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Level 5
correlated to
South Carolina Mathematics Curriculum Standards
Grade 5

South Carolina Standard and Expectation	**Houghton Mifflin *MATHEMATICS***
NUMBER AND OPERATIONS	
I. Understand numbers, ways of representing numbers, relationships among numbers, and number systems.	
A. Understand the place-value structure of the base-ten number system and be able to represent and compare whole numbers and decimals.	
1. Describe the place value structure of decimals.	TE: 24–25, 26–27, 28–29, 30–33, 39, 40, 43–46, 51, 61, 141, 149, 151, 153, 194, 196, 199, 207, 223, 321–323, 345, 370, 379, 411, 430, 487, 538–539, 552, 559 PE: 24–25, 26–27, 28–29, 30–33, 39, 40, 43–46, 51, 61, 141, 149, 151, 153, 196, 199, 207, 223, 321–323, 345, 370, 379, 411, 430, 487, 538–539, 552, 559 Assessment Guide: 5, 6, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24, 26, 27, 29, 70, 71, 72, 73, 74, 78, 81, 90, 91, 99, 107, 108, 109, 111, 112
2. Read and write decimals.	TE: 24–47, 58–63, 116, 223, 404–449, 516–517 PE: 24–47, 58–63, 223, 404–449, 516–517 Assessment Guide: 5, 6, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24, 26, 27, 29, 70, 71, 72, 73, 74, 78, 81, 90, 91, 99, 107, 108, 109, 111, 112 Internet: Are We There Yet?; Finding Common Traits; What's the Chance?
3. Order lists of three or more numbers that contain whole numbers, decimals, or both.	TE: 9–11, 14–16, 26–33, 40, 43–46, 61, 196, 199, 202, 258–259, 321–323, 345, 370, 379, 411, 430, 538–539, 552, 559 PE: 9–11, 14–16, 26–33, 40, 43–46, 61, 196, 199, 258–259, 321–323, 345, 370, 379, 411, 430, 538–539, 552, 559 Assessment Guide: 6, 8, 9, 11, 14 Internet: Are We There Yet?; Finding Common Traits
B. Recognize equivalent representations for the same number and generate them by decomposing and composing numbers.	
2. Write decimals (ten thousandths) in standard form, in expanded form, and in words.	*These pages give students the opportunity to write decimals through thousandths.* TE: 24–25, 26–27, 28–29, 39, 116, 141, 149, 151, 153, 218, 316, 424, 487, 536 PE: 24–25, 26–27, 28–29, 39, 141, 149, 151, 153, 487 Assessment Guide: 5, 6, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24, 26, 27, 29, 70, 71, 72, 73, 74, 78, 81, 90, 91, 99, 107, 108, 109, 111, 112 Internet: Are We There Yet?; Finding Common Traits; What's the Chance?

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C. Develop understanding of fractions as parts of unit wholes, as parts of a collection, as locations on number lines, and as divisions of whole numbers.	
1. Name and write mixed numbers and improper fractions shown in concrete and pictorial models.	TE: 322–325, 330, 333, 333–335, 336–338, 340–347, 350, 353, 354, 357, 358, 372–373, 374, 388, 390, 398–400, 403 PE: 322–325, 330, 333, 333–335, 336–338, 340–347, 350, 353, 354, 357, 358, 372–373, 388, 398–400, 403 Assessment Guide: 58, 60, 61, 63, 64, 65, 66, 67, 68, 105, 106, 112
2. Locate points on a number line corresponding to mixed numbers and improper fractions.	TE: 316–318, 322–324, 388, 538 PE: 316–318, 322–324, 388, 538
3. Explain the relationship between fractions and division.	TE: 77, 318–323, 322–325, 334–335, 353, 365–366, 372–373, 378–381, 384–389, 395–396, 398–401, 403, 449, 493, 497, 530–539, 550–552, 553, 559–560, 563–564, 576, 579 PE: 77, 318–323, 322–325, 334–335, 353, 365–366, 372–373, 378–381, 384–389, 395–396, 398–401, 403, 449, 493, 497, 530–539, 550–552, 553, 559–560, 563–564, 576, 579 Assessment Guide: 56, 57, 60, 87, 88, 89, 90, 91, 105, 109 Internet: Finding Common Traits; What's the Chance?
D. Use models, benchmarks, and equivalent forms to judge the size of fractions.	
1. Relate the size of fractions to the benchmark fractions 0, 1/4, 1/2, 3/4, 1.	TE: 321–325, 353, 359, 370, 430, 538–539, 550–552, 559–560 PE: 321–325, 353, 359, 370, 430, 538–539, 550–552, 559–560 Assessment Guide: 56, 57, 62, 85
2. Compare fractions using symbols (>, <, =) and words ("is greater than," "is less than," or "equals").	TE: 321–325, 353, 359, 370, 430, 538–539, 550–552, 559–560 PE: 321–325, 353, 359, 370, 430, 538–539, 550–552, 559–560 Assessment Guide: 56, 57, 58, 60, 62, 63, 85, 88, 89 Internet: Finding Common Traits; What's The Chance?
E. Recognize and generate equivalent forms of commonly used fractions, decimals, and percents.	
1.Represent fractions as decimals and percents using concrete and pictorial models.	TE: 77, 322–323, 449, 493, 530–539, 550–552, 553, 559–560, 563–564 PE: 77, 322–323, 449, 493, 530–539, 550–552, 553, 559–560, 563–564 Internet: Finding Common Traits; What's The Chance?
2. Identify equivalent relationships among fractions, decimals and percents such as 1/4 = .25 = 25%, 1/3 = $.3\overline{3}$ = 33 1/3%, 2/5 = .40 = 40%, 1/2 = .50 =	TE: 77, 318–321, 322–323, 334–335, 353, 356–358, 449, 493, 530–539, 550–552, 553, 559–560, 563–564

