

*Houghton Mifflin Math Expressions*  
**Grade 3**  
 correlated to  
**Illinois Mathematics Assessment Framework**

Illinois Mathematics Assessment Framework	<i>Houghton Mifflin Math Expressions</i>
<b>STATE GOAL 6: NUMBER SENSE</b>	
<b>Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions.</b>	
<b>Calculators Not Allowed</b>	
<b>Standard 6A – Representations and Ordering</b>	
Demonstrate knowledge and use of numbers and their representations in a broad range of theoretical and practical settings.	
<b>Read, Write, and Represent Numbers</b>	
<b>6.3.01</b> Read, write, recognize, and model equivalent representations of whole numbers and their place values up to 100,000.	SAB: 1, 2, 7–10, 12, 13, 15, 17, 31, 123 TG: 2, 12, 13, 14, 17, 18, 21, 22, 29, 30–36, 48–49, 72–73, 97, 266, 274–275, 283 H/R: 1, 3, 5, 7, 9
<b>6.3.02</b> Identify and write (in words and standard form) whole numbers up to 100,000.	SAB: 2, 12, 15, 17 TG: 6–7, 9, 13–14, 18, 23, 30, 34, 78 H/R: 1, 3, 5, 7
<b>6.3.03</b> Recognize a fraction represented with a pictorial model.	SAB: 417, 418, 419, 420, 423, 424, 426, 435, 436, 439, 440, 441, 449, 451, 452, 453, 454, 455, 457, 458, 459, 461, 465, 466, 469, 470 TG: 728, 738–742, 744–748, 751, 753, 759, 763, 764, 767, 770–774, 782–788, 790, 797, 799, 800, 801, 802, 805–807, 810, 816–824, 826–827, 829, 831, 832, 834–836, 839, 842, 954 H/R: 243, 245, 255, 257, 259, 261, 263, 265, 267, 271, 273
<b>6.3.04</b> Represent multiplication as repeated addition.	SAB: 193, 194, 219, 238, 279 TG: 420, 422, 425, 435, 442, 461–462, 493, 497–498, 521, 537–538, 590, 595, 608, 623 H/R: 105
<b>Order and Compare Numbers</b>	
<b>6.3.05</b> Order and compare whole numbers up to 10,000 using symbols (>, <, or =) and words (e.g., greater (more) than, less than, equal to, between).	SAB: 131, 132, 514, 515 TG: 8, 193, 282–288, 329, 394, 555, 927–928 H/R: 69, 517
<b>6.3.06</b> Order and compare decimals expressed using monetary units.	SAB: 135 TG: 294 H/R: 71
<b>Number Line</b>	
<b>6.3.07</b> Identify and locate whole numbers and halves on a number line.	SAB: 470 TG: 422, 462, 711, 840, 846, 909, 973 H/R: 271

