

Curriculum Framework Statement

Houghton Mifflin *MATHEMATICS*

State Goal 6: <i>Demonstrate and apply a knowledge and sense of numbers, including basic arithmetic operations, number patterns, ratios and proportions.</i>	
CAS A. Describe, express, and represent whole numbers, proper and improper fractions, and decimals and the relationships among them using concrete materials, drawings, words, and mathematical symbols.	
1. Read, write, and interpret whole numbers expressed in standard form through 999,999 and round to the nearest thousand, ten thousand, and hundred thousand.	TE: 18–19 PE: 18–19
2. Explore whole-numbers powers, using powers of 10.	TE: See Level 5. PE: See Level 5.
3. Read, write, and identify decimals expressed through thousandths.	TE: These pages involve hundredths; see level 5 for thousandths. 380, 382–383 PE: These pages involve hundredths; see level 5 for thousandths. 380, 382–383
4. Identify, model, and represent equivalent fractions.	TE: 328–333, 339–340, 342–345, 382–383 PE: 328–333, 339–340, 342–345, 382–383
5. Formulate and demonstrate relationships among simple fractions and decimals.	TE: 372–373, 378–379, 382–383 PE: 372–373, 378–379, 382–383
6. Generate and round non-terminating decimals to a given place.	TE: 392–393, 394–396 PE: 392–393, 394–396
CAS B. Compare, order, and graph integers, fractions, and decimals, using concrete materials, drawings, and mathematical symbols.	
1. Compare (<, >, =) quantities expressed as whole numbers.	TE: 6–8, 20–22 PE: 6–8, 20–22
2. Describe data (e.g., number of girls to boys), using models, pictures, and words.	TE: 5, 8, 15, 16, 17, 22, 26, 29, 58, 60, 62, 66, 83, 95, 99, 114, 121, 143, 144, 166, 187, 191, 196, 198, 200–201, 219, 224, 233, 239, 240, 247, 248, 253, 258, 284, 290, 303, 328, 329, 340, 353, 354–355, 356, 363, 365, 376, 393, 409, 414–415, 418–420, 422–425, 426–429, 439, 446, 449, 451, 452, 481, 486–487, 493, 497, 500, 502, 536, 572, 582 PE: 5, 8, 15, 16, 17, 22, 26, 29, 58, 60, 62, 66, 83, 95, 99, 114, 121, 143, 144, 166, 187, 191, 196, 198, 200–201, 219, 224, 233, 239, 240, 247, 248, 253, 258, 284, 290, 303, 328, 329, 340, 353, 354–355, 356, 363, 365, 376, 393, 409, 414–415, 418–420, 422–425, 426–429, 439, 446, 449, 451, 452, 481, 486–487, 493, 497, 500, 502, 536, 572, 582
3. Identify a whole number which lies between two given numbers.	TE: 6–8, 20–22 PE: 6–8, 20–22
4. Identify and represent whole numbers on a number line.	TE: 11, 319, 420, 547, 572 PE: 11, 319, 420, 547, 572
CAS C. Add, subtract, multiply, and divide single- and multi-digit whole numbers, fractions, decimals, and percents and understand the relationships between these operations.	

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1. Describe the relationship between addition/subtraction and between multiplication/division.	TE: 60–62, 223, 232, 234, 238, 256, 570, 580, 581, 588 PE: 60–62, 223, 232, 234, 238, 256, 570, 580, 581, 588
2. Multiply whole numbers and decimals by a one-digit number.	TE: These pages involve whole numbers; see Level 5 for decimals. 170–173, 180–181, 182–184 PE: These pages involve whole numbers; see Level 5 for decimals. 170–173, 180–181, 182–184
3. Divide two- and three-digit numbers that are multiples of 10 by a one- or two-digit divisor.	TE: 230–231, 256–257, 568–569 PE: 230–231, 256–257, 568–569
4. Add and subtract with money amounts.	TE: 34–35, 36–37, 38, 236–237, 345, 347, 353, 361, 363, 365, 377, 385, 391, 395, 399, 400, 424, 431, 449, 490, 507, 537, 572, 577, 591 PE: 34–35, 36–37, 38, 236–237, 345, 347, 353, 361, 363, 365, 377, 385, 391, 395, 399, 400, 424, 431, 449, 490, 507, 537, 572, 577, 591
5. Add and subtract fractions with like and unlike denominators, and mixed numbers with like denominators.	TE: 350–353 PE: 350–353
CAS D. Identify, select and use appropriate strategies (such as using smaller numbers, modeling, guess and check, working backward, (trial and error) to solve problems involving percentages, ratios, and proportions relevant to their experiences.	