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50%, and 3/4 = .75 = 75%.	PE: 77, 318–321, 322–323, 334–335, 353, 356–358, 449, 493, 530–539, 550–552, 553, 559–560, 563–564 Assessment Guide: 58, 60, 85, 86, 87, 88, 90, 91, 105 Internet: Finding Common Traits; What's The Chance?
F. Explore numbers less than 0 by extending the number line and through familiar applications.	
1. Describe numbers less than 0 using real world models.	TE: 366–367, 402, 412 PE: 366–367, 402, 412 Assessment Guide: 19, 22, 26, 58, 61, 65, 68, 72, 74 Internet: Are We There Yet?; Finding Common Traits; What's The Chance?
G. Describe classes of numbers according to characteristics such as the nature of their factors.	
1. Identify a number as prime, composite, or neither.	TE: 298–299, 304, 307, 320, 342, 352, 356–359, 361, 370, 498 PE: 298–299, 307, 342, 352, 356–359, 361, 370 Assessment Guide: 5, 57, 59, 105, 112
2. Explain the characteristics of prime numbers and composite numbers.	TE: 298–299, 307, 320, 342, 352, 356–359, 361, 370 PE: 298–299, 307, 342, 352, 356–359, 361, 370, 498 Assessment Guide: 5, 57, 59, 105, 112
3. Determine the least common multiple of two whole numbers.	TE: 308–313, 336, 352, 355–358, 434, 497, 548 PE: 308–313, 352, 355–358, 434, 497, 548 Assessment Guide: 57, 58, 59, 105
II. Understand meanings of operations and how they relate to one another.	
A. Understand various meanings of multiplication and division.	
1. Solve problem situations using multiplication and division.	TE: 31, 99, 101, 103, 115, 127, 141, 185, 196, 211, 299, 306, 327, 335, 373, 381, 385, 409, 417 PE: 31, 99, 101, 103, 115, 127, 141, 185, 196, 211, 299, 306, 327, 335, 373, 381, 385, 409, 417 Assessment Guide: 26, 29, 33, 35, 65, 68, 72, 74, 88, 91, 112 Internet: Are We There Yet?; Finding Common Traits; What's The Chance?
B. Understand the effects of multiplying and dividing whole numbers.	
1. Describe and explain the effect on the product when both factors are changed.	*These pages give students the opportunity to explain the effect when one factor is changed.* TE: 96–97, 98, 106, 109, 110–111 PE: 96–97, 98, 106, 109, 110–111 Assessment Guide: 5, 23
2. Describe and explain the effect on the quotient when the divisor is changed.	*These pages give students the opportunity to explain the effect when one divisor is changed.* TE: 146–147 PE: 146–147

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	Assessment Guide: 33, 35
C. Identify and use relationships between operations, such as division as the inverse of multiplication, to solve problems.	
1. Describe the relationships among the four operations.	TE: 54–55, 61, 74–75, 134, 136, 139, 147–148, 153, 154, 155, 166–175, 180, 219, 223, 259, 263, 269, 303, 317, 325, 347, 422–423, 427, 433, 436–437 PE: 54–55, 61, 74–75, 134, 136, 139, 147–148, 153, 154, 155, 166–175, 180, 219, 223, 259, 263, 269, 303, 317, 325, 347, 422–423, 427, 433, 436–437 Assessment Guide: 5, 18, 26, 29, 33, 35, 65, 68, 72, 74, 88, 91, 101, 112
2. Solve multiplication problems such as rates and applications of the Fundamental Counting Principle.	TE: 522–523, 565 PE: 522–523, 565 Assessment Guide: 104 Internet: What's the Chance?
D. Understand and use properties of operations, such as the distributivity of multiplication over addition.	
1. Apply the divisibility rules for 3, 6, and 9.	TE: 68, 302–303, 352, 356, 358, 361 PE: 68, 302–303, 352, 356, 358, 361 Assessment Guide: 23, 33, 55, 56, 57, 59, 61, 62, 105
B. Develop fluency in adding, subtracting, multiplying, and dividing whole numbers.	
1. Find the quotient and a remainder given a dividend of 4 digits or less and a divisor of 2 digits or less.	TE: 10, 115, 134–135, 136–137, 140–141, 144, 148–149, 150–151, 152–153, 154–156, 160, 178–179, 263, 277, 279, 317, 338, 455, 491 PE: 10, 115, 134–135, 136–137, 140–141, 144, 148–149, 150–151, 152–153, 154–156, 160, 178–179, 263, 277, 279, 317, 338, 455, 491 Assessment Guide: 5, 30, 31, 32, 33, 34, 70, 71, 72, 73, 74, 102, 106, 107, 112 Internet: Are We There Yet?; Finding Common Traits; What's the Chance?
2. Demonstrate fluency in the use of a division algorithm and explain the steps involved.	TE: 134, 136, 148, 154 PE: 134, 136, 148, 154 Assessment Guide: 5, 30, 31, 32, 33, 34, 70, 71, 72, 73, 74, 85, 86, 87, 88, 89, 90, 91, 102, 106, 107, 112 Internet: Are We There Yet?; Finding Common Traits; What's the Chance?
3. Explain computational strategies used to solve mathematical problem situations.	TE: 7, 31, 33, 53, 72, 89, 99, 101, 115, 127, 185, 196, 215, 219, 223, 237, 252, 263, 267, 279, 291, 299, 303, 306, 321, 325, 331, 335, 347, 359, 370, 373, 379, 381, 401, 409, 415, 423, 430, 434, 447, 489, 491, 511, 534, 537, 545, 565

