

Houghton Mifflin Math Expressions
Grade 4
correlated to
Illinois Learning Standards for Mathematics

| Illinois Learning Standards for Mathematics Late Elementary | <i>Houghton Mifflin Math Expressions</i> |
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| STATE GOAL 6: Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions. | |
| A. Demonstrate knowledge and use of numbers and their representations in a broad range of theoretical and practical settings. | |
| 6.A.2 Compare and order whole numbers, fractions and decimals using concrete materials, drawings and mathematical symbols. | SAB: 147, 149, 319, 320, 323, 334, 335, 367, 387, 394, 395, 396 TG: 164, 289, 291, 302–303, 304–305, 307, 733, 734–735, 736, 737, 740, 761, 770, 844, 888, 889, 897, 908, 909–910, 911 H/R: 97, 245 |
| B. Investigate, represent and solve problems using number facts, operations (addition, subtraction, multiplication, division) and their properties, algorithms and relationships. | |
| 6.B.2 Solve one- and two-step problems involving whole numbers, fractions and decimals using addition, subtraction, multiplication and division. | Representative Pages: SAB: 8, 15, 40, 60, 79, 80, 123, 125, 126, 131, 133, 134, 136, 168, 215, 216, 226, 234, 284, 285, 286, 288, 289, 324, 368, 400, 402, 407 TG: 16–17, 31, 67, 86, 123–124, 160–161, 162, 246–249, 254–255, 264, 268–269, 270, 278, 360, 457, 458, 488, 512, 654, 659, 660, 666, 667, 741–742, 846, 920, 925, 938 H/R: 3, 27, 33, 49, 63, 83, 85, 87, 89, 91, 107, 109, 111, 113, 143, 151, 157, 173, 183, 199, 201, 203, 221, 223, 249, 251, 255 |
| C. Compute and estimate using mental mathematics, paper-and-pencil methods, calculators and computers. | |
| 6.C.2a Select and perform computational procedures to solve problems with whole numbers, fractions and decimals. | Representative Pages: SAB: 5, 6, 8, 9, 15, 19, 20, 21, 22, 23, 27, 29, 40, 41, 55, 61, 63, 159, 160, 173, 174, 278, 403 TG: 12, 13, 16, 19, 22, 25, 31, 33, 44, 46, 47, 48, 52, 55, 58, 59, 60, 62–63, 86, 90, 114, 128–129, 334–335, 336–337, 338, 339, 380, 381, 383, 636, 930–931 H/R: 1, 3, 5, 11, 15, 17, 21, 27, 31, 33, 49, 105 |
| 6.C.2b Show evidence that computational results using whole numbers, fractions and decimals are correct and/or that estimates are reasonable. | SAB: 159, 160, 172, 173, 174, 176, 218, 229, 239, 274, 279, 280 TG: 334–335, 336–337, 338, 339, 376, 380, 381, 383, 384, 385, 462–464, 465–466, 467, 497–499, 533–534, 535, 622, 640–643, 644, 645, 646 H/R: 105, 117 |

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| D. Solve problems using comparison of quantities, ratios, proportions and percents. | |
| 6.D.2 Describe the relationship between two sets of data using ratios and appropriate notations (e.g., a/b, a to b, a:b). | |
| STATE GOAL 7: Estimate, make and use measurements of objects, quantities and relationships and determine acceptable levels of accuracy. | |
| A. Measure and compare quantities using appropriate units, instruments and methods. | |
| 7.A.2a Calculate, compare and convert length, perimeter, area, weight/mass and volume within the customary and metric systems. | SAB: 255, 256, 257, 259, 260 TG: 572–574, 575, 577, 583–584, 586, 948, 953 H/R: 165 |
| 7.A.2b Solve addition, subtraction, multiplication and division problems using currency. | SAB: 156, 168, 270 TG: 244, 271, 324, 325, 360, 612, 655 |
| B. Estimate measurements and determine acceptable levels of accuracy. | |
| 7.B.2a Determine and communicate possible methods for estimating a given measure, selecting proper units in both customary and metric systems. | SAB: 255, 413 TG: 211, 567, 569, 572–573, 951, 965, 980, 983 |
| 7.B.2b Estimate conversions between measures within the customary and metric systems. | TG: 569, 953, 971 |
| C. Select and use appropriate technology, instruments and formulas to solve problems, interpret results and communicate findings. | |
| 7.C.2a Describe relationships in a simple scale drawing. | |
| 7.C.2b Construct or draw figures with given perimeters and areas. | TG: 307, 427 |
| STATE GOAL 8: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results. | |
| A. Describe numerical relationships using variables and patterns. | |
| 8.A.2a Identify, describe, extend and create geometric and numeric patterns. | SAB: 58, 276 TG: 4–5, 7–9, 28, 33, 36, 41, 48, 49, 72–73, 76–77, 80–81, 83, 91–92, 93–94, 95, 118, 432, 433, 461, 467, 469, 475, 481, 483, 491, 503, 509, 515, 545, 551, 557, 623, 630, 897 |