1. Explain (orally and in writing) solutions to problems involving whole numbers and support solutions with evidence.	TE: 25, 55, 99, 159, 193, 196, 221, 231, 233, 235, 247, 251, 255, 271, 279, 281, 291, 296, 317, 327, 332, 365, 409, 439, 453, 471, 517, 525 PE: 25, 55, 99, 159, 193, 196, 221, 231, 233, 235, 247, 251, 255, 271, 279, 281, 291, 296, 317, 327, 332, 365, 409, 439, 453, 471, 517, 525
2. Use estimation to solve problems and check answers.	TE: 12–13, 66, 95, 121, 125, 317 PE: 12–13, 66, 95, 121, 125, 317
CAS E. Identify, apply, and explain properties of numbers (such as prime, composite, factor, divisor, relationships between), of operations (inverse relationship, distributive property), and of mathematical logic.	
1. Identify and describe prime and composite numbers.	TE: 161, 248–249 PE: 161, 248–249
2. Describe and apply the rules of divisibility for 2, 5, and 10.	TE: 246–247 PE: 246–247
3. Describe and apply the order of operations.	TE: 603 PE: 603
State Goal 7: Estimate, make, and use measurements of objects, quantities, and relationships, and determine acceptable levels of accuracy.	
CAS A. Use standard (customary and metric), tools, scales, and formulas to measure distance, area, capacity, temperature, and weight/mass of objects with whole numbers, fractions, and decimals.	
1. Select and use appropriate measurement units within the customary system and the metric system for length and temperature.	TE: 276–277, 280–281, 290–293, 302–303, 304–305 PE: 276–277, 280–281, 290–293, 302–303, 304–305

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2. Determine the perimeter of a regular polygon and the area of squares and rectangles by measuring and constructing models.	TE: 280–281, 292–293, 486–493 PE: 280–281, 292–293, 486–493
3. Differentiate between perimeter and area.	TE: 486–487, 488–490 PE: 486–487, 488–490
4. Identify the parts of a circle (e.g., diameter, radius, center) and differentiate between circumference and area.	TE: 470–471 PE: 470–471
5. Identify, describe, and estimate angles (right, obtuse, and acute).	TE: 464–465, 468–469 PE: 464–465, 468–469
6. Measure drawings or models to determine the exact measurements (e.g., a square 6 cm on a side, a rectangle with the length of 4 cm and the width of 2 cm).	TE: 280–281, 292–293, 314, 486–487, 492–493 PE: 280–281, 292–293, 314, 486–487, 492–493
7. Measure a scale in maps or scale drawings, using the ideas of constant ratio (e.g., one inch to one mile).	TE: See Level 5. PE: See Level 5.
CAS B. Estimate measurements, convert units within and between customary and metric systems (e.g., a liter is about a quart), and determine relationships between measurements expressed in different systems (e.g., weight and volume) with reasonable accuracy.	
1. Determine the appropriateness of overestimating or underestimating in computational problems and in different contexts.	TE: 277, 279, 285, 287, 291, 295–296, 314 PE: 277, 279, 285, 287, 291, 295–296, 314
2. Compare measures given in customary and metric units.	TE: 276, 280–281, 282–285, 290–293, 294–296 PE: 276, 280–281, 282–285, 290–293, 294–296
3. Convert between and compare units of distance within the customary system and within the metric system.	TE: 276–277, 280–281, 292–293 PE: 276–277, 280–281, 292–293
4. Approximate the area of an irregular figure by using concrete materials.	TE: 492–493 PE: 492–493
5. Estimate angle measurements using 90° and 180° as referents.	TE: 464–465, 468–469 PE: 464–465, 468–469
6. Count area in square units by tracing several objects on grid paper that are combined or grouped.	TE: 492–493, 502–503 PE: 492–493, 502–503
State Goal 8: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems, and predict results.	
