

Macmillan/McGraw-Hill

Math Connects

2009

Grade 4

Correlated with

**Maryland
Mathematics
Voluntary State Curriculum**

Grade 4

**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 and functions	
a) Represent and analyze numeric patterns using skip counting <ul style="list-style-type: none"> • Assessment limit: Use patterns of 3,4,6,7,8, or 9 starting with any whole number (0 – 100) 	pp. 144, 154, 156, 192, 204-206, 207, 211, 220-223, 227, 233, 331, 371, 459, 480, 570, 633
b) Create a one-operation (+ or -) function table to solve a real world problem	pp. 40-41, 210, 218-219, 222, 302
c) Complete a function table using a one-operation (+, -, x, ÷ with no remainders) rule <ul style="list-style-type: none"> • Assessment limit: Use whole numbers (0 – 50) 	pp. 6, 208-211, 220-223, 227, 228, 230, 232, 251, 260, 266, 279, 291, 403, 625
d) Describe the relationship that generates a one-operation rule	pp. 208-211, 213, 220-223, 228, 230, 231, 233, 279, 307, 403, 625
2. Identify, describe, extend, analyze, and create a non-numeric growing or repeating pattern	
a) Generate a rule for the next level of the growing pattern <ul style="list-style-type: none"> • Assessment limit: Use at least 3 levels but no more than 5 levels 	pp. 381, 386, 388
b) Generate a rule for a repeating pattern <ul style="list-style-type: none"> • Assessment limit: Use no more than 4 objects in the core of the pattern 	pp. 137, 219, 251, 366, 367, 375, 386, 565, 625
c) Create a non-numeric growing or repeating pattern	pp. 205, 367
B. Expressions, Equations, and Inequalities	
1. Write and identify expressions	
a) Represent numeric quantities using operational symbols (+, -, x, ÷ with no remainders) <ul style="list-style-type: none"> • Assessment limit: Use whole numbers (0 – 100) 	pp. 193-195, 207, 213, 214-216, 219, 223, 224-225, 229, 231, 232, 438, 480, 572
b) Determine equivalent expressions <ul style="list-style-type: none"> • Assessment limit: Use whole numbers (0 – 100) 	Opportunities to address: pp. 193-195, 197, 207, 213, 214-216, 219, 223, 224-225, 229, 231, 232, 438, 480, 572

2. Identify, write, solve, and apply equations and inequalities	
a) Represent relationships using relational symbols ($>$, $<$, $=$) and operational symbols (+, -, \times , \div) on either side <ul style="list-style-type: none"> Assessment limit: Use operational symbols (+, -, \times) and whole numbers (0 – 200) 	pp. 151-153, 168, 173, 174, 184, 187, 196-197, 198-201, 207, 211, 220-223, 224-225, 228, 230, 231, 232, 233, 275, 649
b) Find the unknown in an equation with one operation <ul style="list-style-type: none"> Assessment limit: Use multiplication (\times) and whole numbers (0 – 81) 	pp. 7, 31, 61, 69, 101, 144, 148, 151-153, 156-157, 163, 168-169, 173-174, 179, 181-182, 186, 188, 192, 196-197, 198-201, 207, 211, 220-223, 224-225, 228, 230, 231, 232, 233, 239, 266, 267, 354, 649
C. Numeric and Graphic Representations of Relationships	
1. Locate points on a number line and in a coordinate grid	
a) Represent mixed numbers and proper fractions on a number line <ul style="list-style-type: none"> Assessment limit: Use proper fractions with a denominators of 6, 8, or 10 	pp. 154, 547, 549, 550, 551, 554-557, 561-563, 569, 571, 572-573, 588-589, 596, 603, 608, 625
b) Identify positions in a coordinate plane <ul style="list-style-type: none"> Assessment limit: Use the first quadrant and ordered pairs of whole numbers (0 - 20) 	pp. 392H, 406B, 406-408, 409, 412A, 415, 430, R62-R63
c) Represent decimals on a number line	pp. 588-589, 590-592, 593, 596, 598, 599, 603, 604, 608, 611, 612, 613, 616, 617, 625
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. Analyze the properties of plane geometric figures	
a) Identify properties of angles using manipulatives and pictures	pp. 11, 368-369
b) Identify, compare, classify and describe angles in relationship to another angle <ul style="list-style-type: none"> Assessment limit: Use acute, right, or obtuse angles 	pp. 11, 368-370, 371, 375, 379, 387, 389, 390-391, 434
c) Identify parallel and intersecting line segments	pp. 398-399, 400-403, 409, 429

