

Houghton Mifflin *MATHEMATICS* © 2002
Grade 6
correlated to
Kentucky Core Content for Mathematics Assessment
Grades 6 through Grade 8 with Assessment at Grade 8

Kentucky Core Content

Houghton Mifflin *MATHEMATICS*

NUMBER/COMPUTATION	
Concepts – Students will describe properties of, define, give examples of, and/or apply to both real-world and mathematical situations:	
MA-M-1.1.1 Rational numbers (integers, fractions, decimals, percents)	PE: 4–11, 104–107, 122–129, 134–137, 172–173, 206–209, 230–233, 304–309, 326–331, 350–357 TE: 4–11, 104–107, 122–129, 134–137, 172–173, 206–209, 230–233, 304–309, 326–331, 350–357
MA-M-1.1.2 Irrational numbers (square roots and π only)	These pages provide opportunities for students to use pi: PE: 460–465 TE: 460–465
MA-M-1.1.3 Meaning of proportion (equivalent ratios)	PE: 308–311, 320–321, 332–333, 345, 416–417 TE: 308–311, 320–321, 332–333, 345, 416–417
MA-M-1.1.4 Place value of whole numbers and decimals	PE: 4–11 TE: 4–11
MA-M-1.1.5 Positive whole number exponents	PE: 2–3, 10–11, 106–107, 142 TE: 2–3, 10–11, 106–107, 142
MA-M-1.1.6 Representation of numbers and operations in a variety of equivalent forms using models, diagrams, and symbols (e.g., number lines, 10 by 10 grids, rectangular arrays, number sentences)	PE: 8, 12, 14, 18, 22, 28, 30, 32, 34, 36, 39, 61, 63, 68, 72, 76, 78, 82, 84, 104, 106, 108, 110, 112, 116, 122, 124, 136, 156, 159, 162, 170, 172, 175, 176, 186, 207, 208, 222, 224, 230, 232, 259, 262, 264, 272, 280, 282, 308, 318, 320, 328, 330, 352, 354, 364, 366, 390, 393, 394, 396, 399, 405, 450, 452, 461, 464, 470, 474, 498, 504, 517, 552, 527, 549, 554, 560, 570, 572, 576 TE: 8, 12, 14, 18, 22, 28, 30, 32, 34, 36, 39, 61, 63, 68, 72, 76, 78, 82, 84, 104, 106, 108, 110, 112, 116, 122, 124, 136, 156, 159, 162, 170, 172, 175, 176, 186, 207, 208, 222, 224, 230, 232, 259, 262, 264, 272, 280, 282, 308, 318, 320, 328, 330, 352, 354, 364, 366, 390, 393, 394, 396, 399, 405, 450, 452, 461, 464, 470, 474, 498, 504, 517, 552, 527, 549, 554, 560, 570, 572, 576