CAS A. Extend, create, describe, and analyze geometric and number patterns.	
1. Show how one quantity determines another quantity in a functional relationship based on a simple pattern.	TE: 58, 87, 94, 96, 114, 131, 146, 147, 150, 224, 396, 529, 530 PE: 58, 87, 94, 96, 114, 131, 146, 147, 150, 224, 396, 529, 530
2. Extend simple number patterns.	TE: 21, 35, 112–113, 139, 140–141, 166–167, 176–177, 192–193, 230–231, 384–385, 405 PE: 21, 35, 112–113, 139, 140–141, 166–167, 176–177, 192–193, 230–231, 384–385, 405
CAS B. Describe trends, patterns, verbal rules, functions, and other mathematical relationships using tables, graphs, charts, and open sentences created from given or student-generated data.	

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1. Describe and extend given number patterns in whole numbers.	TE: 21, 35, 112–113, 139, 140–141, 166–167, 176–177, 192–193, 230–231 PE: 21, 35, 112–113, 139, 140–141, 166–167, 176–177, 192–193, 230–231
2. Plot points on a grid.	TE: 524–525, 526–527, 528–530, 538–541, 542–544, 550–552 PE: 524–525, 526–527, 528–530, 538–541, 542–544, 550–552
3. Use simple two-dimensional coordinate systems to find locations on a map.	TE: 524–525, 526–527, 538–541 PE: 524–525, 526–527, 538–541
4. Describe a problem situation based on a given open sentence.	TE: 78–80, 132–134 PE: 78–80, 132–134
CAS C. Use variables and equations to solve problems.	
1. Show that an equal or unequal relationship between two quantities remains the same as long as the same change is made to both quantities.	TE: 74–77, 78–80, 82–86, 123, 132–135, 136–138, 142–143, 144–146, 171, 183, 239 PE: 74–77, 78–80, 82–86, 123, 132–135, 136–138, 142–143, 144–146, 171, 183, 239
2. Find the missing number in a number sentence.	TE: 302–307, 522, 536–537, 538–540, 542–544, 546 PE: 302–307, 522, 536–537, 538–540, 542–544, 546
CAS D. Model relationships between quantities using tables, charts, mathematical expressions and equations, and graphs to solve problems relevant to student experiences as well as those which arise from mathematical patterns.	
1. Solve open number sentences.	TE: 52, 75–77, 82–83, 84–87, 123, 136–138, 142–143, 144–146 PE: 52, 75–77, 82–83, 84–87, 123, 136–138, 142–143, 144–146
2. Use numbers to answer questions about simple mathematical patterns.	TE: 21, 35, 112–113, 139, 140–141, 166–167, 175, 176–177, 192–193, 230–231, 325, 384–385, 405, 494–495 PE: 21, 35, 112–113, 139, 140–141, 166–167, 175, 176–177, 192–193, 230–231, 325, 384–385, 405, 494–495
3. Solve problems involving whole numbers, decimals, and exponents.	TE: 376, 385, 389, 390–391, 393, 395, 405 PE: 376, 385, 389, 390–391, 393, 395, 405
4. Estimate, then compute, to find the answer to problems and give answers in both forms.	TE: 67, 88–89, 129, 141, 149, 177, 189, 227, 243, 261, 287, 299, 335, 347, 391, 431, 533, 547, 577, 587, 591 PE: 67, 88–89, 129, 141, 149, 177, 189, 227, 243, 261, 287, 299, 335, 347, 391, 431, 533, 547, 577, 587, 591

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5. Collect data and analyze information; draw conclusions.	TE: 5, 8, 15, 16, 17, 22, 26, 29, 58, 60, 62, 66, 83, 95, 99, 114, 121, 143, 144, 166, 187, 191, 196, 198, 200–201, 219, 224, 233, 239, 240, 247, 248, 253, 258, 284, 290, 303, 328, 329, 340, 353, 354–355, 356, 363, 365, 376, 393, 409, 414–415, 416–417, 418–420, 422–425, 426–429, 439, 446, 449, 451, 452, 481, 486–487, 493, 497, 500, 502, 536, 572, 582 PE: 5, 8, 15, 16, 17, 22, 26, 29, 58, 60, 62, 66, 83, 95, 99, 114, 121, 143, 144, 166, 187, 191, 196, 198, 200–201, 219, 224, 233, 239, 240, 247, 248, 253, 258, 284, 290, 303, 328, 329, 340, 353, 354–355, 356, 363, 365, 376, 393, 409, 414–415, 416–417, 418–420, 422–425, 426–429, 439, 446, 449, 451, 452, 481, 486–487, 493, 497, 500, 502, 536, 572, 582
State Goal 9: Use geometric methods to analyze, categorize, and draw conclusions about points, lines, planes, and space.	