B. Solid Geometric Figures	
1. Analyze the properties of solid geometric figures	
a) Identify cones, cylinders, prisms, and pyramids <ul style="list-style-type: none"> • Assessment limit: Use cones or cylinders 	pp. 10-11, 358, 359-361, 382-383, 385, 389
b) Describe solid geometric figures by the number of edges, faces, or vertices <ul style="list-style-type: none"> • Assessment limit: Use triangular pyramids, rectangular pyramids, triangular prisms, or rectangular prisms 	pp. 10-11, 359-361, 371, 382-383, 385, 389, 390, 391
2. Analyze the relationship between plane geometric figures and surfaces of solid geometric figures	
a) Compare a plane figure to surfaces of solid geometric figure <ul style="list-style-type: none"> • Assessment limit: Analyze or identify the number or arrangement of squares needed to make a cube and triangles/rectangles needed to make a triangular pyramid or rectangular pyramid 	pp. 359B, 360-361, LA22-LA25
C. Representation of Geometric Figures	
1. Represent plane geometric figures	
a) Sketch acute, right, obtuse angles, and parallel and intersecting line segments	pp. 370, 379, 403
D. Congruence	
1. Analyze geometric figures	
a) Identify and describe geometric figures as congruent <ul style="list-style-type: none"> • Assessment limit: Identify the result in a transformation as being congruent to the original figure 	pp. 281, 302, 418-420, 421, 432, 433, 481, 495
E. Transformations	
1. Analyze a transformation	
a) Identify and describe the results of translations, reflections, and rotations <ul style="list-style-type: none"> • Assessment limit: Use a horizontal line translation, reflection over a vertical line, or rotation of 90° clockwise around a given point of a geometric figure or picture 	pp. 281, 410-411, 412-415, 425, 431, 433, 435, 532

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 customary and metric measurement units	
a) Estimate and determine length and height <ul style="list-style-type: none"> • Assessment limit: Use the nearest millimeter or $\frac{1}{4}$ inch 	pp. 439-440, 441-443, 448-449, 450-452, 453, 473, 475, 479, 489
b) Estimate and determine weight or mass	pp. 8-9, 496-497, 498-500, 501, 508-510, 511, 515, 526, 528, 531, 543
c) Estimate and determine capacity	pp. 485, 487-489, 492-495, 501, 507, 525, 526, 531
B. Measurement Tools	
1. Measure in customary and metric units	
a) Select and use appropriate tools and units <ul style="list-style-type: none"> • Assessment limit: Use the nearest millimeter or $\frac{1}{4}$ inch with a ruler 	pp. 451-452, 459, 487, 498-500, 506-507, 523, 532, 533
2. Compare right angles to a corner	pp. 368B, 368, 372B, 376
C. Applications in Measurement	
1. Apply measurement concepts	
a) Determine perimeter <ul style="list-style-type: none"> • Assessment limit: Use polygons with no more than 6 sides given the length of the sides in whole numbers (0 – 100) 	pp. 63, 292-293, 456-459, 464-465, 474, 475, 479, 480, 481
b) Determine area <ul style="list-style-type: none"> • Assessment limit: Use rectangles with the length of the sides in whole numbers (0 – 100) 	pp. 282-283, 292-293, 460-462, 463, 464-465, 466-467, 476, 477, 479, 481, 533
c) Determine start time, elapsed time and end time <ul style="list-style-type: none"> • Assessment limit: Use hour and half hour intervals 	pp. 57, 159, 171, 331, 520-523, 530, 531, 543, 568, 626, 627
2. Calculate equivalent measurements	
a) Determine equivalent units of length <ul style="list-style-type: none"> • Assessment limit: Use 36 inches = 1 yard and whole numbers (0-100) 	pp. 5, 173, 298, 444-445, 450, 453, 455, 473, 479, 480
b) Determine equivalent units of time	pp. 86, 119, 265, 290, 291, 294, 305