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	PE: 7, 31, 33, 53, 72, 89, 99, 101, 115, 127, 185, 196, 215, 219, 223, 237, 252, 263, 267, 279, 291, 299, 303, 306, 321, 325, 331, 335, 347, 359, 370, 373, 379, 381, 401, 409, 415, 423, 430, 434, 447, 489, 491, 511, 534, 537, 545, 565 Assessment Guide: *These pages give students the opportunity to use computational strategies:* 15, 19, 22, 29, 33, 3540, 43, 47, 50, 58, 61, 65, 68, 72, 74, 77, 78, 79, 80, 82, 83, 84, 88, 89, 91, 101, 102, 103, 107, 112 Internet: It's Music to My Ears; Are We There Yet?; Finding Common Traits; What's the Chance?
C. Develop and use strategies to estimate the results of whole-number computations and to judge the reasonableness of such results.	
1. Use estimation as a tool for judging the reasonableness of calculator, mental, and paper–and-pencil computations.	TE: 52–53, 54–55, 58–59, 61, 68, 72, 89, 98–103, 114–115, 117, 120–123, 125–127, 135, 138–139, 149, 150–157, 173, 178, 185, 263, 291, 303, 326–327, 355, 359, 403, 410–411, 430, 435, 440, 442, 444, 446, 447, 448, 460, 463, 466491, 511, 519, 523, 545, 565, 573, 601 PE: 52–53, 54–55, 58–59, 61, 68, 72, 89, 98–103, 114–115, 117, 120–123, 125–127, 135, 138–139, 149, 150–157, 173, 178, 185, 263, 291, 303, 326–327, 355, 359, 403, 410–411, 430, 435, 440, 442, 444, 446, 447, 448, 463, 491, 511, 519, 523, 545, 565, 573, 601 Assessment Guide: 12, 26, 29 Internet: Are We There Yet?
2. Apply a variety of computational estimation strategies to solve problems involving whole numbers.	TE: 52–53, 54–55, 89, 98–103, 114–115, 117, 120–123, 125–127, 135, 138–139, 149, 150–157, 173, 178, 185, 263, 326–327, 435, 440, 444, 446, 491 PE: 52–53, 54–55, 89, 98–103, 114–115, 117, 120–123, 125–127, 135, 138–139, 149, 150–157, 173, 178, 185, 263, 326–327, 435, 440, 444, 446, 491 Assessment Guide: 12, 26, 29
D. Develop and use strategies to estimate computations involving fractions and decimals in situations relevant to students' experience.	
1. Round decimals to the nearest tenth, hundredth, and thousandth.	*These pages give students the opportunity to round decimals to the nearest hundredth.* TE: 28–29, 33, 40, 43–46, 61, 153, 156, 225, 267, 275, 333, 410–411, 521, 573 PE: 28–29, 33, 40, 43–46, 61, 153, 156, 225, 267, 275, 333, 410–411, 521, 573 Assessment Guide: 9, 11, 15, 70, 71, 73 Internet: Are We There Yet?; Finding Common Traits; What's the Chance?