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<b>Classifications of Numbers</b>	
<b>6.3.08</b> Solve problems involving descriptions of numbers, including characteristics and relationships (e.g., odd/even, factors/multiples, greater than, less than).	SAB: 194 TG: 51, 107, 183, 410, 413, 425, 493, 498, 521, 554, 595, 670
<b>Standards 6B, 6C – Computation, Operations, Estimation, and Properties</b>	
<b>6B:</b> Investigate, represent and solve problems using number facts, operations (addition, subtraction, multiplication, division) and their properties, algorithms and relationships.	
<b>6C:</b> Compute and estimate using mental mathematics, paper-and-pencil methods, calculators and computers.	
<b>Number Operations</b>	
<b>6.3.09</b> Solve problems and number sentences involving addition and subtraction with regrouping.	SAB: 19, 20, 23, 24, 31, 32, 35, 37, 42, 43, 95 TG: 38, 46–52, 54, 60, 66, 71, 72–80, 81, 87–90, 91, 92–94, 98, 99, 104–108, 109, 111, 113, 118, 124, 167–169, 171, 215–216, 222–224 H/R: 11, 13, 15, 19, 21, 23
<b>6.3.10</b> Solve problems involving the value of a collection of bills and coins whose total value is \$10.00 or less, and make change.	SAB: 11, 25, 26, 27, 28, 29, 34, 38, 41, 133, 134, 135, 137, 138, 139, 140, 141 TG: 14–16, 19, 54, 61, 67–70, 85–86, 89, 95, 110, 112–114, 117, 124, 291, 298, 303, 304, 309, 310–311, 317, 345, 353, 361, 394, 468 H/R: 3, 13, 15, 17, 21, 23, 27, 71, 73, 75, 77
<b>6.3.11</b> Model and apply basic multiplication facts (up to $10 \times 10$ ), and apply them to related multiples of 10 (e.g., $3 \times 4 = 12$ , $30 \times 4 = 120$ ).	SAB: 193, 194, 199, 200, 201, 202, 203, 205, 207, 215, 216, 217, 219, 220, 221–222, 223, 224, 225, 227, 230, 231, 235–236, 237, 238, 239, 240, 243–244, 245–270, 271, 272, 273, 275, 277, 279, 280, 281, 283, 285, 287, 288, 289, 291–292, 293–296, 297–299, 301, 303, 304, 323, 324, 327, 329, 333, 334, 335, 339, 340, 341–344, 346, 348, 349, 351, 353, 358, 359–361, 365, 367, 369, 375, 378, 379–382, 385–388, 390, 391, 472, 473, 476 TG: 420–428, 429, 430–436, 437, 438, 449, 450–458, 459, 460–468, 469, 470, 477, 478–486, 487, 488–494, 495, 496, 505, 506–512, 513, 514–518, 519, 520, 527, 528–534, 535, 536–544, 545, 546–550, 551–556, 560, 574, 582, 587, 588, 597, 598–604, 605, 606, 615–620, 621, 622–630, 631, 632–640, 641, 642–648, 649, 650–656, 657, 658–662, 663, 664–672, 673, 674–680, 681, 682, 687, 688, 690–692, 700, 727, 850, 856–862, 866–868, 917, 923 H/R: 105, 107, 111, 115, 121, 125, 131, 135, 139, 169, 171, 177, 179, 183, 187, 191, 201, 203, 205, 209, 211, 215, 217, 219, 223, 227, 229, 231, 233, 235, 275, 277, 279

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<b>Properties</b>	
<b>6.3.12</b> Use the inverse relationships between addition and subtraction to complete basic fact sentences and solve problems (e.g., $5 + 3 = 8$ and $8 - 3 = \underline{\quad}$ ).	SAB: 39, 40, 71, 73, 78, 80 TG: 48–49, 100–103, 107–108, 116, 164, 168–169, 171, 174–177, 180–183, 187, 205, 207, 211, 218–219, 221, 351 H/R: 25
<b>6.3.13</b> Solve problems involving the multiplicative identity of one (e.g., $3 \times 1 = 3$ ) and the additive identity of zero (e.g., $3 + 0 = 3$ ).	SAB: 288 TG: 537–538, 542–544 H/R: 183
<b>Estimation</b>	
<b>6.3.14</b> Make estimates appropriate to a given situation with whole numbers.	SAB: 124, 128, 129, 130 TG: 270, 276, 860 H/R: 65, 67
<b>Standard 6D – Ratios, Proportions, and Percents</b> Solve problems using comparison of quantities, ratios, proportions and percents.	
<b>Identify and Express Ratios</b>	
No benchmark expectations at this grade level.	
<b>Proportional Reasoning</b>	
No benchmark expectations at this grade level.	
<b>Percents</b>	
No benchmark expectations at this grade level.	
<b>STATE GOAL 7 MEASUREMENT:</b> <b>Estimate, make and use measurements of objects, quantities and relationships and determine acceptable levels of accuracy.</b>	
<b>Calculators Not Allowed</b>	
<b>Standards 7A, 7B, 7C – Units, Tools, Estimation, and Applications</b> <b>7A:</b> Measure and compare quantities using appropriate units, instruments and methods. <b>7B:</b> Estimate measurements and determine acceptable levels of accuracy. <b>7C:</b> Select and use appropriate technology, instruments and formulas to solve problems, interpret results and communicate findings.	
<b>Elapsed Time</b>	
<b>7.3.01</b> Solve problems involving simple elapsed time in compound units (e.g., hours, minutes, days).	SAB: 409, 410, 411, 412 TG: 695, 711–715, 726 H/R: 239, 241
<b>Measurement Tools</b>	
<b>7.3.02</b> Select and use appropriate standard units and tools to measure length (to the nearest inch or cm), time (to the nearest minute), and temperature (to the nearest degree).	SAB: 47, 48, 401, 402, 403, 404, 413, 507, 508, 512, 516, 518, 519, 520, 521, 523, 526, 529, 530, 531, 533, 534 TG: 126–128, 131, 162, 702, 718, 726, 910, 920–922, 929–932, 935–938, 940–946, 948–952, 956–958, 966–972, 974–978, 988 H/R: 35, 237, 241, 291, 293, 295, 297, 299, 301, 303, 307, 309