c) Determine equivalent units of capacity and weight within the same system	pp. 9, 490-491, 495, 497, 501, 504-507, 515, 516-517, 525, 528, 533
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 to answer a question	pp. 13, 96, 107
b) Organize and display data in line plots and frequency tables using a variety of categories and sets of data <ul style="list-style-type: none"> • Assessment limit: Use line plots with no more than 20 pieces of unorganized data and a range of no more than 10 and whole numbers (0 – 100) 	pp. 95-97, 101, 102-103, 104-107, 111, 116, 118-119, 133-135, 137, 139
B. Data Analysis	
1. Analyze data	
a) Interpret line plots <ul style="list-style-type: none"> • Assessment limit: Use no more than 20 pieces of data with a range no more than 10 and whole numbers (0 – 100) 	pp. 104-107, 135
b) Interpret line graphs <ul style="list-style-type: none"> • Assessment limit: Use the x-axis representing no more than 6 time intervals, the y-axis consisting of no more than 10 intervals with scales as factors of 100 using whole numbers (0 – 100) 	pp. 153, 159
2. Describe a set of data	
a) Determine median, mode, and range <ul style="list-style-type: none"> • Assessment limit: Use no more than 8 pieces of data and whole numbers (0 – 100) 	pp. 98-101, 105, 106, 107, 111, 133, 140, 141, 354, R72-R73, R74-R75
b) Model the mean of a set of data	pp. R74-R75

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.	
B. Theoretical Probability	
1. Determine the probability of one simple event comprised of equally likely outcomes	
a) Express the probability as a fraction <ul style="list-style-type: none"> • Assessment limit: Use a sample space of no more than 6 outcomes 	pp. 128, R76-R77
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) Read, write, and represent whole numbers using symbols, words, and models <ul style="list-style-type: none"> • Assessment limit: Use whole numbers (0 - 1,000,000) 	pp. 20-21, 31, 34
b) Express whole numbers in expanded form <ul style="list-style-type: none"> • Assessment limit: Use whole numbers (0 - 1,000,000) 	pp. 16, 18-19, 22-25, 31, 91, 188
c) Identify the place value of a digit in a number <ul style="list-style-type: none"> • Assessment limit: Use whole numbers (0 - 1,000,000) 	pp. 16, 17-19, 22-25, 31, 36-39, 45, 48, 49, 50-51, 58-61, 64-67, 70-71, 72-74, 80-81, 90-91, 211, 236, 279, 310, 579, 582-583, 590, 607, 609, 616, 617-620, 621
d) Compare, order, and describe whole numbers <ul style="list-style-type: none"> • Assessment limit: Use no more than 4 whole numbers with or without using the symbols ($<$, $>$, $=$) and whole numbers (0 - 1,000,000) 	pp. 16, 28-30, 31, 32-34, 35, 39, 42-43, 47, 49, 51, 61, 90, 94, 127, 140, 188, 189, 201, 341, 354, 355, 484
2. Apply knowledge of fractions and decimals	
a) Read, write, and represent proper fractions of a single region using symbols, words, and models <ul style="list-style-type: none"> • Assessment limit: Use denominators 6, 8, and 10 	pp. 394, 536, 537-539, 546-547, 550, 553, 567-570, 571, 572, 573, 576, 577-578, 579-581, 593, 596-599, 607-608, 610, 611, 613, 620
b) Read, write, and represent proper fractions of a set which has the same number of items as the denominator using symbols, words, and models <ul style="list-style-type: none"> • Assessment limit: Use denominators of 6, 8, and 10 with sets of 6, 8, and 10, respectively 	pp. 540-543, 544-545, 553, 558-559, 564, 567, 568, 570, 571, 576, 593, 607-608, 610, 611, 613

