

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.3 Represent fractions, decimals, percentages, exponents and scientific notation in equivalent forms.	TE: 10–11, 55, 106–107, 122–125, 134–135, 326–331 PE: 10–11, 55, 106–107, 122–125, 134–135, 326–331
B. Investigate, represent and solve problems by using number facts, operations (addition, subtraction, multiplication, division) and their properties, algorithms, and relationships.	6.B.3a Solve practical computation problems involving whole numbers, integers and rational numbers.	TE: 12–13, 18–23, 28–35, 41, 47, 156–163, 168–169, 174–179, 192, 214–225, 238, 239 PE: 12–13, 18–23, 28–35, 41, 47, 156–163, 168–169, 174–179, 192, 214–225, 238, 239
	6.B.3b Apply primes, factors, divisors, multiples, common factors and common multiples in solving problems.	TE: 104–106, 108–117, 258–260, 546, 561 PE: 104–106, 108–117, 258–260, 546
	6.B.3c Identify and apply properties of real numbers including pi, squares, and square roots.	TE: 10–11, 151, 460–465 PE: 10–11, 151, 460–465

Houghton Mifflin *MATHEMATICS* © 2002
 Level 6
 correlated to the
 Illinois Learning Standards for Mathematics
 Middle/Junior High

Illinois Learning Standard	Illinois Benchmark	Houghton Mifflin <i>MATHEMATICS</i>
C. Compute and estimate, using mental mathematics, paper-and-pencil methods, calculators and computers.	6.C.3a Select computational procedures and solve problems with whole numbers, fractions, decimals, percents and proportions.	TE: 7, 9, 13, 14–15, 21, 36–37, 49, 70, 123, 173, 179, 187, 216, 255, 262–263, 265, 281, 307, 309, 327, 351, 358, 360–361, 364–365, 371, 372, 379, 395, 451, 473, 475, 499, 515, 518, 562 PE: 7, 9, 13, 14–15, 21, 36–37, 49, 70, 123, 173, 179, 187, 216, 255, 262–263, 265, 281, 307, 309, 327, 351, 358, 360–361, 364–365, 371, 372, 379, 395, 451, 473, 475, 499, 515, 518, 562
	6.C.3b Show evidence that computational results using whole numbers, fractions, decimals, percents and proportions are correct and/or that estimates are reasonable.	TE: 18–19, 21, 23, 322–323, 339, 508–509, 537, 566–567, 585 PE: 18–19, 21, 23, 322–323, 339, 508–509, 537, 566–567, 585
D. Solve problems, using comparison of quantities, ratios, proportions and percents.	6.D.3 Apply ratios and proportions to solve practical problems.	TE: 304–305, 308–312, 320–321, 332–333, 336, 337, 345, 348, 350–353, 376, 400–401, 416–417, 496–497, 516–518, 520–521 PE: 304–305, 308–312, 320–321, 332–333, 336, 337, 345, 348, 350–353, 376, 400–401, 416–417, 496–497, 516–518, 520–521

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.3a Measure length, capacity, weight/mass and angles using sophisticated instruments (e.g., compass, protractor, trundle wheel).	TE: 184, 394–395, 400–401, 410–415, 461 PE: 184, 394–395, 400–401, 410–415
	7.A.3b Apply the concepts and attributes of length, capacity, weight/mass, perimeter, area, volume, time, temperature and angle measures in practical situations.	TE: 38–40, 184–187, 394–399, 450–455, 460–465, 472–479, 554–555 PE: 38–40, 184–187, 394–399, 450–455, 460–465, 472–479, 554–555
B. Estimate measurements and determine acceptable levels of accuracy.	7.B.3 Select and apply instruments including rulers and protractors and units of measure to the degree of accuracy required.	TE: 184, 394–395, 400–401, 410–415, 461 PE: 184, 394–395, 400–401, 410–415
C. Select and use appropriate technology, instruments and formulas to solve problems, interpret results and communicate findings.	7.C.3a Construct a simple scale drawing for a given situation.	TE: 419, 422 PE: 422
	7.C.3b Use concrete and graphic models and appropriate formulas to find perimeters, areas, surface areas and volumes of two- and three-dimensional regions.	TE: 450–455, 460–462, 464–465, 472–479, 482 PE: 450–455, 460–462, 464–465, 472–479, 482

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 variables and patterns.	8.A.3a Apply the basic properties of commutative, associative, distributive, transitive, inverse, identity, zero, equality and order of operations to solve problems.	TE: 18–19, 232–233, 240, 250, 252–254, 256–260, 262–263, 290, 310, 546, 570–573 PE: 18–19, 232–233, 240, 250, 252–254, 256–260, 262–263, 290, 310, 546, 570–573
	8.A.3b Solve problems using linear expressions, equations and inequalities.	TE: 276–277, 286–287, 293, 314–315, 339, 350–358, 466–467, 554–557, 560–563, 583 PE: 276–277, 286–287, 293, 314–315, 339, 350–358, 466–467, 554–557, 560–563, 583
B. Interpret and describe numerical relationships, using tables, graphs and symbols.	8.B.3 Use graphing technology and algebraic methods to analyze and predict linear relationships and make generalizations from linear patterns.	TE: 550, 553–557, 562, 564–567 PE: 553–557, 564–567

Houghton Mifflin *MATHEMATICS* © 2002
 Level 6
 correlated to the
 Illinois Learning Standards for Mathematics
 Middle/Junior High