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| 8.A.2b Construct and solve number sentences using a variable to represent an unknown quantity. | SAB: 5, 6, 19, 20, 27, 33, 41, 54, 60 TG: 12, 13, 19, 44, 46, 58, 66, 90, 123, 489 H/R: 3, 5, 11, 21, 27 |
| B. Interpret and describe numerical relationships using tables, graphs and symbols. | |
| 8.B.2 Analyze a geometric pattern and express the results numerically. | TG: 95, 432 |
| C. Solve problems using systems of numbers and their properties. | |
| 8.C.2 Explain operations and number properties including commutative, associative, distributive, transitive, zero, equality and order of operations. | SAB: 7, 22, 28, 43, 120, 206 TG: 14–15, 48, 49, 60, 61, 63, 98, 103, 104, 235, 239, 441 H/R: 35, 79 |
| D. Use algebraic concepts and procedures to represent and solve problems. | |
| 8.D.2 Solve linear equations involving whole numbers. | SAB: 58, 123 TG: 9, 118, 246–247, 253, 259, 267, 281, 353, 447, 453 |
| STATE GOAL 9: Use geometric methods to analyze, categorize and draw conclusions about points, lines, planes and space. | |
| A. Demonstrate and apply geometric concepts involving points, lines, planes and space. | |
| 9.A.2a Build physical models of two- and three-dimensional shapes. | SAB: 89, 90, 372, 375, 378 TG: 179, 180, 181, 183, 195, 856–857, 859, 862–863, 864, 866 |
| 9.A.2b Identify and describe how geometric figures are used in practical settings (e.g., construction, art, advertising). | TG: 42, 190, 868, 874 |
| 9.A.2c Describe and draw representations of geometric relationships, patterns, symmetries, and designs in two- and three-dimensions with and without technology. | SAB: 87, 88, 89, 90, 93, 94, 95, 96, 371 TG: 178–179, 180, 181, 182, 186, 187, 854–855, 873 H/R: 233, 235 |
| B. Identify, describe, classify and compare relationships using points, lines, planes and solids. | |
| 9.B.2 Compare geometric figures and determine their properties including parallel, perpendicular, similar, congruent and line symmetry. | SAB: 87, 88, 89, 93, 94, 95, 96 TG: 178–179, 180, 181, 183, 186, 187, 188, 189, 871 H/R: 67, 69 |

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| C. Construct convincing arguments and proofs to solve problems. | |
| 9.C.2 Formulate logical arguments about geometric figures and patterns and communicate reasoning. | SAB: 87 TG: 178, 181, 183, 189, 195, 867 |
| D. Use trigonometric ratios and circular functions to solve problems. | |
| No benchmark expectations at this grade level. | |
| STATE GOAL 10: Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability. | |
| A. Organize, describe and make predictions from existing data. | |
| 10.A.2a Organize and display data using pictures, tallies, tables, charts, bar graphs, line graphs, line plots and stem-and-leaf graphs. | SAB: 75 TG: 147, 149, 151, 152, 307, 598, 704, 705, 708 H/R: 59 |
| 10.A.2b Using a data set, determine mean, median, mode and range, with and without the use of technology. | SAB: 76, 287, 288, 289, 290 TG: 150, 304, 664–665, 666, 667–668, 669 H/R: 185 |
| 10.A.2c Make predictions and decisions based on data and communicate their reasoning. | SAB: 69, 72–74, 303 TG: 142–148, 152, 806 H/R: 169 |
| B. Formulate questions, design data collection methods, gather and analyze data and communicate findings. | |
| 10.B.2a Formulate questions of interest and select methods to systematically collect data. | SAB: 72 TG: 142, 708 |
| 10.B.2b Collect, organize and display data using tables, charts, bar graphs, line graphs, circle graphs, line plots and stem-and-leaf graphs. | SAB: 57, 75 TG: 117, 143, 147, 149, 151, 152, 252, 266, 307, 316, 598, 693, 704, 705 H/R: 59 |
| 10.B.2c Analyze the data using mean, median, mode and range, as appropriate, with or without the use of technology. | SAB: 287, 288, 289, 290 TG: 664–665, 666–667, 668, 669 H/R: 185 |
| 10.B.2d Interpret results or make relevant decisions based on the data gathered. | SAB: 56, 69, 71, 75, 302, 303, 304 TG: 115, 140, 141, 143, 149, 152, 252, 266, 307, 316, 690–691, 692, 693, 694 H/R: 59, 191 |

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| C. Determine, describe and apply the probabilities of events. | |
| 10.C.2a Calculate the probability of a simple event. | SAB: 351, 352 TG: 800–802, 803, 804, 805, 806, 808, 809 H/R: 217 |
| 10.C.2b Compare the likelihood of events in terms of certain, more likely, less likely or impossible. | SAB: 351, 352 TG: 800–802, 803, 804, 805, 806, 808, 809 H/R: 217 |
| 10.C.2c Determine the probability of an event involving “and”, “or” or “not”. | |