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c) Find equivalent fractions	pp. 546-547, 548-551, 552, 569, 571, 572-573, 576
d) Read, write, and represent mixed numbers using symbols, words, and models	pp. 560-563, 570, 571, 582-585, 593, 600-601, 602-604
e) Read, write, and represent decimals using symbols, words and models <ul style="list-style-type: none"> • Assessment limit: Use no more than 2 decimal places and numbers (0 – 100) 	pp. 577-578, 579-581, 582-585, 588-589, 595, 596-599, 602-604, 607-610, 611-612, 616, 617-620
f) Express decimals in expanded form <ul style="list-style-type: none"> • Assessment limit; Use no more than 2 decimal places and numbers (0 – 100) 	Opportunities to address: pp. 577-578, 579-581, 582-585, 588-589, 590-592, 595, 596-599, 602-604, 607-610, 611-612, 616, 617-620
g) Compare and order fractions and mixed numbers with or without using the symbols (<, >, or =) <ul style="list-style-type: none"> • Assessment limit: Use like denominators and no more than 3 numbers (0 – 20) 	pp. 554-557, 569, 571, 572, 576, 588-589, 595, 605, 608, 610, 611, 620, 625, 651
h) Compare, order, and describe decimals with or without using the symbols (<, >, or =) <ul style="list-style-type: none"> • Assessment limit: Use no more than 3 decimals with no more than 2 decimals places and numbers (0 – 100) 	pp. 588-589, 590-592, 593, 599, 602-604, 605, 608-610, 611-612, 620, 625, 633
3. Apply knowledge of money	
a) Compare the value of sets of mixed currency <ul style="list-style-type: none"> • Assessment limit: Use 2 sets of mixed currency and money (\$0 - \$100) 	pp. 281, 579B, 590B, 590, 622B
b) Determine the change from \$100	pp. 63, 574, 595, 609, 623, 627, 632, 641
B. Number Theory	
1. Apply number relationships	
a) Identify and use divisibility rules <ul style="list-style-type: none"> • Assessment limit: Use the rules for 2, 5, or 10 with whole numbers (0 – 1000) 	pp. 151, 152, 163, 182, 187, 326
b) Identify factors <ul style="list-style-type: none"> • Assessment limit: Use whole numbers (0 – 24) 	pp. 145, 161, 172, 176-179, 180, 186, 187-188, 201, 291, 536
c) Identify multiples <ul style="list-style-type: none"> • Assessment limit: Use the first 5 multiples of any single digit whole number 	pp. 161, 177-179, 180, 186, 187, 375

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C. Number Computation	
1. Analyze number relations and compute	
a) Add whole numbers <ul style="list-style-type: none"> Assessment limit: Use up to 3 addends with no more than 4 digits in each addend and whole numbers (0 - 10,000) 	pp. 4-5, 54, 55-57, 58-61, 62-63, 64-67, 68, 69, 76-77, 78-79, 83, 84-88, 89, 90-91, 202-203, 272, 294, 295, 306, 330, 446
b) Subtract whole numbers <ul style="list-style-type: none"> Assessment limit: Use a minuend and subtrahend with no more than 4 digits in each and whole numbers (0 – 9999) 	pp. 4-5, 54, 55-57, 59-61, 63, 70-71, 72-74, 75, 76-77, 80-83, 84-88, 90-91, 202-203, 294, 295, 310, 330
c) Multiply whole numbers <ul style="list-style-type: none"> Assessment limit: Use a one 1-digit factor by up to a 3-digit factor using whole numbers (0 – 1000) 	pp. 26-27, 78-79, 102-103, 144, 145-146, 147-149, 150-153, 154-157, 158-159, 160-162, 163, 164-165, 166-169, 172-174, 175, 176-179, 180, 181-186, 187, 188-189, 234, 236, 237-239, 240-241, 242-244, 246-248, 249, 250-251, 252-255, 256-257, 258-261, 262-266, 267, 268-269, 272, 273-275, 276-279, 282-283, 284-286, 287, 288-291, 295, 296-298, 299, 300-304, 305, 306-307, 319, 325, 340-341, 446, 484
d) Divide whole numbers <ul style="list-style-type: none"> Assessment limit: Use up to a 3-digit dividend by a 1-digit divisor and whole numbers with no remainders (0 - 999) 	pp. 102-103, 144, 146, 147-149, 151-153, 155-157, 159, 160-162, 163, 164-165, 167-169, 176-179, 180, 181-186, 188-189, 310, 311-312, 313-315, 316-319, 322-324, 325, 326-329, 332-334, 335, 336-338, 339, 340-341, 342-345, 347-352, 353, 354-355, 365, 484, 536
e) Add and subtract proper fractions and mixed numbers <ul style="list-style-type: none"> Assessment limit: Use 2 proper fractions with a single digit like denominators, 2 mixed numbers with single digit like denominators, or a whole number and a proper fraction with a single digit denominator and numbers (0 – 20) 	pp. LA14A, LA14B, LA14, LA15, LA16, LA17
f) Add 2 decimals <ul style="list-style-type: none"> Assessment limit: Use the same number of decimal places but no more than 2 decimal places and no more than 4 digits including monetary notation and numbers (0 – 100) 	pp. 622-625, 628-629, 630-632, 633, 635, 647, 649, 650-651

