b>B. Solid Geometric Figures</b>	
1. Recognize, describe, and use the attributes of solid geometric figures	
a) Match, sort, and regroup objects according to attributes	pp. 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 33, 35, 36, 68, 94, 253, 254, 255-256, 259-260, 275
b) Describe solid figures	pp. 255-256, 257, 259-260
c) Identify solid geometric figures in the environment	pp. 255-256, 257, 265, 277, 310
<b>D. Congruence</b>	
1. Recognize congruent objects	
a) Identify everyday objects which have the same size and shape	pp. 17, 18, 21, 23, 24, 25, 94, 310
<b>E. Transformations</b>	
1. Begin to recognize a transformation	
a) Use position words such as: over, under, above, on, next to, below, beside, behind	pp. 71-72, 73-74, 75-76, 79, 93, 95
b) Use spatial reasoning to solve simple puzzles	pp. 271-272, 275

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c) Demonstrate slides using simple objects	p. 271
<b>2. Analyze geometric figures and pictures</b>	
a) Recognize the concept of symmetry using pictures	pp. CS5, CS6
<b>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.</b>	
<b>A. Measurement Units</b>	
<b>1. Explore measurement units</b>	
a) Order, compare, and describe objects by attributes such as: length/height, weight, capacity	pp. 7-8, 175, 176, 177, 178, 179-180, 181-182, 183-184, 185-186, 187, 188, 189-190, 191-192, 195-196, 197, 199, 222, 276
b) Recognize time by identifying days of the week and by using term such as: yesterday, today, tomorrow, morning, afternoon, night, before, after	pp. 225, 226, 227, 228, 229-230, 231-232, 233-234, 235-236, 237, 238, 239-240, 241-242, 243-244, 245-246, 247, 249-250, 276
c) Compare and describe temperature such as: temperature in January as compared to temperature in July	pp. 193-194, 197
<b>B. Measurement Tools</b>	
<b>1. Measure in non-standard units</b>	
a) Measure length of objects and pictures of objects	pp. 175G, 179B, 179-180, 181-182, 185B, 185-186
b) Explore and compare the capacity of containers	pp. 189B, 189, 190, 197
c) Explore and compare weight of objects	pp. 183B, 183-184, 189A, 197, CS3, CS4
<b>STANDARD 4.0 KNOWLEDGE OF STATISTICS – 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 answering a question	pp. 129, 130, 139-140, 141-142, 143
b) Organize and display data to make real graphs	pp. 128, 129, 130, 131-132, 133-134, 137, 145
c) Organize and display data to make picture graphs	pp. 139-140, 141-142, 143-144

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<b>B. Data Analysis</b>	
1. Analyze data	
a) Compare and describe data from real graphs to answer a question	pp. 129, 130, 133-134, 137, 145
b) Compare and describe data from a picture graph to answer a question	pp. 139-140, 141-142, 143-144, 172, 173, 200, 276
<b>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.</b>	
<b>A. Knowledge of Number and Place Value</b>	
1. Apply knowledge of whole numbers and place value	
a) Extend concept of number	pp. 40, 41, 42, 45, 47, 49, 52, 55, 98, 101-102, 103-104, 105-106, 109-110, 111-112
b) Construct relationships between and among quantities using language such as: more than, less than, fewer than, as many as, one more, one less	pp. 29, 30, 31, 32, 33, 35, 36, 37, 38, 57, 58, 64, 94, 98, 115-116, 123, 128, 165-166, 171, 172, 202, 213-214, 221, 248, 314
c) Demonstrate cardinality by answer of how many	pp. 11-12, 39, 41, 42, 43, 44, 48, 53, 54, 55, 56, 60, 61, 62, 63, 64, 97, 101-102, 103-104, 109, 115-116, 121-122, 123, 124, 125-126, 169-170, 203, 204, 248
d) Build meaningful relationships by using 5 and 10 frames	pp. 105, 106, 111-112
e) Use concrete materials to build sets 0 to 10	pp. 101-102, 103-104, 105, 106, 109, 110, 111, 112, 113-114
f) Use concrete materials to compose and decompose quantities up to 10	pp. 281, 282, 283-286, 287-288, 289, 290, 291-292, 293-296, 297-298, 299-300, 301-302, 303-304, 315, 316, 317-320, 321-322, 325-328, 329, 330, 331-332, 333-334, 335-336, 337-338, 339-340, 345, 346, 347-348
g) Match a numeral to a set	pp. 45, 46, 49, 50, 65, 66, 105-106, 107, 111-112, 113-114, 115-116, 123, 128, 146, 280, 281, 282, 314
h) Count to 31	pp. 3-4, 11, 39, 40, 41, 42, 43, 44, 46, 48, 50, 51, 52, 55, 60, 63, 64, 65, 66, 94, 98, 99, 100, 101-102, 103-104, 106, 107, 109-110, 111-112, 115-116, 117-118, 123, 125-126, 128, 146, 150, 153-154,