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2. Estimate the sum and difference of decimals and determine the reasonableness of the results.	TE: 58–59, 61, 68 PE: 58–59, 61, 68 Assessment Guide: *These pages give students the opportunity to estimate the product:* 70, 71, 73
E. Use visual models, benchmarks, and equivalent forms to add and subtract commonly used fractions and decimals.	
1. Add and subtract commonly used fractions using concrete models, pictorial models, and equivalent forms.	TE: 300–338, 340–347, 354, 357–360, 371, 465, 576, 382–383, 465 PE: 300–338, 340–347, 354, 357–360, 371, 465, 576, 382–383, 465 Assessment Guide: 56, 57, 58, 59, 60, 61, 105, 112 Internet: Finding Common Traits; What's the Chance?
2. Multiply commonly used fractions (including decimals) using area models.	TE: 366–367, 368 PE: 366–367, 368 Assessment Guide: 63, 64, 65, 66, 67, 68, 69, 70, 71, 73, 86, 87, 90, 106, 107, 108, 109, 112
3. Relate connections between products of fractions and products of decimals using area models.	TE: 412 PE: 412
4. Add and subtract decimals through thousandths.	TE: 58–59, 60–61, 75, 82–83, 86, 88–91, 108, 139, 149, 151, 156, 164, 209, 210, 225, 252, 261, 263, 275, 277, 303, 321, 379, 487, 496 PE: 58–59, 60–61, 75, 82–83, 86, 88–91, 108, 139, 149, 151, 156, 164, 209, 210, 225, 252, 261, 263, 275, 277, 303, 321, 379, 487, 496 Assessment Guide: 6, 19, 20, 22, 100, 111 Internet: Finding Common Traits; What's the Difference?
F. Select appropriate methods and tools for computing with whole numbers from among mental computation, estimation, calculators, and paper and pencil according to the context and nature of the computation and use the selected method or tool.	
1. Create and solve problems involving addition, subtraction, multiplication and division of whole numbers using appropriate methods and tools.	TE: 31, 72, 89, 99, 101, 103, 115, 127, 141, 185, 196, 211, 223, 225, 299, 306, 327, 335, 373, 381, 385, 409, 417, 581 PE: 31, 72, 89, 99, 101, 103, 115, 127, 141, 185, 196, 211, 223, 225, 299, 306, 327, 335, 373, 381, 385, 409, 417, 581 Assessment Guide: 15, 19, 22, 26, 29, 33, 35, 40, 43, 46, 53, 100, 101, 102, 105, 110, 111 Internet: It's Music to My Ears; Are We There Yet?; Finding Common Traits; What's the Chance?
ALGEBRA	
I. Understand patterns, relations, and functions.	
A. Describe, extend, and make generalizations about geometric and numeric patterns.	
1. Analyze and extend numeric and geometric	TE: 53, 63, 76–77, 106–111, 129, 170–172, 281,

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patterns such as triangular numbers, perfect squares, and arithmetic sequences using models and calculators.	308, 348–349, 416–418, 430, 434, 466, 501, 537, 539, 541, 547, 576, 584–591, 595–597, 599–600, 603 PE: 53, 63, 76–77, 106–111, 129, 170–172, 281, 348–349, 416–418, 430, 434, 466, 501, 537, 539, 541, 547, 576, 584–591, 595–597, 599–600, 603 Assessment Guide: 56, 57, 95, 97, 98, 110
2. Find the missing elements in numeric and non-numeric patterns.	TE: 53, 63, 76–77, 106–111, 129, 170–172, 281, 308, 348–349, 416–418, 430, 434, 466, 501, 537, 539, 541, 547, 576, 584–591, 595–597, 599–600, 603 PE: 53, 63, 76–77, 106–111, 129, 170–172, 281, 348–349, 416–418, 430, 434, 466, 501, 537, 539, 541, 547, 576, 584–591, 595–597, 599–600, 603 Assessment Guide: 56, 57, 95, 97, 98, 110
B. Represent and analyze patterns and functions, using words, tables, and graphs.	
1. Represent and analyze patterns and functions using words, tables and graphs.	TE: 76–77, 84, 87, 151, 170–172, 277, 319, 373, 547, 570, 584–591, 595–597, 599–603 PE: 76–77, 84, 87, 151, 170–172, 277, 319, 373, 547, 570, 584–591, 595–597, 599–603 Assessment Guide: 95, 97, 98, 110
2. Analyze, describe and use function rules to make generalizations.	TE: 76–77, 151, 170–172, 277, 319, 547, 584–591, 596, 599, 603 PE: 76–77, 151, 170–172, 277, 319, 547, 584–591, 596, 599, 603 Assessment Guide: 95, 97, 98, 110
II. Represent and analyze mathematical situations and structures using algebraic symbols	
B. Represent the idea of a variable as an unknown quantity using a letter or a symbol.	
1. Use variables to write a mathematical expression in symbolic form.	TE: 71–72, 86, 111, 162–164, 185, 325, 348, 487, 491, 519 PE: 71–72, 86, 111, 162–164, 185, 325, 487, 491, 519 Assessment Guide: 17, 18, 21, 35, 100
C. Express mathematical relationships using equations.	
1. Use a variable to write an open sentence, representing a given mathematical relationship.	TE: 68, 72, 74, 75, 78, 79, 85, 87–88, 90, 113, 123, 153, 156, 166, 167, 169, 170, 171, 175, 219, 223, 303, 347, 409, 415, 434, 454, 472, 486, 548, 587, 590, 591 PE: 68, 72, 75, 79, 85, 87–88, 90, 113, 123, 153, 156, 167, 169, 171, 175, 219, 223, 303, 347, 409, 415, 434, 486, 548, 587, 591 Assessment Guide: 5, 16, 17, 19, 21, 22, 23, 24, 29, 33, 35, 86, 95, 98, 100, 101, 102, 110, 111
III. Use mathematical models to represent and understand quantitative relationships.	