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<b>Area, Perimeter, and Circumference</b>	
<b>7.3.03</b> Solve problems involving the perimeter of a polygon with given side lengths or a given non-standard unit (e.g., paperclip).	SAB: 49, 57, 59, 307, 309, 313, 314, 317, 318, 517, 518 TG: 129, 140, 142, 145, 152, 562–564, 566, 570–574, 578–582, 586, 934, 936–938 H/R: 31, 35, 193, 195, 197, 297
<b>7.3.04</b> Solve problems involving the area of a figure when whole and half square units are shown within the figure.	SAB: 307, 308, 309, 313, 314, 315, 316, 318, 357 TG: 563–567, 574, 576–577, 579–582, 586, 651 H/R: 193, 195, 197
<b>Estimation</b>	
<b>7.3.05</b> Compare and estimate length (including perimeter), area, and weight/mass using referents.	SAB: 507, 513, 517, 523, 532 TG: 131, 913, 915, 921, 924, 925, 931, 932, 934, 937, 951, 952, 966, 972, 980–984 H/R: 291, 295, 297, 301, 307
<b>Volume and Surface Area</b>	
<b>7.3.06</b> Determine the volume of a solid figure that shows cubic units.	SAB: 492 TG: 884–885
<b>Measurement Conversions</b>	
<b>7.3.07</b> Solve problems involving simple unit conversions within the same measurement system for time and length.	SAB: 511, 514, 515, 519, 520, 527, 529, 531 TG: 918–919, 921–922, 926–928, 931, 941–942, 945, 960, 967, 969 H/R: 293, 295, 299, 301, 305
<b>Indirect Measurements and Scale Drawings</b>	
No benchmark expectations at this grade level.	
<b>STATE GOAL 8: ALGEBRA:</b> <b>Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.</b>	
<b>Calculators Not Allowed</b>	
<b>Standard 8A – Representations, Patterns, and Expressions</b> Describe numerical relationships using variables and patterns.	
<b>Patterns</b>	
<b>8.3.01</b> Determine a missing term in a pattern (sequence), describe a pattern (sequence), and extend a pattern (sequence) when given a description or pattern (sequence).	SAB: 147, 180, 185, 186, 187, 188, 189, 190 TG: 69, 119, 215, 322, 352, 397, 399, 402–406, 408–414, 418 H/R: 99, 101
<b>Write and Simplify Expressions</b>	
<b>8.3.02</b> Write an expression to represent a given situation.	SAB: 31, 132, 339, 449 TG: 49–50, 72, 78, 97, 205, 211, 221, 279, 285–286, 623, 762, 767, 799, 832 H/R: 69, 269