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h) Count to 31 (continued)	155-156, 157-158, 159, 161-162, 163-164, 165-166, 171, 172, 173-174, 198, 202, 205-206, 207-208, 211, 213-214, 221, 222, 314
i) Count backward from 10	Opportunities to address: pp. 60, P10
j) Use ordinal numbers to indicate position such as: first, second, third, fourth, fifth	pp. 99, 100, 119-120
<b>2. Recognize fractions</b>	
a) Show initial awareness of fractional parts (halves) using concrete materials	pp. 252, 269-270, 275
<b>3. Recognize and use money</b>	
a) Identify and name the value of pennies, nickels, and dimes	pp. 34, 60, 106, 134, 152, 164, 170, 220, 288, 325B, 336, CS1-CS2
b) Choose the coin named from a given set of mixed coins	pp. 220, CS1, CS2
c) Use money in real-world situations such as a classroom store	pp. 288, 325B, 336
<b>C. Number Computation</b>	
<b>1. Analyze number relations and compute</b>	
a) Model addition by combining sets of concrete objects and describe the results using words and pictures	pp. 281, 282, 283-286, 290, 300
b) Model subtraction by separating sets of concrete objects and describe the results using words and pictures	pp. 315, 316, 317-320
c) Solve a given story problem cooperatively that is based on the combining and separating of models	pp. 283-286, 287-288, 289, 305-306, 317-320, 321-322, 339-340
<b>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.</b>	
<b>A. Problem solving</b>	
<b>1. Apply a variety of concepts, processes, and skills to solve problems</b>	
a. Identify the question in the problem	pp. 83-84, 185-186, 209-210, 243-244, 267-268, 305-306, 339-340
b. Decide if enough information is present to solve the problem	pp. 83-84, 185-186, 209-210, 243-244, 267-268, 305-306, 339-340

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c. Make a plan to solve a problem	pp. 83-84, 185-186, 209-210, 243-244, 267-268, 305-306, 339-340
d. Apply a strategy, i.e., draw a picture, guess and check, finding a pattern, writing an equation	pp. 2, 21-22, 53-54, 83-84, 91-92, 113-114, 135-136, 161-162, 185-186, 195-196, 209-210, 219-220, 243-244, 267-268, 273-274, 305-306, 307-308, 339-340, 343-344
e. Select a strategy, i.e., draw a picture, guess and check, finding a pattern, writing an equation	pp. 2, 21-22, 53-54, 83-84, 91-92, 113-114, 135-136, 161-162, 185-186, 195-196, 209-210, 219-220, 243-244, 267-268, 273-274, 305-306, 307-308, 339-340, 343-344
f. Identify alternative ways to solve a problem	pp. 2, 21-22, 53-54, 83-84, 91-92, 113-114, 135-136, 161-162, 185-186, 195-196, 209-210, 219-220, 243-244, 267-268, 273-274, 305-306, 307-308, 339-340, 343-344
g. Show that a problem might have multiple solutions or no solution	pp. 33-34
h. Extend the solution of a problem to a new problem situation	pp. 83-84, 185-186, 209-210, 243-244, 267-268, 305-306, 339-340
<b>B. Reasoning</b>	
<b>1. Justify ideas or solutions with mathematical concepts or proofs</b>	
a. Use inductive or deductive reasoning	pp. 131, 132, 133, 134, 135
b. Make or test generalizations	pp. 179-194
c. Support or refute mathematical statements or solutions	pp. 83-84, 185-186, 209-210, 243-244, 267-268, 305-306, 339-340
d. Use methods of proof, i.e., direct, indirect, paragraph, or contradiction	pp. 255-272
<b>C. Communication</b>	
<b>1. Present mathematical ideas using words, symbols, visual displays, or technology</b>	
a. Use multiple representations to express concepts or solutions	pp. 53-54, 113-114, 127G, 127H, 133A, 133B, 133-134, 137, 139A, 139B, 139-140, 141B, 141-142, 143-144, 209-210, 243-244, 267-268
b. Express mathematical ideas orally	pp. 17, 18, 19, 21, 23, 24, 43, 44, 46, 48, 50, 53, 54, 55, 57, 59, 81-82, 83-84, 133-134, 135-136, 139-140, 141