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A. Model problem situations with objects and use representations such as graphs, tables, and equations to draw conclusions.	
1. Use a single variable to create a problem situation based on a given open sentence.	TE: 68, 72, 75, 79, 85, 87–88, 90, 113, 123, 153, 156, 167, 169, 171, 175, 219, 223, 303, 347, 409, 415, 434, 486, 548, 587, 591 PE: 68, 72, 75, 79, 85, 87–88, 90, 113, 123, 153, 156, 167, 169, 171, 175, 219, 223, 303, 347, 409, 415, 434, 486, 548, 587, 591 Assessment Guide: 5, 16, 17, 19, 21, 22, 23, 24, 29, 33, 35, 86, 95, 98, 100, 101, 102, 110, 111
IV. Analyze change in various contexts.	
A. Investigate how a change in one variable relates to a change in a second variable.	
1. Describe the relationship among distance, speed, and time.	TE: 522–523, 565 PE: 522–523, 565 Assessment Guide: 87, 89, 109, 110
B. Identify and describe situations with constant or varying rates of change and compare them.	
1. Create charts and graphs to show change over time.	TE: 244–252, 260–271, 274–275, 292 PE: 244–252, 260–271, 274–275, 292 Assessment Guide: *These pages give students the opportunity to use charts and graphs that show change*: 44, 45, 46, 48, 51, 52, 53 Internet: It's Music to My Ears
2. Represent situations with number tables, graphs, and verbal descriptions.	TE: 10, 25, 31, 34–35, 41, 53, 59, 61, 108, 111, 141, 170, 172, 209, 210–211, 215, 242–243, 244–245, 246–247, 250–253, 254, 255, 262–267, 268–269, 270–271, 284, 287, 288–291, 293, 327, 333, 338, 347, 360, 370, 368, 390–391, 411, 413, 416, 421, 491, 516, 537, 548, 552, 554–555, 561, 570 PE: 10, 25, 31, 34–35, 41, 53, 59, 61, 108, 111, 141, 170, 172, 209, 210–211, 215, 242–243, 244–245, 246–247, 250–253, 254, 255, 262–267, 268–269, 270–271, 284, 287, 288–291, 293, 327, 333, 338, 347, 360, 370, 368, 390–391, 411, 413, 416, 421, 491, 516, 537, 548, 552, 554–555, 561, 570 Assessment Guide: 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 106, 110 Internet: It's Music to My Ears; Are We There Yet?; Finding Common Traits; What's the Chance?
3. Associate tables, graphs, and stories of the same event.	TE: 246, 250–251, 264–265, 267, 268, 270 PE: 246, 250–251, 264–265, 267, 268, 270 Internet: It's Music to My Ears; Are We There Yet?; Finding Common Traits; What's the Chance?
GEOMETRY	

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I. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships.	
A. Identify, compare, and analyze attributes of two- and three-dimensional shapes and develop vocabulary to describe the attributes.	
1. Compare and analyze attributes of polygons, attributes of polyhedra, and attributes of cones and cylinders using models and appropriate vocabulary.	TE: 452–453, 460–461, 464–465, 474–475, 476–477, 484, 494–497, 498–501 PE: 452–453, 460–461, 464–465, 474–475, 476–477, 484, 494–497, 498–501 Assessment Guide: 5, 6, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 108, 109, 112
B. Classify two- and three-dimensional shapes according to their properties and develop definitions of classes of shapes such as triangles and pyramids.	
1. Classify quadrilaterals, polyhedra, cones, and cylinders according to their attributes using models and appropriate vocabulary.	*These pages give students the opportunity to classify quadrilaterals and polyhedra.* TE: 452–453, 460–461, 464–465, 494–497, 498–501 PE: 452–453, 460–461, 464–465, 494–497, 498–501 Assessment Guide: 6, 75, 76, 77, 78, 80, 82, 84
2. Develop definitions for classes of two- and three-dimensional shapes.	TE: 460–461, 464–465, 470, 494–497, 513 PE: 460–461, 464–465, 470, 494–497, 513 Assessment Guide: 75, 76, 77, 80, 82
D. Explore congruence and similarity.	
1. Compare two-dimensional shapes to determine if they are similar by transformations of magnifying or shrinking.	TE: 452–453, 462–463, 475–477, 478–480, 570, 572–573, 578–581, 594–595, 597–603 PE: 452–453, 462–463, 475–477, 478–480, 570, 572–573, 578–581, 594–595, 597–603 Assessment Guide: 78, 81, 93, 94, 96
E. Make and test conjectures about geometric properties and relationships and develop logical arguments to justify conclusions.	
1. Make and test conjectures about geometric properties and relationships, and develop logical arguments to justify conclusions.	TE: 460–461, 462–463, 464–465 PE: 460–461, 462–463, 464–465 Assessment Guide: 78, 80, 81, 82, 108
B. Make and use coordinate systems to specify locations and to describe paths.	
1. Locate and name points in the first quadrant of a coordinate system using ordered pairs of numbers.	TE: 264–265, 267, 574–581, 588–591, 592–594, 595–603 PE: 264–265, 267, 574–581, 588–591, 592–594, 595–603 Assessment Guide: 93, 94, 95, 96, 976, 98, 110, 112
C. Find the distance between points along horizontal and vertical lines of a coordinate system.	
1. Find the distance between points in the first quadrant of a coordinate system along horizontal and vertical lines.	See Level 6.
III. Apply transformations and use symmetry to analyze mathematical situations.	
A. Predict and describe the results of sliding, flipping, and turning two-dimensional shapes.	
1. Predict the results of geometric motion of shapes including combinations of translations (slides),	TE: 452–453, 462–463, 475–477, 478–480, 570, 572–573, 578–581, 594–595, 597–603