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Skills – Students will perform the following mathematical operations and/or procedures accurately and efficiently, and explain how they work in real-world and mathematical situations:		
MA-M-1.2.1	Add, subtract, multiply, and divide rational numbers (fractions, decimals, percents, integers) to solve problems	PE: 12–27, 60–87, 110–125, 134–137, 156–171, 174–181, 214–227, 234–235, 252–265, 280–287, 310–314, 320–321, 326–333, 350–367, 370–373, 404–409, 450–467, 472–479, 570–577 TE: 12–27, 60–87, 110–125, 134–137, 156–171, 174–181, 214–227, 234–235, 252–265, 280–287, 310–314, 320–321, 326–333, 350–367, 370–373, 404–409, 450–467, 472–479, 570–577
MA-M-1.2.2	Compute (e.g., estimate, use pencil and paper, use calculator, round, use mental math) large and small quantities and check for reasonable and appropriate computational results	PE: 54–55, 61, 134, 136, 147–148, 154, 317, 422–423, 433 TE: 54–55, 61, 134, 136, 147–148, 154, 317, 422–423, 433
MA-M-1.2.3	Apply ratios, proportional reasoning, and percents (e.g., constant rate of change, unit pricing)	PE: 305, 307, 309, 312, 319, 332–333, 345 366–373, 378, 385 TE: 305, 307, 309, 312, 319, 332–333, 345 366–373, 378, 385
MA-M-1.2.4	Identify and use number theory concepts [prime numbers, prime factorization, composite numbers, factors, multiples, divisibility, greatest common factor (GCF), least common multiple (LCM) to solve problems.	PE: 102, 104–105, 108–117, 124–129, 142–143, 149, 158–163, 168–169, 192 TE: 102, 104–105, 108–117, 124–129, 142–143, 149, 158–163, 168–169, 192
MA-M-1.2.5	Apply order of operations	PE: 258–260, 546, 570–571 TE: 258–260, 546, 570–571
Relationships – Students will show connections and how connections are made between concepts and skills, explain why procedures work, and make generalizations about mathematics in meaningful ways for the following relationships:		
MA-M-1.3.1	How whole numbers, natural numbers, integers, fractions, decimals, percents, and irrational numbers (square roots and π only) relate to each other (e.g., convert between forms of rational numbers, compare, order)	PE: 4–11, 104–107, 122–129, 134–137, 172–173, 206–209, 230–233, 304–309, 326–331, 350–357, 460–465 TE: 4–11, 104–107, 122–129, 134–137, 172–173, 206–209, 230–233, 304–309, 326–331, 350–357, 460–465
MA-M-1.3.2	How properties such as commutative, associative, distributive, and identities show relationships among operations and may be used to justify steps in solving problems	PE: 250, 232–233, 250, 252–254, 256–257, 262–263 TE: 250, 232–233, 250, 252–254, 256–257, 262–263

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MA-M-1.3.3 How operations (addition and subtraction; multiplication and division; squaring and taking the square root of a number) are inversely related.	PE: 28–35, 47, 48, 224, 232–233, 240, 280–283, 292, 310, 563 TE: 28–35, 47, 48, 224, 232–233, 240, 280–283, 292, 310, 563
GEOMETRY/MEASUREMENT	
Concepts – Students will describe properties of, define, give examples of, and/or apply to both real-world and mathematical situations:	
MA-M-2.1.1 Basic geometric elements that include points, segments, rays, lines, angles, and planes	PE: 388, 390–399, 406, 408–415, 448, 452–553, 564–567 TE: 388, 390–399, 406, 408–415, 448, 452–553, 564–567
MA-M-2.1.2 Two-dimensional shapes including circles, regular polygons, quadrilaterals (square, rectangle, rhombus, parallelogram, trapezoid), and triangles (acute, obtuse, right, equilateral, scalene, isosceles)	PE: 398–401, 404–411, 414, 418–420, 452 TE: 398–401, 404–411, 414, 418–420, 452
MA-M-2.1.3 Common three-dimensional shapes including spheres, cones, cylinders, prisms (with polygonal bases), and pyramids (with polygonal bases)	PE: 470–479 TE: 470–479
MA-M-2.1.4 Congruence, symmetry, and similarity	PE: 412–415, 430–431, 438 TE: 412–415, 430–431, 438
MA-M-2.1.5 U.S. Customary and metric units of measurement	PE: 38–40, 48, 184–187, 194 TE: 38–40, 48, 184–187, 194
Skills – Students will perform the following mathematical operations and/or procedures accurately and efficiently and explain how they work in real-world and mathematical situations:	
MA-M-2.2.1 Identify characteristics (e.g., sides, vertices, angles, faces, edges, congruent parts) of two-dimensional and three-dimensional shapes	PE: 412–415, 430–431, 438, 470–477 TE: 412–415, 430–431, 438, 470–477
MA-M-2.2.2 Use appropriate tools and strategies (e.g., combining and subdividing shapes) to find measures of both regular and irregular shapes	PE: 394–397, 410–415, 426–429, 450–451, 453, 455–457, 465–467, 482–483 TE: 394–397, 410–415, 426–429, 450–451, 453, 455–457, 465–467, 482–483
MA-M-2.2.3 Move shapes in a coordinate plane: translate (slide), rotate (turn), reflect (flip), and dilate (magnify,	PE: 388, 426–429 TE: 388, 426–429