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c. Explain mathematically ideas in written form	pp. 14, 17, 18, 19, 20, 23, 24, 25, 27, 28, 29, 30, 31, 32, 33, 35, 36, 40, 43, 44, 45, 46, 47, 48, 49, 50, 51, 53, 54, 55, 57, 58, 63, 64, 94
d. Express solutions using concrete materials	pp. 21, 22, 43, 44, 47, 77-78, 81-82, 83-84, 101-102, 103, 106, 109-110, 112, 153, 154, 155-156, 157-158, 163-164, 179, 181, 185-186, 188, 191-192, 205-206, 207-208, 209-210, 283-286, 287-288, 289, 290, 291-292, 293-296, 297-298, 299-300, 301-302, 303-304, 315, 316, 317-320, 321-322, 325-328, 329, 330, 331-332, 333-334, 335-336, 337-338, 339-340, 345, 346
e. Express solutions using pictorial, tabular, graphical, or algebraic methods	pp. 154, 156, 158, 159, 164, 166, 230, 232, 236, 247, 267-268
f. Explain solutions in written form	pp. 50, 51, 56, 57, 58, 59, 61, 62, 63, 64, 105-106, 107, 111-112, 115-116, 117-118, 123
g. Ask questions about mathematical ideas or problems	pp. 13, 14, 39, 40, 67, 68, 97, 98, 127, 128, 149, 150, 175, 176, 201, 202, 225, 226, 251, 252, 279, 280, 313, 314
h. Give or use feedback to revise mathematical thinking	pp. 14, 40, 68, 98, 128, 150, 176, 202, 226, 252, 280, 314
<b>D. Connections</b>	
<b>1. Relate or apply mathematics within the discipline, to other disciplines, and to life</b>	
a. Identify mathematical concepts in relationship to other mathematical concepts	pp. 135-136
b. Identify mathematical concepts in relationship to other disciplines	pp. 33-34, 61-62, 91-92, 121-122, 143-144, 195-196, 219-220, 245-246, 273-274, 307-308, 343-344
c. Identify mathematical concepts in relationship to life	pp. 15, 16, 18, 20, 24, 28, 30, 32, 41, 42, 44, 46, 48, 50, 54, 56, 58, 60, 69, 70, 72, 74, 76, 78, 82, 84, 86, 88, 99, 100, 102, 104, 106, 110, 112, 114, 116, 118, 120, 129, 130, 132, 134, 136, 140, 142, 151, 152, 154, 156, 158, 162, 164, 166, 168, 177, 178, 180, 182, 184, 186, 190, 192, 194, 203, 204, 206, 208, 210, 214, 216, 218, 227, 228, 230, 232, 234, 236, 240, 242, 244, 253, 254, 256, 258, 260, 262, 264, 268, 270, 272, 281, 282, 286, 288, 292, 296, 298, 300, 302, 304, 306, 315, 316, 320, 322, 324, 328, 332, 334, 336, 338, 340, 342

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

pp. 179-194, 239-244