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<b>Evaluate Algebraic Expressions</b>	
No benchmark expectations at this grade level.	
<b>Standard 8B – Connections Using Tables, Graphs, and Symbols</b>	
Interpret and describe numerical relationships using tables, graphs and symbols.	
<b>Describing Change</b>	
No benchmark expectations at this grade level.	
<b>Coordinate System</b>	
No benchmark expectations at this grade level.	
<b>Representations</b>	
No benchmark expectations at this grade level.	
<b>Inequalities</b>	
No benchmark expectations at this grade level.	
<b>Standard 8C, 8D – Writing, Interpreting, and Solving Equations</b>	
<b>8C:</b> Solve problems using systems of numbers and their properties.	
<b>8D:</b> Use algebraic concepts and procedures to represent and solve problems.	
<b>Calculators Not Allowed</b>	
<b>Write Equations and Inequalities</b>	
<b>8.3.03</b> Represent simple mathematical relationships with number sentences (equations and inequalities).	SAB: 71, 73, 79, 80, 199, 200, 207, 357, 371, 372, 373 TG: 89, 164, 167, 168, 171, 177, 181–183, 188, 193, 341, 355, 357–358, 430–431, 440–441, 478, 613, 651, 656, 667–669 H/R: 223, 229
<b>Solve Equations and Inequalities</b>	
<b>8.3.04</b> Solve one–step addition and subtraction equations that have a missing number or missing operation sign (e.g., $3 + \underline{\quad} = 5$ , $6 \underline{\quad} 1 = 7$ ).	SAB: 73, 78, 80 TG: 163, 168, 173, 175–177, 179, 182, 185, 195, 201, 209, 217
<b>8.3.05</b> Solve word problems involving unknown quantities.	SAB: 13, 16, 19, 20, 23, 33, 43, 72, 73, 77, 79, 80, 81, 82, 83, 84, 85, 86, 87, 89, 90, 91, 93, 94, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 200, 201, 209, 210, 225, 232, 233, 241, 274, 303, 329, 330, 336, 337, 345, 347, 350, 352, 370, 371, 372, 373, 376, 377, 383, 384, 389, 425, 428, 430, 432, 434, 464, 471, 474, 475, 524 TG: 24–25, 27, 31, 38–39, 42, 46, 82–84, 98, 114, 118, 120, 152, 166, 175, 178, 180, 184, 186–194, 196, 202–208, 210, 218–221, 228, 340, 346, 354, 362, 394, 431–433, 442, 468, 474, 490–491, 502, 515, 553, 560, 601–604, 617, 633–637, 644, 646, 665–669, 676, 683, 689, 694–696, 700, 745, 752, 758, 764, 766, 830, 848, 850, 858–859, 864–865, 950 H/R: 5, 7, 9, 11, 13, 17, 19, 21, 23, 29, 41, 43, 45, 47, 49, 51, 53, 55, 85, 87, 89, 91, 115, 121,

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<b>STATE GOAL 9: GEOMETRY</b>	
Use geometric methods to analyze, categorize and draw conclusions about points, lines, planes and space.	
<b>Calculators Not Allowed</b>	
<b>Standard 9A – Properties of Single Figures and Coordinate Geometry</b>	
Demonstrate and apply geometric concepts involving points, lines, planes and space.	
<b>Properties of Single Figures</b>	
<b>9.3.01</b> Identify, describe, and sketch two-dimensional shapes (triangles, squares, rectangles, pentagons, hexagons, and octagons) according to the number of sides, length of sides, and number of vertices.	SAB: 49, 50, 57, 58, 60, 65, 66, 67, 68, 99, 107, 111, 112, 113, 114, 115 TG: 129–130, 140–141, 143, 148, 154–158, 162, 230, 238, 241, 244–252, 264 H/R: 35, 37, 61
<b>9.3.02</b> Identify and describe three-dimensional shapes (cubes, spheres, cones, cylinders, prisms, and pyramids) according to their characteristics (faces, edges, vertices).	SAB: 479, 481, 483, 487, 488, 489, 490, 491, 492, 493, 495, 497, 499, 501, 502, 504 TG: 874, 880–886, 888–892, 894–898, 902–904, 908 H/R: 281, 283, 285, 287, 289
<b>Circles</b>	
No benchmark expectations at this grade level.	
<b>Coordinate Geometry</b>	
<b>9.3.03</b> Locate and identify points using numbers and symbols on a grid, and describe how points relate to each other on a grid (e.g., ♥ is 2 units below *, point A is 3 units to the right of point B).	SAB: 537, 538, 539, 540, 543, 544, 545, 546, 547, 548, 549, 550 TG: 990, 996–1000, 1002–1006, 1010 H/R: 311, 313, 315
<b>Symmetry</b>	
<b>9.3.04</b> Identify whether or not a figure has a line of symmetry, and sketch or identify the line of symmetry.	SAB: 100, 101, 108 TG: 231–232, 239, 264 H/R: 57, 59
<b>Transformations</b>	
<b>9.3.05</b> Identify images resulting from flips (reflections), slides (translations), or turns (rotations).	SAB: 179, 180, 181, 182, 186 TG: 241, 396, 404, 418 H/R: 97, 99
<b>Lines, Segments, Rays, and Angles</b>	
<b>9.3.06</b> Identify parallel lines.	SAB: 54, 55, 56 TG: 138, 143, 230 H/R: 33

