

State Goal 6: Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions.

As a result of their schooling students will be able to:

Illinois Learning Standard	Illinois Benchmark	Houghton Mifflin <i>MATHEMATICS</i>
A. Demonstrate knowledge and use of numbers and their representation 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.	TE: 8–11, 14–17, 24–33, 38, 39, 40, 43–46, 51, 55, 61, 107, 108, 137, 156, 196, 199, 215, 219, 252, 261, 263, 301, 321–325, 338, 339, 345, 353, 359, 370, 379, 409, 411, 413, 415, 423, 430, 434, 538, 539, 550–552, 560 PE: 8–11, 14–17, 24–33, 38, 39, 40, 43–46, 51, 55, 61, 107, 108, 137, 156, 196, 199, 215, 219, 252, 261, 263, 301, 321–325, 338, 339, 345, 353, 359, 370, 379, 409, 411, 413, 415, 423, 430, 434, 538, 539, 550–552, 560
B. Investigate, represent and solve problems by 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.	Most lessons involve solving one- and two-step problems involving whole numbers, fractions and decimals using addition, subtraction, multiplication and division. Here are a few of the many examples: TE: 37, 81, 119, 177, 213, 273, 315, 395, 419, 485, 529, 593 PE: 37, 81, 119, 177, 213, 273, 315, 395, 419, 485, 529, 593
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.	TE: 33, 68, 111, 164, 219, 275, 306, 374–375, 388, 397, 430, 526–527, 534, 561, 585 PE: 33, 68, 111, 164, 219, 275, 306,

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		374–375, 388, 397, 430, 526–527, 534, 561, 585
	6.C.2b Show evidence that computational results using whole numbers, fractions and decimals are correct and/or that estimates are reasonable.	TE: 12–13, 19, 41, 46, 52–53, 54–55, 58–59, 61, 68, 98–103, 108, 114–115, 117, 120–123, 125–126, 135, 138–139, 149, 150–157, 164, 173, 178, 215, 263, 269, 303, 385, 388, 403, 410–411, 435, 440, 442, 444, 446, 448, 463, 491, 519, 523, 534, 537, 548 PE: 12–13, 19, 41, 46, 52–53, 54–55, 58–59, 61, 68, 98–103, 108, 114–115, 117, 120–123, 125–126, 135, 138–139, 149, 150–157, 164, 173, 178, 215, 263, 269, 303, 385, 388, 403, 410–411, 435, 440, 442, 444, 446, 448, 463, 491, 519, 523, 534, 537, 548
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 , $a:b$).	TE: 514–567 PE: 514–567

State Goal 7: Estimate, make and use measurements of objects, quantities and relationships to determine acceptable levels of accuracy.

As a result of their schooling students will be able to:

Illinois Learning Standard	Illinois Benchmark	Houghton Mifflin <i>MATHEMATICS</i>
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.	TE: 28–29, 41, 46, 57–63, 68, 96–97, 101, 103, 108, 110–111, 113–115, 126, 143, 146–147, 149, 152–153, 154, 156, 159, 173, 181, 184, 190–197, 198–199,

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		<p>202–205, 206–207, 230–234, 236–237, 255, 261, 264, 267, 287, 292, 313, 323, 325, 327, 338, 342, 346–347, 349, 355, 372–373, 374–375, 380–381, 386, 397, 408–411, 417, 420–423, 425–428, 430, 432, 434, 436–437, 445–446, 452, 453, 460–461, 463, 486–493, 495–499, 506, 508–513, 521, 522–527, 537, 545, 558, 561, 563–564, 566–567, 586–587, 589</p> <p>PE: 28–29, 41, 46, 57–63, 68, 96–97, 101, 103, 108, 110–111, 113–115, 126, 143, 146–147, 149, 152–153, 154, 156, 159, 173, 181, 184, 190–197, 198–199,</p> <p>202–205, 206–207, 230–234, 236–237, 255, 261, 264, 267, 287, 292, 313, 323, 325, 327, 338, 342, 346–347, 349, 355, 372–373, 374–375, 380–381, 386, 397, 408–411, 417, 420–423, 425–428, 430, 432, 434, 436–437, 445–446, 452, 453, 460–461, 463, 486–493, 495–499, 506, 508–513, 521, 522–527, 537, 545, 558, 561, 563–564, 566–567, 586–587, 589</p>
	<p>7.A.2b Solve addition, subtraction, multiplication and division problems using currency.</p>	<p>TE: 35, 56–57, 58–59, 61, 68, 72, 74–75, 78–79, 82, 83, 85–86, 88, 91, 98–99, 101–103, 114–117, 120, 123–128, 135, 134–135, 137, 139, 141, 143, 149, 151, 167, 186, 200–201, 263, 277, 415, 523</p> <p>PE: 35, 56–57, 58–59, 61, 68, 72, 74–75, 78–79, 82, 83, 85–86, 88, 91, 98–99, 101–103, 114–117, 120, 123–128, 135,</p>