Illinois Learning Standard	Illinois Benchmark	Houghton Mifflin <i>MATHEMATICS</i>
C. Solve problems by using systems of numbers and their properties.	8.C.3 Apply the properties of numbers and operations including inverses in algebraic settings derived from economics, business and the sciences.	TE: 18–19, 232–233, 240, 250, 252–254, 256–260, 262–263, 290, 310, 546, 570–573 PE: 18–19, 232–233, 240, 250, 252–254, 256–260, 262–263, 290, 310, 546, 570–573
D. Use algebraic concepts and procedures to represent and solve problems.	8.D.3a Solve problems using numeric, graphic or symbolic representations of variables, expressions, equations and inequalities.	TE: 276–277, 286–287, 293, 314–315, 339, 350–358, 466–467, 554–557, 560–563, 583 PE: 276–277, 286–287, 293, 314–315, 339, 350–358, 466–467, 554–557, 560–563, 583
	8.D.3c Apply properties of powers, perfect squares and square roots.	TE: 10–11, 36–40, 46, 48, 55 PE: 10–11, 36–40, 46, 48, 55

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.3a Draw or construct two- and three-dimensional geometric figures including prisms, pyramids, cylinders and cones.	TE: 396–397, 410–415, 438, 471 PE: 396–397, 410–415, 438, 471
	9.A.3b Draw transformation images of figures, with and without the use of technology.	TE: 426–429 PE: 426–429
	9.A.3c Use concepts of symmetry, congruency, similarity, scale, perspective, and angles to describe and analyze two- and three-dimensional shapes found in practical applications.	TE: 392–401, 404–417, 419–420, 430–431, 437 PE: 392–401, 404–417, 419–420, 430–431, 437
B. Identify, describe, classify and compare relationships by using points, lines, planes and solids.	9.B.3 Identify, describe, classify and compare two- and three-dimensional geometric figures and models according to their properties.	TE: 404–406, 408–411, 413, 414–415, 418–420, 470–479 PE: 404–406, 408–411, 413, 414–415, 418–420, 470–479
C. Construct convincing arguments and proofs to solve problems.	9.C.3a Construct, develop and communicate logical arguments (informal proofs) about geometric figures and patterns.	TE: 390, 392, 399, 408, 416, 419, 430, 431, 445, 461, 463, 470 PE: 390, 392, 399, 408, 416, 419, 430, 431, 445, 461, 463, 470

Houghton Mifflin *MATHEMATICS* © 2002
 Level 6
 correlated to the
 Illinois Learning Standards for Mathematics
 Middle/Junior High

Illinois Learning Standard	Illinois Benchmark	Houghton Mifflin <i>MATHEMATICS</i>
	9.C.3b Develop and solve problems using geometric relationships and models, with and without the use of technology.	TE: 391, 393, 395, 397, 399, 400–401, 406, 409, 417, 420, 422–423, 431–433, 462, 471 PE: 391, 393, 395, 397, 399, 400–401, 406, 409, 417, 420, 422–423, 431–433, 462, 471
D. Use trigonometric ratios and circular functions to solve problems.	9.D.3 Compute distances, lengths and measures of angles using proportions, the Pythagorean theorem and its converse.	TE: 318–321, 332–333, 400–401, 416–417 PE: 318–321, 332–333, 400–401, 416–417

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:

Illinois Learning Standard	Illinois Benchmark	Houghton Mifflin <i>MATHEMATICS</i>
A. Organize, describe and make predictions from existing data.	10.A.3a Construct, read and interpret tables, graphs (including circle graphs) and charts to organize and represent data.	TE: 62–70, 76–77, 80–85, 138–139, 400–401, 504–507, 514, 518 PE: 62–70, 76–77, 80–85, 138–139, 400–401, 504–507
	10.A.3b Compare the mean, median, mode and range, with and without the use of technology.	TE: 58, 60–61, 63, 76–77, 90, 91, 113, 549 PE: 58, 60–61, 76–77, 90, 91
	10.A.3c Test the reasonableness of an argument based on data and communicate their findings.	TE: 63, 64, 69, 70, 73, 85, 98, 499, 504–509, 512–513, 516, 519, 520–521, 526, 529, 530–531, 550, 553 PE: 63, 64, 70, 73, 85, 98, 499, 504–509, 512–513, 516, 519, 520–521, 526, 529, 530–531, 550, 553
B. Formulate questions, design data collection methods, gather and analyze data, and communicate findings.	10.B.3 Formulate questions, devise and conduct experiments or simulations, gather data, draw conclusions and communicate results to an audience using traditional methods and contemporary technologies.	TE: 65, 496–499, 520–521, 530–531 PE: 65, 496–499, 520–521, 530–531

Houghton Mifflin *MATHEMATICS* © 2002
 Level 6
 correlated to the
 Illinois Learning Standards for Mathematics
 Middle/Junior High

Illinois Learning Standard	Illinois Benchmark	Houghton Mifflin <i>MATHEMATICS</i>
C. Determine, describe, and apply the probabilities of events.	10.C.3a Determine the probability and odds of events using fundamental counting principles.	TE: 512–514, 535 PE: 512–514, 535
	10.C.3b Analyze problem situations (e.g., board games, grading scales) and make predictions about results.	TE: 504–509, 516–518, 520–521, 524–531 PE: 504–509, 516–518, 520–521, 524–531