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reduce)	
MA-M-2.2.4 Estimate measurements in standard units	PE: 407, 554–555 TE: 407, 554–555
MA-M-2.2.5 Use formulas to find area and perimeter of triangles and quadrilaterals, area and circumference of circles, and surface area and volume of rectangular prisms	PE: 170, 272, 450–457, 460–467, 472–478, 482–484, 490–491 TE: 170, 272, 450–457, 460–467, 472–478, 482–484, 490–491
MA-M-2.2.6 Estimate and determine measurement of angles	PE: 407 TE: 407
MA-M-2.2.7 Use Pythagorean theorem to find hypotenuse	These pages prepare students to use the Pythagorean theorem: PE: 430–431 TE: 430–431
Relationships – Students show connections and how connections are made between concepts and skills, explain why procedures work, and make generalizations about mathematics in meaningful ways for the following relationships:	
MA-M-2.3.1 How measurements and measurement formulas are related or different (perimeter and area; rate, time, and distance; circumference and area of a circle)	PE: 170, 272, 450, 452–457, 464–467, 474–478, 482–483, 490 TE: 170, 272, 450, 452–457, 464–467, 474–478, 482–483, 490
MA-M-2.3.2 How two-dimensional and three-dimensional figures are related as seen in different orientations (e.g., top view, side view, three-dimensional shapes drawn on isometric dot paper)	PE: 470–477 TE: 470–477
MA-M-2.3.3 How proportional figures are related (scale drawings, similar figures)	PE: 320–321, 416–417 TE: 320–321, 416–417
PROBABILITY/STATISTICS	
Concepts – Students will describe properties of, define, give examples of, and/or apply to both real-world and mathematical situations:	
MA-M-3.1.1 Meaning of central tendency (mean, median, mode)	PE: 58, 60–61, 76–77, 90–91 TE: 58, 60–61, 76–77, 90–91
MA-M-3.1.2 Meaning of dispersion (range, cluster, gaps, outliers)	PE: 60–61, 78–79, 90–91 TE: 60–61, 78–79, 90–91

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MA-M-3.1.3 Characteristics and appropriateness of graphs (e.g., bar, line, circle), and plots (e.g., line, stem-and-leaf, box-and-whiskers, scatter)	PE: 66–67, 84–85, 92, 167, 173, 329, 355, 372, 381, 400–401 TE: 66–67, 84–85, 92, 167, 173, 329, 355, 372, 381, 400–401
Skills – Students will perform the following mathematical operations and/or procedures accurately and efficiently, and explain how they work in real-world and mathematical situations:	
MA-M-3.2.1 Organize, represent, analyze, and interpret sets of data	PE: 66–67, 84–85, 92, 167, 173, 329, 355, 372, 381, 400–401 TE: 66–67, 84–85, 92, 167, 173, 329, 355, 372, 381, 400–401
MA-M-3.2.2 Construct and interpret displays of data (e.g., table, circle graph, line plot, stem-and-leaf plot, box-and-whiskers plot)	PE: 66–67, 84–85 TE: 66–67, 84–85
MA-M-3.2.3 Find mean, median, mode, and range; recognize outliers, gaps, and clusters of data	PE: 58, 60–61, 76–79, 90–91 TE: 58, 60–61, 76–79, 90–91
MA-M-3.2.4 Calculate theoretical probabilities and tabulate experimental results from simulations	PE: 516–518, 520–521, 530–531 TE: 516–518, 520–521, 530–531
MA-M-3.2.5 Make predictions and draw conclusions from statistical data and probability experiments	PE: 512–521 TE: 512–521
MA-M-3.2.6 Use counting techniques, tree diagrams, area models, and tables to solve probability problems	PE: 512–514 TE: 512–514
MA-M-3.2.7 Represent probabilities in multiple ways such as fractions, decimals, percents, and area models	PE: 512–521 TE: 512–521
Relationships – Students will show connections and how connections are made between concepts and skills, explain why procedures work, and make generalizations about mathematics in meaningful ways for the following relationships:	
MA-M-3.3.1 How different representations of data (e.g. tables, graphs, diagrams, plots) are related	PE: 62–70, 138–139, 504–507 TE: 62–70, 138–139, 504–507
MA-M-3.3.2 How theoretical probability and experimental probability are related	PE: 516–518, 520–521, 530–531 TE: 516–518, 520–521, 530–531