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		134–135, 137, 139, 141, 143, 149, 151, 167, 186, 200–201, 263, 277, 415, 523
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.	TE: 45, 205, 498–501 PE: 45, 205, 498–501
	7.B.2b Estimate conversions between measures within the customary and metric systems.	The following pages will prepare students to estimate conversions between measures within the customary and metric systems: TE: 45, 205, 498–501 PE: 45, 205, 498–501
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.	TE: 524–527, 537, 561, 563–564, 566–567 PE: 524–527, 537, 561, 563–564, 566–567
	7.C.2b Construct or draw figures with given perimeters and areas.	The following pages will prepare students to construct or draw figures with given perimeters and areas: TE: 524–527, 537, 561, 563–564, 566–567 PE: 524–527, 537, 561, 563–564, 566–567

State Goal 8: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.

As a result of their schooling students will be able to:

Illinois Learning Standard	Illinois Benchmark	Houghton Mifflin <i>MATHEMATICS</i>
A. Describe numerical relationships, using	8.A.2a Identify, describe, extend and create	TE: 53, 63, 76–77, 106–111, 124–125, 129,

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<p>variables and patterns.</p>	<p>geometric and numeric patterns.</p>	<p>151, 170–172, 199, 277, 281, 319, 417, 421, 434, 466–467, 501, 537, 539, 541, 547, 584–591, 595–597, 599–600, 603 PE: 53, 63, 76–77, 106–111, 124–125, 129, 151, 170–172, 199, 277, 281, 319, 417, 421, 434, 466–467, 501, 537, 539, 541, 547, 584–591, 595–597, 599–600, 603</p>
	<p>8.A.2b Construct and solve number sentences using a variable to represent an unknown quantity.</p>	<p>TE: 16, 66–69, 74–79, 84–85, 87–88, 90, 112–113, 123, 139, 153, 155, 166–175, 180–181, 184, 219, 223, 259, 263, 269, 303, 325, 347, 373, 409, 415, 423, 427, 433, 436–437, 486–492, 498–499, 533, 545, 547, 551, 584–591, 595–597, 599–603 PE: 16, 66–69, 74–79, 84–85, 87–88, 90, 112–113, 123, 139, 153, 155, 166–175, 180–181, 184, 219, 223, 259, 263, 269, 303, 325, 347, 373, 409, 415, 423, 427, 433, 436–437, 486–492, 498–499, 533, 545, 547, 551, 584–591, 595–597, 599–603</p>
<p>B. Interpret and describe numerical relationships, using tables, graphs and symbols.</p>	<p>8.B.2 Analyze a geometric pattern and express the results numerically.</p>	<p>The following pages will prepare students to analyze a geometric pattern and express the results numerically: TE: 63, 76, 77, 199, 281, 417, 466–467, 501, 541 PE: 63, 76, 77, 199, 281, 417, 466–467, 501, 541</p>

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C. Solve problems by 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.	TE: 96–97, 100, 120, 127, 129, 162, 165, 182 PE: 96–97, 100, 120, 127, 129, 162, 165, 182
D. Use algebraic concepts and procedures to represent and solve problems.	8.D.2 Solve linear equations involving whole numbers.	TE: 16, 66–69, 74–79, 84–85, 87–88, 90, 112–113, 123, 139, 153, 155, 166–175, 180–181, 184, 219, 223, 259, 263, 269, 303, 325, 347, 373, 409, 415, 423, 427, 433, 436–437, 486–492, 498–499, 533, 545, 547, 551, 584–591, 595–597, 599–603 PE: 16, 66–69, 74–79, 84–85, 87–88, 90, 112–113, 123, 139, 153, 155, 166–175, 180–181, 184, 219, 223, 259, 263, 269, 303, 325, 347, 373, 409, 415, 423, 427, 433, 436–437, 486–492, 498–499, 533, 545, 547, 551, 584–591, 595–597, 599–603

State Goal 9: Use geometric methods to analyze, categorize, and draw conclusions about points, lines, planes, and space.
As a result of their schooling students will be able to:

Illinois Learning Standard	Illinois Benchmark	Houghton Mifflin <i>MATHEMATICS</i>
A. Demonstrate and apply geometric concepts involving points, lines, planes, and space.	9.A.2a Build physical models of two- and three-dimensional shapes.	TE: 456–461, 470–471, 476–477, 504, 505, 509–510, 513 PE: 456–461, 470–471, 476–477, 504, 505, 509–510, 513
	9.A.2b Identify and describe how geometric figures are used in	TE: 450–513, 568–603 PE: 450–513, 568–603

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	practical settings (e.g., construction, art, advertising).	
	9.A.2c Describe and draw representations of geometric relationships, patterns, symmetries, and designs in two- and three-dimensions with and without technology.	TE: 63, 76, 77, 199, 281, 417, 456–461, 466–467, 470–471, 476–477, 478–480, 501, 504, 505, 509–510, 513, 541 PE: 63, 76, 77, 199, 281, 417, 456–461, 466–467, 470–471, 476–477, 478–480, 501, 504, 505, 509–510, 513, 541
B. Identify, describe, classify and compare relationships by using points, lines, planes and solids.	9.B.2 Compare geometric figures and determine their properties including parallel, perpendicular, similar, congruent and line symmetry.	TE: 454–455, 462–463, 472–477, 478–480, 552, 572–573, 580–581 PE: 454–455, 462–463, 472–477, 478–480, 552, 572–573, 580–581
C. Construct convincing arguments and proofs to solve problems.	9.C.2 Formulate logical arguments about geometric figures and patterns and communicate reasoning.	TE: 63, 76–77, 199, 281, 417, 466–467, 501, 541 PE: 63, 76–77, 199, 281, 417, 466–467, 501, 541

State Goal 10: Collect, organize and analyze data by using statistical methods; predict results and interpret uncertainty by using concepts of probability.

As a result of their schooling students will be able to:

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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.	TE: 19, 21, 23, 31, 33, 37, 40, 61, 63, 64–65, 66–67, 69, 75–76, 79, 81–82, 103–107, 112, 115, 126, 135, 156, 160, 163, 177, 305, 309, 312, 319, 331, 351, 355, 365, 393, 395, 399, 406, 409 PE: 19, 21, 23, 31, 33, 37, 40, 61, 63, 64–65, 66–67, 69, 75–76, 79, 81–82,

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		103–107, 112, 115, 126, 135, 156, 160, 163, 177, 305, 309, 312, 319, 331, 351, 355, 365, 393, 395, 399, 406, 409
	10.A.2b Using a data set, determine mean, median, mode, and range, with and without the use of technology.	TE: 140–141, 154, 172, 178, 182, 258–261, 279, 285, 288–292, 306, 325, 338, 345, 347, 427, 465, 487, 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
	10.A.2c Make predictions and decisions based on data and communicate their reasoning.	TE: 244–275, 284–286, 293 PE: 244–275, 284–286, 293
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.	TE: 244–252, 260–271, 292 PE: 244–252, 260–271, 292
	10.B.2b Collect, organize and display data using tables, charts, bar graphs, line graphs, circle graphs, line plots and stem-and- leaf graphs.	TE: 19, 21, 23, 31, 33, 37, 40, 61, 63, 64–65, 66–67, 69, 75–76, 79, 81–82, 103–107, 112, 115, 126, 135, 156, 160, 163, 177, 244–252, 260–271, 292, 305, 309, 312, 319, 331, 351, 355, 365, 393, 395, 399, 406, 409 PE: 19, 21, 23, 31, 33, 37, 40, 61, 63, 64–65, 66–67, 69, 75–76, 79, 81–82, 103–107, 112, 115, 126, 135, 156, 160, 163, 177, 244–252, 260–271, 292, 305, 309, 312, 319, 331, 351, 355, 365, 393, 395, 399, 406, 409
	10.B.2c Analyze the data using mean,	TE: 140–141, 154, 172, 178, 182, 258–261,

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	median, mode and range, as appropriate, with or without the use of technology.	279, 285, 288–292, 306, 325, 338, 345, 347, 427, 465, 487, 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
	10.B.2d Interpret results or make relevant decisions based on the data gathered.	TE: 244–275, 284–286, 293 PE: 244–275, 284–286, 293
C. Determine, describe, and apply the probabilities of events.	10.C.2a Calculate the probability of a simple event.	TE: 274–291 PE: 274–291
	10.C.2b Compare the likelihood of events in terms of certain, more likely, less likely or impossible.	TE: 276–279, 286–287 PE: 276–279, 286–287
	10.C.2c Determine the probability of an event involving "and", "or" or "not".	TE: 276–279, 286–287 PE: 276–279, 286–287