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<p>g) Subtract decimals</p> <ul style="list-style-type: none"> • Assessment limit: Use the same number of decimal places but no more than 2 decimal places and no more than 4 digits including monetary notation and numbers (0 – 100) 	pp. 638-639, 640-643, 648, 650
2. Estimation	
<p>a) Determine the approximate sum and difference of 2 numbers</p> <ul style="list-style-type: none"> • Assessment limit: Use no more than 2 decimal places in each and numbers (0 – 100) 	pp. 54, 58-61, 62-63, 64-67, 69, 72-74, 85-88, 89, 91, 622-625, 631-632, 633, 641-643, 645, 649, 651
<p>b) Determine the approximate product or quotient of 2 numbers</p> <ul style="list-style-type: none"> • Assessment limit: Use a 1-digit factor with the other factor having no more than 2-digits or a 1-digit divisor and no more than a 2-digit dividend and whole numbers (0 – 1000) 	pp. 242-244, 245, 249, 252, 255, 262, 264, 267, 276-279, 285, 287, 288-289, 291, 296-297, 301, 305, 322-324, 326-329, 365, 446
<p>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.</p>	
A. Problem solving	
1. Apply a variety of concepts, processes, and skills to solve problems	
<p>a. Identify the question in the problem</p>	pp. 2-3, 26-27, 40-41, 46, 62-63, 86, 88, 102-103, 134, 137, 158-159, 170-171, 202-203, 218-219, 240-241, 250-251, 280-281, 294-295, 302, 320-321, 330-331, 348, 350, 366-367, 380-381, 386, 404-405, 416-417, 446-447, 466-467, 474, 477, 502-503, 518-519, 527, 544-545, 564-565, 568, 586-587, 594-595, 626-627, 636-637, 646
<p>b. Decide if enough information is present to solve the problem</p>	pp. 158-159, 170-171, 202-203, 211, 226, 240-241, 250-251, 280-281, 294-295, 302, 532
<p>c. Make a plan to solve a problem</p>	pp. 2-3, 26-27, 40-41, 46, 62-63, 86, 88, 102-103, 134, 137, 158-159, 170-171, 202-203, 218-219, 240-241, 250-251, 280-281, 294-295, 302, 320-321, 330-331, 348, 350, 366-367, 380-381, 386, 404-405, 416-417, 446-447, 466-467, 474, 477, 502-503, 518-519, 527, 544-545, 564-565, 568, 586-587, 594-595, 626-627, 636-637, 646