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reflections (flips), and rotations (turns).	PE: 452–453, 462–463, 475–477, 478–480, 570, 572–573, 578–581, 594–595, 597–603 Assessment Guide: 93, 94, 96
B. Describe a motion or a series of motions that will show that two shapes are congruent.	
1. Describe series of motions that may be used to show that two shapes are congruent.	TE: 452–453, 462–463, 475–477, 478–480, 570, 572–573, 578–581, 594–595, 597–603 PE: 452–453, 462–463, 475–477, 478–480, 570, 572–573, 578–581, 594–595, 597–603 Assessment Guide: 78, 81, 93, 94, 96
C. Identify and describe line and rotational symmetry in two- and three-dimensional shapes and designs.	
1. Determine whether given two-dimensional shapes and designs have rotational symmetry.	TE: 478–480 PE: 478–480 Assessment Guide: 93, 94, 96
2. Investigate and describe symmetry and congruence of shapes drawn on a grid.	TE: 572–573, 578–579, 594, 598, 600–601, 602 PE: 572–573, 578–579, 594, 598, 600–601, 602 Assessment Guide: 93, 94, 96
IV. Use visualization, spatial reasoning, and geometric modeling to solve problems.	
A. Build and draw geometric objects.	
1. Build and draw three-dimensional objects.	TE: 496, 500–501, 502, 507, 509, 511 PE: 496, 500–501, 502, 507, 509, 511 Assessment Guide: 80, 84
B. Create and describe mental images of objects, patterns, and paths.	
1. Sketch the front, top, and side views of a model of a three-dimensional shape built with cubes.	TE: 496–497, 498–499, 500–501, 502, 506–507, 509, 510, 511 PE: 496–497, 498–499, 500–501, 502, 506–507, 509, 510, 511 Assessment Guide: 80, 84
MEASUREMENT	
I. Understand measurable attributes of objects and the units, systems, and processes of measurement.	
A. Understand such attributes as length, area, weight, volume, and size of angle and select the appropriate type of unit for measuring each attribute.	
1. Investigate and describe the measure of circumference of a circle as length using models.	TE: 492–493, 506, 509–510 PE: 492–493, 506, 509–510 Assessment Guide: *These pages give students the opportunity to describe circumference:* 77, 108
2. Identify, describe, and draw right, acute, and obtuse angles.	TE: 456–459, 460–461, 475, 489, 504, 508, 510, 589 PE: 456–459, 460–461, 475, 489, 504, 508, 510, 589 Assessment Guide: 76, 78, 81, 108
3. Create examples of polygons with a given area using models and explain.	TE: 437, 445, 512 PE: 437, 445, 512 Assessment Guide: 84, 107, 112