CAS A. Draw line segments, rays, lines (one dimension) and plane figures (two dimensions), and construct solids (three dimensions).	
1. Extend geometric patterns, using concrete and pictorial models.	TE: 140–141, 325, 494–495, 501, 503 PE: 140–141, 325, 494–495, 501, 503
2. Identify and draw three-dimensional shapes.	TE: 498–499, 500–501, 502–503, 504–505 PE: 498–499, 500–501, 502–503, 504–505
3. Develop methods for and draw parallel lines, and perpendicular lines, using appropriate tools.	TE: These pages involve identifying lines; see Level 5 for using tools to draw. 460–463 PE: These pages involve identifying lines; see Level 5 for using tools to draw. 460–463
4. Identify, draw, and label parts of a circle (center, diameter, radius).	TE: 470–471 PE: 470–471
5. Use same patterns to cover an area, using concrete objects.	TE: 486–487, 488–490, 494–495 PE: 486–487, 488–490, 494–495
CAS B. Identify, describe, and categorize geometric objects by their properties (parallel, perpendicular, similar, congruent, symmetric about a line).	
1. Determine the congruence of geometric figures by placing one figure over another.	TE: 458, 474–476 PE: 458, 474–476
CAS C. Describe the properties of and the relationships among 1-, 2-, and 3- dimensional figures (rectangles, triangles, squares, circles, cubes, prisms, pyramids, cones, cylinders, line segments, rays, and angles).	
1. Describe the relationship among points, lines, line segments, rays, and angles.	TE: 458, 460–463, 464–465, 498–499 PE: 458, 460–463, 464–465, 498–499
2. Identify and describe parts of geometric figures (vertex, radius, diameter, angle, side, edge, face).	TE: 458, 464–465, 466–467, 468–469, 470–471, 498–500 PE: 458, 464–465, 466–467, 468–469, 470–471, 498–500

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3. Identify space figures (cube, prism, pyramid, cone, cylinder, sphere).	TE: 498–499, 500, 502–503, 504–505 PE: 498–499, 500, 502–503, 504–505
4. Identify, describe, and categorize triangles by their angles (right, obtuse, acute) and by their sides (equilateral, isosceles, and scalene).	TE: 458, 464–465, 468–469 PE: 458, 464–465, 468–469
5. Identify and describe polygons by the number of sides.	TE: 458, 466 PE: 458, 466
6. Identify and describe complementary angles.	TE: See level 5. PE: See level 5.
7. Draw and describe various quadrilaterals and triangles.	TE: 458, 466–467, 468–469 PE: 458, 466–467, 468–469
CAS D. Present informational logical arguments (e.g., the area of a right triangle with legs of 3” and 4” is 6 square inches because it is half the area of a 3” x 4” rectangle) using concrete objects, diagrams, and technology.	