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<p>d. Apply a strategy, i.e., draw a picture, guess and check, finding a pattern, writing an equation</p>	<p>pp. 2-3, 19, 24, 26-27, 30, 34, 38, 40-41, 42-43, 46, 48, 57, 60, 62-63, 66, 74, 76-77, 78-79, 82, 86, 88, 97, 100, 102-103, 106, 110, 114, 118-119, 120-121, 126, 130, 134, 137, 158-159, 162, 164-165, 170-171, 173, 178, 183, 185, 200, 202-203, 206, 210, 212-213, 216, 218-219, 222, 226, 230, 239, 240-241, 244, 248, 250-251, 254, 256-257, 260, 263, 265, 275, 278, 280-281, 286, 290, 292-293, 294-295, 302, 304, 315, 318, 320-321, 324, 328, 330-331, 334, 338, 340-341, 344, 348, 350, 361, 364, 366-367, 370, 374, 378, 380-381, 382-383, 386, 388, 397, 402, 404-405, 408, 414, 416-417, 420, 424, 426-427, 430, 431, 443, 445, 446-447, 452, 454-455, 458, 462, 466-467, 470, 474, 477, 491, 494, 500, 502-503, 506, 510, 514, 516-517, 518-519, 522, 527, 529, 539, 542, 544-545, 550, 556, 558-559, 562, 563, 564-565, 568, 570, 581, 584, 586-587, 589, 592, 594-595, 598, 600-601, 603, 608, 609, 619, 624, 626-627, 632, 634-635, 636-637, 642, 646, 647</p>
<p>e. Select a strategy, i.e., draw a picture, guess and check, finding a pattern, writing an equation</p>	<p>pp. 2-3, 26-27, 40-41, 46, 62-63, 86, 88, 102-103, 134, 137, 158-159, 170-171, 202-203, 218-219, 240-241, 250-251, 280-281, 294-295, 302, 320-321, 330-331, 348, 350, 366-367, 380-381, 386, 404-405, 416-417, 446-447, 466-467, 474, 477, 502-503, 518-519, 527, 544-545, 564-565, 568, 586-587, 594-595, 626-627, 636-637, 646</p>
<p>f. Identify alternative ways to solve a problem</p>	<p>pp. 247, 258, 280-281, 284, 316-317, 322-323, 456-457, 504, 538, 548, 555, 560, 579, 580, 582, 590, 617, 630</p>
<p>g. Show that a problem might have multiple solutions or no solution</p>	<p>pp. 158-159, 170-171, 202-203, 211, 226, 240-241, 250-251, 280-281, 294-295, 302, 532</p>
<p>h. Extend the solution of a problem to a new problem situation</p>	<p>pp. 2-3, 26-27, 40-41, 46, 62-63, 86, 88, 102-103, 134, 137, 158-159, 170-171, 202-203, 218-219, 240-241, 250-251, 280-281, 294-295, 302, 320-321, 330-331, 348, 350, 366-367, 380-381, 386, 404-405, 416-417, 446-447, 466-467, 474, 477, 502-503, 518-519, 527, 544-545, 564-565, 568, 586-587, 594-595, 626-627, 636-637, 646</p>