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MA-M-3.3.3 How data gathering, bias issues, faulty data analysis, and misleading representations affect interpretations and conclusions about data (e.g., changing the scale on a graph, polling only a specific group of people, using limited or extremely small sample size)	PE: 498–499, 504–507 TE: 498–499, 504–507
MA-M-3.3.4 How probability and statistics are used to make predictions and/or draw conclusions	PE: 512–521 TE: 512–521
ALGEBRAIC IDEAS	
Concepts – Students will describe properties of, define, give examples of, and/or apply to both real-world and mathematical situations:	
MA-M-4.1.1 Variables, equations, inequalities, and algebraic expressions	PE: 266–267, 270–277, 286–287, 291–293, 314–315, 339, 466–467, 574–575, 584 TE: 266–267, 270–277, 286–287, 291–293, 314–315, 339, 466–467, 574–575, 584
MA-M-4.1.2 Functions (e.g., the relationship between time and cost of some long distance phone calls, $y = 2x + 1$) through tables, graphs, verbal rules, and algebraic notations	PE: 554–555, 560–562, 578–579, 583, 590, 591 TE: 554–555, 560–562, 578–579, 583, 590, 591
MA-M-4.1.3 Rectangular (Cartesian) coordinate system/grid and ordered pairs	PE: 548, 552–553, 560–561, 564–567, 582 TE: 548, 552–553, 560–561, 564–567, 582
Skills – Students will perform the following mathematical operations and/or procedures accurately and efficiently, and explain how they work in real-world and mathematical situations:	
MA-M-4.2.1 Simplify numerical and algebraic expressions	PE: 266–267, 270–277, 291–293, 574–575, 584 TE: 266–267, 270–277, 291–293, 574–575, 584
MA-M-4.2.2 Solve simple equations and inequalities	These pages provide opportunities for students to solve equations: PE: 286–287, 293, 314–315, 339, 466–467 TE: 286–287, 293, 314–315, 339, 466–467
MA-M-4.2.3 Model equations and inequalities concretely (e.g., algebra tiles or blocks), pictorially (e.g., graphs, tables), and abstractly (e.g., equations)	These pages provide opportunities for students to solve equations: PE: 286–287, 293, 314–315, 339, 466–467 TE: 286–287, 293, 314–315, 339, 466–467

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MA-M-4.2.4 Use variables to describe numerical patterns	PE: 266–267, 270–277, 286–287, 291–293, 314–315, 339, 466–467, 574–575, 584 TE: 266–267, 270–277, 286–287, 291–293, 314–315, 339, 466–467, 574–575, 584
MA-M-4.2.5 Represent and use functions through tables, graphs, verbal rules, and equations	PE: 554–555, 560–562, 578–579, 583, 590, 591 TE: 554–555, 560–562, 578–579, 583, 590, 591
MA-M-4.2.6 Write and solve equations that represent everyday situations	PE: 286–287, 293, 314–315, 339, 466–467 TE: 286–287, 293, 314–315, 339, 466–467
Relationships – Students will show connections and how connections are made between concepts and skills, explain why procedures work, and make generalizations about mathematics in meaningful ways for the following relationships:	
MA-M-4.3.1 How everyday situations, tables, graphs, patterns, verbal rules, and equations relate to each other	PE: 54, 150, 177, 200, 207, 223, 235, 264, 299, 306–307, 336–367, 370–371, 378, 465 TE: 54, 150, 177, 200, 207, 223, 235, 264, 299, 306–307, 336–367, 370–371, 378, 465
MA-M-4.3.2 How the change in one variable affects the change in another variable (e.g., if rate remains constant, an increase in time results in an increase in distance)	PE: 286–287, 293, 314–315, 339, 466–467 TE: 286–287, 293, 314–315, 339, 466–467