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4. Create examples of right prisms with a given volume using models, and explain.	*These pages give students the opportunity to determine volume.* TE: 474–475, 476–477, 484 PE: 474–475, 476–477, 484 Assessment Guide: 77, 80, 83
5. Select units appropriate for the attributes being measured (length, area, and volume) and explain the basis for the selection.	TE: 28, 29, 41, 46, 57, 58–60, 61, 62–63, 68, 101, 103, 108, 110–111, 113, 114–115, 126, 143, 146–147, 154, 156, 159, 173, 181, 184, 190–191, 192–197, 202–205, 230–231, 234–235, 236–237, 255, 261, 264, 267, 287, 292, 313, 323, 325, 327, 338, 342, 346–347, 366, 374, 375, 397, 408–411, 416–417, 421, 422–423, 425, 426–427, 428, 430, 432, 434, 436–437, 445–446, 452–453, 460–461, 463, 486–487, 488–489, 490–499, 500–501, 506, 508–513, 522–523, 525, 526–527, 545, 557, 561, 563–564, 566–567, 586–587, 589 PE: 28, 29, 41, 46, 57, 58–60, 61, 62–63, 68, 101, 103, 108, 110–111, 113, 114–115, 126, 143, 146–147, 154, 156, 159, 173, 181, 184, 190–191, 192–197, 202–205, 230–231, 234–235, 236–237, 255, 261, 264, 267, 287, 292, 313, 323, 325, 327, 338, 342, 346–347, 366, 374, 375, 397, 408–411, 416–417, 421, 422–423, 425, 426–427, 428, 430, 432, 434, 436–437, 445–446, 452–453, 460–461, 463, 486–487, 488–489, 490–499, 500–501, 506, 508–513, 522–523, 525, 526–527, 545, 557, 561, 563–564, 566–567, 586–587, 589 Assessment Guide: 36, 38, 39, 41, 42, 77, 78, 79, 80, 81, 82, 83, 84, 103, 107, 108, 112 Internet: Are We There Yet?
D. Understand that measurements are approximations and understand how differences in units affect precision.	
1. Describe factors that affect precision such as the limitations of the measuring tool, the scale on the measuring instrument, and the need for accuracy.	TE: 192–193, 202–204, 456–459, 470–471, 472–474, 476–477 PE: 192–193, 202–204, 456–459, 470–471, 472–474, 476–477 Internet: Are We There Yet?; Finding Common Traits
E. Explore what happens to measurements of a two-dimensional shape such as its perimeter and area when the shape is changed in some way.	
1. Compare changes in area and changes in total perimeter when shapes are combined or subdivided.	TE: 452–453, 486–487, 506, 509–510, 512 PE: 452–453, 486–487, 506, 509–510, 512 Assessment Guide: 79, 82
2. Construct models to demonstrate the effect of holding one variable constant while changing the value of another variable such as building rectangles with varying perimeters and constant areas.	TE: 488–489, 490–491, 493 PE: 488–489, 490–491, 493

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II. Apply appropriate techniques, tools, and formulas to determine measurements.	
A. Develop strategies for estimating the perimeters, areas, and volumes of irregular shapes.	
1. Compare and evaluate different strategies for estimating area and perimeter of irregular shapes.	TE: 452–453, 486–487, 506, 509–510, 512 PE: 452–453, 486–487, 506, 509–510, 512 Assessment Guide: 79, 82
2. Develop and describe strategies for estimating volumes of irregular shapes.	See Level 6.
B. Select and apply appropriate standard units and tools to measure length, area, volume, weight, time, temperature, and the size of angles.	
1. Select and use appropriate tools and units to measure given items to an indicated precision (time in seconds through years; length in millimeters through kilometers, one-eighths of an inch through miles; liquid volume in milliliters through liters, ounces through gallons; mass/weight in milligrams through kilograms, ounces through pounds).	TE: 192–193, 202–204, 208–209, 231, 456–459, 470–471, 472–474, 476–477 PE: 192–193, 202–204, 208–209, 231, 456–459, 470–471, 472–474, 476–477 Assessment Guide: 36, 38, 39, 40, 41, 42, 43, 44, 45, 47, 48, 49, 51, 72, 77, 79, 80, 81, 82, 83, 84, 103, 107, 108, 110, 112 Internet: Are We There Yet?
2. Determine an amount of elapsed time in hours, minutes, and seconds within a 24-hour period.	TE: 208–209, 231, 464 PE: 208–209, 231 Assessment Guide: 36, 39, 40, 42, 43, 48, 51, 104
3. Measure angles between 0 and 180 degrees inclusive using a protractor.	TE: 456–459 PE: 456–459 Assessment Guide: 78, 81
D. Develop, understand, and use formulas to find the area of rectangles and related triangles and parallelograms.	
1. Investigate and solve problems involving area, using concrete, graphic or pictorial models to determine patterns to develop formulas for determining area.	TE: 194–196, 197 PE: 194–196, 197 Assessment Guide: 6, 77, 79, 82, 83, 108, 112
2. Describe and determine the area of rectangles and related triangles and parallelograms.	TE: 488–489, 490–491, 506, 509–510, 512 PE: 488–489, 490–491, 506, 509–510, 512 Assessment Guide: 77, 79, 82, 83, 108, 112
E. Develop strategies to determine the surface areas and volumes of rectangular solids.	
1. Develop and describe strategies for determining volume and surface area of rectangular solids using models.	TE: 494–497, 498–499 PE: 494–497, 498–499 Assessment Guide: determine volume 77, 80, 83
DATA ANALYSIS AND PROBABILITY	
I. Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.	
A. Design investigations to address a question and consider how data–collection methods affect the nature of the data set.	
1. Compare data sets collected in different ways to address a given question, and determine how the methods of collection affected the data sets.	TE: 246–248, 250–252, 264–265, 268–269 PE: 246–248, 250–252, 264–265, 268–269 Internet: It's Music to My Ears; Are We There Yet?; Finding Common Traits; What's the Chance?