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B. Reasoning	
1. Justify ideas or solutions with mathematical concepts or proofs	
a. Use inductive or deductive reasoning	pp. 95-97, 101, 102-103, 104-107, 111, 116, 118-119, 133-135, 137, 139
b. Make or test generalizations	pp. 439-447, 448-462, 464-465, 468-471
c. Support or refute mathematical statements or solutions	pp. 247, 258, 280-281, 284, 316-317, 322-323, 456-457, 504, 538, 548, 555, 560, 579, 580, 582, 590, 617, 630; Refer also to Find the Error problems (e.g. 200)
d. Use methods of proof, i.e., direct, indirect, paragraph, or contradiction	pp. 359-370, 372-378
C. Communication	
1. Present mathematical ideas using words, symbols, visual displays, or technology	
a. Use multiple representations to express concepts or solutions	pp. 13, 20-21, 22, 70-71, 80, 92I, 92J, 92, 94, 95-97, 101, 104, 108-117, 120, 127, 129-130, 132, 133, 135-136, 139-140, 141, 142, 145, 146-149, 154, 155, 156, 158, 159, 160, 161, 162, 166-168, 172, 176, 181, 182, 184, 193, 196-198, 214, 229, 232, 246-247, 252-253, 258, 260, 262, 264, 266, 268, 270, 273, 276-277, 282-285, 288, 300, 311-312, 314, 354-355, 377, 534, 537-544, 546-549, 560, 563, 564, 566-569, 570, 574, 577, 582-584, 585, 588-589, 591, 596-598, 602-604, 606, 608, 610, 614, 628-630, 636-638, 648, R72-R73
b. Express mathematical ideas orally	pp. 18, 23, 29, 33, 38, 56, 59, 66, 73, 81, 96, 99, 105, 109, 113, 125, 129, 148, 155, 161, 167, 173, 177, 194, 199, 206, 209, 215, 221, 238, 243, 247, 253, 259, 274, 277, 285, 289, 297, 314, 317, 323, 328, 333, 337, 344, 360, 363, 369, 373, 377, 396, 402, 407, 414, 419, 423, 442, 445, 451, 457, 461, 470, 491, 493, 505, 509, 521, 538, 541, 550, 555, 562, 580, 583, 589, 591, 597, 603, 618, 623, 631, 641
c. Explain mathematically ideas in written form	pp. 61, 67, 68, 71, 101, 111, 119, 153, 163, 187, 195, 197, 200, 281, 286, 287, 290, 298, 305, 321, 338, 371, 375, 378, 397, 399, 403, 411, 415, 424, 443, 497, 499, 501, 503, 515, 531, 547, 551, 563, 565
d. Express solutions using concrete materials	pp. 20-21, 64, 70-71, 145-146, 155, 161-162, 167-169, 196-197, 198, 246, 282-283, 311-312, 360, 399, 549, 578, 586-587, 628-629, 630, 638-639

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e. Express solutions using pictorial, tabular, graphical, or algebraic methods	pp. 20-21, 32-34, 40-41, 102-103, 108-110, 116-117, 544, 549
f. Explain solutions in written form	pp. 3, 5, 7, 9, 11, 13, 19, 21, 25, 27, 30, 31, 34, 41, 49, 57, 63, 69, 74, 77, 82, 89, 97, 103, 107, 110, 114, 117, 123, 126, 130, 139, 146, 159, 162, 171, 174, 179, 203, 206, 207, 210, 216, 219, 222, 231, 239, 241, 244, 248, 249, 251, 255, 261, 267, 275, 279, 283, 295, 312, 315, 319, 324, 325, 329, 331, 334, 345, 353, 361, 365, 367, 370, 381, 389, 405, 408, 409, 417, 420, 440, 445, 447, 449, 452, 453, 458, 462, 465, 467, 471, 479, 485, 491, 494, 506, 510, 519, 539, 543, 545, 553, 557, 571, 578, 581, 585, 587, 589, 592, 593, 595, 599, 611, 620, 625, 627, 629, 632, 633, 637, 639, 649
g. Ask questions about mathematical ideas or problems	pp. 14, 52, 92, 142, 190, 234, 270, 308, 356, 392, 436, 482, 534, 474, 614
h. Give or use feedback to revise mathematical thinking	pp. 15, 53, 93, 143, 191, 235, 271, 309, 357, 393, 437, 483, 535, 475, 615
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. 98-101, 128-130, 176-179, 208-211, 395-397, 456-462, 504-507
b. Identify mathematical concepts in relationship to other disciplines	pp. 42-43, 78-79, 120-121, 164-165, 212-213, 256-257, 292-293, 340-341, 382-383, 426-427, 516-517, 558-559, 600-601, 634-635
c. Identify mathematical concepts in relationship to life	pp. 19, 24, 30, 38, 42-43, 60, 78-79, 82, 100, 106, 120-121, 152, 156, 162, 164-165, 168, 174, 178, 200, 210, 212-213, 222, 239, 244, 254, 256-257, 260, 275, 286, 290, 292-293, 298, 315, 318, 328, 334, 338, 340-341, 364, 370, 382-383, 402, 424, 426-427, 458, 488, 506, 516-517, 522, 551, 558-559, 563, 600-601, 619, 624, 634-635, 640
d. Use the relationship among mathematical concepts to learn other mathematical concepts	pp. 98-101, 128-130, 176-179, 208-211, 395-397, 456-462, 504-507