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<b>Standard 9B – Relationships Between and Among Multiple Figures</b>	
Identify, describe, classify and compare relationships using points, lines, planes and solids.	
<b>Relationships Between Two– and Three–Dimensional Objects</b>	
<b>9.3.07</b> Identify the two– dimensional components of a three–dimensional object (e.g., a cube has square faces).	SAB: 488 TG: 875, 877, 881, 889, 890, 894, 897, 903 H/R: 289
<b>9.3.08</b> Identify a three–dimensional object from its net.	SAB: 479, 481, 483, 493, 495, 497, 499, 502 TG: 874, 888, 894, 896–898 H/R: 281, 285, 287
<b>Composing and Decomposing Figures</b>	
<b>9.3.09</b> Predict the result of putting shapes together (composing) and taking them apart (decomposing).	SAB: 63, 108, 115 TG: 144–146, 151, 239, 249, 264
<b>Congruency and Similarity</b>	
<b>9.3.10</b> Identify congruent and similar figures by visual inspection.	SAB: 103, 104, 108, 109 TG: 233, 239, 250, 264 H/R: 57, 59
<b>Distance</b>	
<b>9.3.11</b> Determine the distance between two points on the number line in whole numbers.	TG: 422, 462, 711, 713, 714, 836, 973
<b>Standard 9C – Justifications of Conjectures and Conclusions</b>	
Construct convincing arguments and proofs to solve problems.	
<i>This standard is not assessed in isolation. Rather, its essence is assessed indirectly through problems that require this type of thinking.</i>	
<b>Standard 9D – Trigonometry</b>	
Use trigonometric ratios and circular functions to solve problems.	
<i>This standard is not assessed on the state assessment until grade 11.</i>	
<b>STATE GOAL 10: DATA ANALYSIS, STATISTICS, AND PROBABILITY</b>	
<b>Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty-using concepts of probability.</b>	
<b>Calculators Not Allowed</b>	
<b>Standards 10A, 10B – Data Analysis and Statistics</b>	
<b>10A:</b> Organize, describe and make predictions from existing data.	
<b>10B:</b> Formulate questions, design data collection methods, gather and analyze data and communicate findings.	
<b>Read and Interpret Displays</b>	
<b>10.3.01</b> Read and interpret data represented in a pictograph, bar graph, Venn diagram (with two circles), tally chart, or table.	SAB: 145, 146, 147, 149, 150, 151, 153, 154, 167, 168, 169, 171, 172, 173, 189, 348, 351, 390, 427, 429, 431 TG: 80, 90, 318, 326, 334, 370, 378–384, 386–390, 394, 410, 475, 517, 525, 543, 638, 645, 647, 662, 672, 680, 690, 695, 741, 751, 756, 762, 776–779

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	H/R: 79, 81, 83, 93, 95, 209, 227, 251

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<b>Complete and Create Displays</b>	
<b>10.3.02</b> Complete missing parts of a pictograph, bar graph, tally chart, or table for a given set of data.	SAB: 146, 147, 150, 154, 189, 390, 431 TG: 320–322, 328–329, 332, 336, 410, 525, 690, 762 H/R: 81, 83, 209
<b>Line of Best Fit</b>	
No benchmark expectations at this grade level.	
<b>Statistics</b>	
<b>10.3.03</b> Determine the mode, given a set of data or a graph.	TG: 386
<b>Standard 10C – Probability</b> Determine, describe and apply the probabilities of events.	
<b>Probability</b>	
<b>10.3.04</b> Classify events using words such as certain, most likely, equally likely, least likely, possible, and impossible.	TG: 778, 779
<b>10.3.05</b> Describe the chances associated with a context presented visually, including using the response format “3 out of 4.”	TG: 778, 779
<b>Outcomes and Counting Principles</b>	
No benchmark expectations at this grade level.	