1. Explain and describe the difference between the perimeter and the area of a figure.	TE: 488–491 PE: 488–491
2. Draw or construct a simple geometric model.	TE: 464–465, 469, 471, 498–501 PE: 464–465, 469, 471, 498–501
State Goal 10: <i>Collect, organize, and analyze data, using statistical methods to predict results and interpret uncertainty and chance in practical applications.</i>	
CAS A. Interpret data comparing sets of data and using tallies, tables, charts, bar graphs, line graphs, and line plots.	
1. Find the mean, or average, of a series of numbers.	TE: 250–253, 256–257, 418–420 PE: 250–253, 256–257, 418–420
2. Create and describe similarities between bar graphs and line graphs and interpret data on each.	TE: 83, 121, 196, 224, 258, 414–415, 422–425, 426–429, 439, 446, 449, 451, 452, 481, 582 PE: 83, 121, 196, 224, 258, 414–415, 422–425, 426–429, 439, 446, 449, 451, 452, 481, 582
CAS B. Draw conclusions and evaluate arguments based on data analysis and data displays (tables, charts, graphs), verifying reasoning.	
1. Make statements based on data from tables, charts, and graphs.	TE: 5, 8, 15, 16, 17, 22, 26, 29, 58, 60, 62, 66, 83, 95, 99, 114, 121, 143, 144, 166, 187, 191, 196, 198, 200–201, 219, 224, 233, 239, 240, 247, 248, 253, 258, 284, 290, 303, 328, 329, 340, 353, 354–355, 356, 363, 365, 376, 393, 409, 414–415, 422–425, 426–429, 439, 446, 449, 451, 452, 481, 486–487, 493, 497, 500, 502, 536, 582 PE: 5, 8, 15, 16, 17, 22, 26, 29, 58, 60, 62, 66, 83, 95, 99, 114, 121, 143, 144, 166, 187, 191, 196, 198, 200–201, 219, 224, 233, 239, 240, 247, 248, 253, 258, 284, 290, 303, 328, 329, 340, 353, 354–355, 356, 363, 365, 376, 393, 409, 414–415, 422–425, 426–429, 439, 446, 449, 451, 452, 481, 486–487, 493, 497, 500, 502, 536, 582

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<p>2. Make general statements based on a given set of data.</p>	<p>TE: 5, 8, 15, 16, 17, 22, 26, 29, 58, 60, 62, 66, 83, 95, 99, 114, 121, 143, 144, 166, 187, 191, 196, 198, 200–201, 219, 224, 233, 239, 240, 247, 248, 253, 258, 284, 290, 303, 328, 329, 340, 353, 354–355, 356, 363, 365, 376, 393, 409, 414–415, 418–420, 422–425, 426–429, 439, 446, 449, 451, 452, 481, 486–487, 493, 497, 500, 502, 536, 572, 582</p> <p>PE: 5, 8, 15, 16, 17, 22, 26, 29, 58, 60, 62, 66, 83, 95, 99, 114, 121, 143, 144, 166, 187, 191, 196, 198, 200–201, 219, 224, 233, 239, 240, 247, 248, 253, 258, 284, 290, 303, 328, 329, 340, 353, 354–355, 356, 363, 365, 376, 393, 409, 414–415, 418–420, 422–425, 426–429, 439, 446, 449, 451, 452, 481, 486–487, 493, 497, 500, 502, 536, 572, 582</p>
<p>3. Organize data, then analyze it.</p>	<p>TE: 5, 8, 15, 16, 17, 22, 26, 29, 58, 60, 62, 66, 83, 95, 99, 114, 121, 143, 144, 166, 187, 191, 196, 198, 200–201, 219, 224, 233, 239, 240, 247, 248, 253, 258, 284, 290, 303, 328, 329, 340, 353, 354–355, 356, 363, 365, 376, 393, 409, 414–415, 418–420, 422–425, 426–429, 439, 446, 449, 451, 452, 481, 486–487, 493, 497, 500, 502, 536, 572, 582</p> <p>PE: 5, 8, 15, 16, 17, 22, 26, 29, 58, 60, 62, 66, 83, 95, 99, 114, 121, 143, 144, 166, 187, 191, 196, 198, 200–201, 219, 224, 233, 239, 240, 247, 248, 253, 258, 284, 290, 303, 328, 329, 340, 353, 354–355, 356, 363, 365, 376, 393, 409, 414–415, 418–420, 422–425, 426–429, 439, 446, 449, 451, 452, 481, 486–487, 493, 497, 500, 502, 536, 572, 582</p>