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B. Collect data using observations, surveys, and experiments.	
1. Collect data using observations, surveys, and experiments.	TE: 244–252, 260–271, 292, 543, 552, 554–555, 556–557, 561 PE: 244–252, 260–271, 292, 543, 552, 554–555, 556–557, 561 Assessment Guide: 49 Internet: It's Music to My Ears; Are We There Yet?; Finding Common Traits; What's the Chance?
C. Represent data using tables and graphs such as line plots, bar graphs, and line graphs.	
1. Determine appropriate horizontal and vertical scales for data sets, and how to represent zero on a graph.	TE: 244–252, 260–271, 274–275, 292 PE: 244–252, 260–271, 274–275, 292 Internet: It's Music to My Ears; Are We There Yet?; Finding Common Traits; What's the Chance?
2. Construct and interpret tables and line graphs for data sets from applied situations.	TE: 34–35, 41, 210–211, 233, 265, 267, 270–271, 287, 416 PE: 34–35, 41, 210–211, 233, 265, 267, 270–271, 287, 416 Assessment Guide: 44, 46, 48, 51, 52 Internet: It's Music to My Ears; Are We There Yet?; Finding Common Traits; What's the Chance?
3. Explain what type of graph may be appropriate for a given data set.	TE: 268–269, 286 PE: 268–269, 286 Assessment Guide: Interpret graphs 44, 45, 46, 48, 51, 52, 53 Internet: It's Music to My Ears; Are We There Yet?; Finding Common Traits; What's the Chance?
D. Recognize the differences in representing categorical and numerical data.	
1. Compare the types of graphs that may be used for categorical data with the types that may be used for numerical data.	TE: 268–269, 286 PE: 268–269, 286 Assessment Guide: Interpret graphs 44, 45, 46, 48, 51, 52, 53 Internet: It's Music to My Ears; Are We There Yet?; Finding Common Traits; What's the Chance?
II. Select and use appropriate statistical methods to analyze data.	
A. Describe the shape and important features of a set of data and compare related data sets, with an emphasis on how the data are distributed.	
1. Describe the features of a data set, including measures of center, range, and outliers.	*These pages give students the opportunity to describe center and range.* TE: 258–261, 285, 291–292, 585 PE: 258–261, 285, 291–292, 585 Assessment Guide: 6, 46, 47, 50, 103 Internet: Are We There Yet?; Finding Common Traits; What's the Chance?

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B. Use measures of center, focusing on the median, and understand what each does and does not indicate about the data set.	
1. Find the mean, median, and mode of a numerical data set and explain what each indicates about the data set.	TE: 140–141, 154, 172, 178, 182, 258–261, 279, 285, 288–292, 306, 325, 338, 345, 347, 427, 465, 487, 490, 573, 579, 585 PE: 140–141, 154, 172, 178, 182, 258–261, 279, 285, 288–292, 306, 325, 338, 345, 347, 427, 465, 487, 573, 579, 585 Assessment Guide: 6, 46, 47, 50, 102, 104, 112 Internet: It's Music to My Ears; Are We There Yet?; Finding Common Traits; What's the Chance?
C. Compare different representations of the same data and evaluate how well each representation shows important aspects of the data.	
1. Compare the different types of graphs (bar graph, line (dot) plot, line graph and pictograph) to represent a given data set and explain the benefits of each.	TE: 268–269, 279, 284, 286, 288, 289–291, 293, 368, 570 PE: 268–269, 279, 284, 286, 288, 289–291, 293, 368, 570 Assessment Guide: 48, 49, 52 Internet: It's Music to My Ears; Are We There Yet?; Finding Common Traits; What's the Chance?
III. Develop and evaluate inferences and predictions that are based on data.	
A. Propose and justify conclusions and predictions that are based on data and design studies to further investigate the conclusions or predictions.	
1. Make and justify predictions based on data from a variety of applied situations.	TE: 263 PE: 263 Assessment Guide: 44, 45, 46, 47, 48, 49, 50, 51, 52, 53 Internet: It's Music to My Ears; Are We There Yet?; Finding Common Traits; What's the Chance?
2. Consider alternative explanations to the conjectures formed on the basis of presentations of data and design further studies to test the conjectures.	TE: 263 PE: 263 Assessment Guide: 44, 45, 46, 47, 48, 49, 50, 51, 52, 53 Internet: It's Music to My Ears; Are We There Yet?; Finding Common Traits; What's the Chance?
B. Predict the probability of outcomes of simple experiments and test the predictions.	
1. Determine the probability of a simple single-stage or a two-stage event.	TE: 34–35, 41, 45, 252, 274–275, 276–277, 286, 290, 291 PE: 34–35, 41, 45, 252, 274–275, 276–277, 286, 290, 291 Assessment Guide: 47, 49, 50, 51, 52, 53, 104 Internet: Are We There Yet?; Finding Common Traits; What's the Chance
2. Create a problem statement involving probability	TE: 280–281

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based on information from a given problem situation. Students will not be required to solve the problem created.	PE: 280–281 Assessment Guide: 49, 52, 104, 112 Internet: Are We There Yet?; Finding Common Traits; What's the Chance
C. Understand that the measure of the likelihood of an event can be represented by a number from 0 to 1.	
1. Understand when the probability of an event is 0 or 1 and give examples in each case.	TE: 276–279, 286–287 PE: 276–279, 286–287
2. Explain why the sum of the probabilities of the outcomes of an experiment must equal 1.	TE: 276–279, 286–287 PE: 276–279, 286–287