<p>4. Interpret data and draw conclusions.</p>	<p>TE: 5, 8, 15, 16, 17, 22, 26, 29, 58, 60, 62, 66, 83, 95, 99, 114, 121, 143, 144, 166, 187, 191, 196, 198, 200–201, 219, 224, 233, 239, 240, 247, 248, 253, 258, 284, 290, 303, 328, 329, 340, 353, 354–355, 356, 363, 365, 376, 393, 409, 414–415, 418–420, 422–425, 426–429, 439, 446, 449, 451, 452, 481, 486–487, 493, 497, 500, 502, 536, 572, 582</p> <p>PE: 5, 8, 15, 16, 17, 22, 26, 29, 58, 60, 62, 66, 83, 95, 99, 114, 121, 143, 144, 166, 187, 191, 196, 198, 200–201, 219, 224, 233, 239, 240, 247, 248, 253, 258, 284, 290, 303, 328, 329, 340, 353, 354–355, 356, 363, 365, 376, 393, 409, 414–415, 418–420, 422–425, 426–429, 439, 446, 449, 451, 452, 481, 486–487, 493, 497, 500, 502, 536, 572, 582</p>
<p>5. Read a familiar schedule.</p>	<p>TE: 298–299 PE: 298–299</p>
<p>CAS C. Formulate questions of interest and select ways to systematically collect, organize, and describe data appropriate to the questions.</p>	

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<p>1. Gather, organize, and display data using tallies, tables, charts, bar graphs, and line graphs.</p>	<p>TE: 5, 8, 15, 16, 17, 22, 26, 29, 58, 60, 62, 66, 83, 95, 99, 114, 121, 143, 144, 166, 187, 191, 196, 198, 200–201, 219, 224, 233, 239, 240, 247, 248, 253, 258, 284, 290, 303, 328, 329, 340, 353, 354–355, 356, 363, 365, 376, 393, 409, 414–415, 416–417, 418–420, 422–425, 426–427, 428–429, 439, 443, 446, 449, 451, 452, 481, 486–487, 493, 497, 500, 502, 536, 572, 582 PE: 5, 8, 15, 16, 17, 22, 26, 29, 58, 60, 62, 66, 83, 95, 99, 114, 121, 143, 144, 166, 187, 191, 196, 198, 200–201, 219, 224, 233, 239, 240, 247, 248, 253, 258, 284, 290, 303, 328, 329, 340, 353, 354–355, 356, 363, 365, 376, 393, 409, 414–415, 416–417, 418–420, 422–425, 426–427, 428–429, 439, 443, 446, 449, 451, 452, 481, 486–487, 493, 497, 500, 502, 536, 572, 582</p>
<p>2. Create and give a simple survey, and tally the results.</p>	<p>TE: 416–417, 435, 438, 443 PE: 416–417, 435, 438, 443</p>
<p>3. Select and survey a sample group, describing why this group was selected.</p>	<p>TE: 416–417 PE: 416–417</p>
<p>CAS D. Determine the probability of events when there are equally likely outcomes.</p>	
<p>1. Determine the probability distribution of an event, using concrete materials, representing all possible results.</p>	<p>TE: 434–435 PE: 434–435</p>
<p>2. Express as a fraction the probability that a single event will occur.</p>	<p>TE: 436–437, 438–439, 440–441, 442 PE: 436–437, 438–439, 440–441, 442</p>
<p>3. Compare the likelihood of events as <i>more likely</i> or <i>less likely</i>.</p>	<p>TE: 434–435 PE: 434–435</p>
<p>4. Find all possible arrangements involving a limited number of variables.</p>	<p>TE: 434–435, 436–437, 438–439, 440–441 PE: 434–435, 436–437, 438–439, 440–441</p>