

Houghton Mifflin Math 2007
Grade 6
correlated to
Illinois Learning Standards for Mathematics

Illinois Learning Standards for Mathematics Middle/Junior High School	<i>Houghton Mifflin Math 2007</i>
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.3 Represent fractions, decimals, percentages, exponents and scientific notation in equivalent forms.	PE: 6–7, 90–91, 92–93, 94–97, 98–99, 112–114, 116–118, 135, 175, 429–431, 444–445, 446–447, 448–450, 459, 462–463, 464–465, 466–467, 540–542 TE: 6A–6B, 6–7, 90A–90B, 90–91, 92A–92B, 92–93, 94A–94B, 94–97, 98A–98B, 98–99, 112A–112B, 112–114, 116A–116B, 116–118, 135, 175, 428A–428B, 428–431, 444A–444B, 444–445, 446A–446B, 446–447, 448A–448B, 448–450, 459, 462A–462B, 462–463, 464A–464B, 464–465, 466A–466B, 466–467, 540A–540B, 540–542
B. Investigate, represent and solve problems 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.	PE: 18–19, 34–35, 36–37, 38–40, 282–284, 286–287, 290–291, 292–294, 598–601 TE: 18A–18B, 18–19, 34A–34B, 34–35, 36A–36B, 36–37, 38A–38B, 38–40, 282A–282B, 282–284, 286A–286B, 286–287, 290A–290B, 290–291, 292A–292B, 292–294, 598A–598B, 598–601
6.B.3b Apply primes, factors, divisors, multiples, common factors and common multiples in solving problems.	PE: 60–61, 62–64, 66–68, 69, 70–71, 90–91 TE: 60A–60B, 60–61, 62A–62B, 62–64, 66A–66B, 66–68, 69, 70A–70B, 70–71, 90A–90B, 90–91, 142A
6.B.3c Identify and apply properties of real numbers including pi, squares, and square roots.	PE: 528–530, 540–542, 543, 544–545, 626 TE: 528A–528B, 528–530, 540A–540B, 540–542, 543, 544A–544B, 544–545, 626
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.	PE: 19, 40, 118, 134, 193, 228, 242, 468, 492, 562 TE: 19, 40, 118, 134, 193, 228, 242, 468, 492, 562

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6.C.3b Show evidence that computational results using whole numbers, fractions, decimals, percents and proportions are correct and/or that estimates are reasonable.	PE: 19, 40, 118, 134, 193, 228, 242, 468, 492, 562 TE: 19, 40, 118, 134, 193, 228, 242, 468, 492, 562
D. Solve problems using comparison of quantities, ratios, proportions and percents.	
6.D.3 Apply ratios and proportions to solve practical problems.	PE: 420, 421, 422–423, 426–427, 428–430, 432–434, 441 TE: 420, 422A–422B, 422–423, 426A–426B, 426–427, 428A–428B, 428–430, 432A–432B, 432–434
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.3a Measure length, capacity, weight/mass and angles using sophisticated instruments (e.g., compass, protractor, trundle wheel).	PE: 188, 194, 360–362, 374, 377, 398–399, 400–401 TE: 188A–188B, 188, 194, 198A–198B, 360A–360B, 360–362, 364A–364B, 368B, 370B, 374A–374B, 374, 377, 398A–398B, 398–399, 400A–400B, 400–401
7.A.3b Apply the concepts and attributes of length, capacity, weight/mass, perimeter, area, volume, time, temperature and angle measures in practical situations.	PE: 186–187, 191, 200–201, 202–203, 334–335, 360–363, 526–527, 536–537, 538–539, 543, 544–545, 560–563, 566–567, 568–571, 624–625 TE: 182B–182C, 184D, 186A–186B, 186–187, 191, 200A–200B, 200–201, 202A–202B, 202–203, 334A–334B, 334–335, 360A–360B, 360–363, 524D, 526A–526B, 526–527, 536A–536B, 536–537, 538A–538B, 538–539, 543, 544A–544B, 544–545, 560A–560B, 560–563, 566A–566B, 566–567, 568A–568B, 568–571, 624–625
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.	PE: 188, 194, 200, 360–363, 398–399, 400–401, 527, 537 TE: 184D, 186A–186B, 188A–188B, 188, 194, 198A–198B, 200, 360A–360B, 360–363, 398A–398B, 398–399, 400A–400B, 400–401, 522C, 524D, 526A–526B, 536B, 537
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	PE: 438

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situation.	TE: 437, 438

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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.	PE: 200–201, 202–203, 204, 207, 526–527, 536–537, 538–539, 544–545, 558–559, 560–562, 564–565, 566–567, 571 TE: 200A–200B, 200–201, 202A–202B, 202–203, 204, 205, 526A–526B, 526–527, 536A–536B, 536–537, 538A–538B, 538–539, 544A–544B, 544–545, 558A–558B, 558–559, 560A–560B, 560–562, 563, 564A–564B, 564–565, 566A–566B, 566–567, 571
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.3a Apply the basic properties of commutative, associative, distributive, transitive, inverse, identity, zero, equality and order of operations to solve problems.	PE: 22–24, 46–47, 48–49, 79, 132–135, 142–145, 283, 306–307, 308–311, 429, 592, 594–597, 608 TE: 22A–22B, 22–24, 46A–46B, 46–47, 48A–48B, 48–49, 79, 132A–132B, 132–135, 142A–142B, 142–145, 306A–306B, 306–307, 308A–308B, 308–311, 592, 594A–594B, 594–597
8.A.3b Solve problems using linear expressions, equations and inequalities.	PE: 304–305, 306–307, 308–310, 312–315, 618–620 TE: 304A–304B, 304–305, 306A–306B, 306–307, 308A–308B, 308–310, 312A–312B, 312–315, 618A–618B, 618–620
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.	PE: 324–235, 326–328, 334–336, 339, 340, 341, 342, 343 TE: 324A–324B, 324–325, 326A–326B, 326–328, 330A–330B, 330–332, 333, 334A–334B, 334–336, 340, 342, 343
C. Solve problems 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.	PE: 22–24, 42–44, 46–47, 48–49, 142–145, 306–307, 308–311, 592, 594–597 TE: 22A–22B, 22–24, 42A–42B, 42–44, 46A–46B, 46–47, 48A–48B, 48–49, 142A–142B, 142–145, 306A–306B, 306–307, 308A–308B, 308–311, 592, 594A–594B, 594–597

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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.	PE: 20–21, 306, 308, 310, 311, 326 TE: 20A–20B, 20–21, 306, 308A–308B, 308, 311, 326
8.D.3b Propose and solve problems using proportions, formulas and linear functions.	PE: 330–333, 426–427, 428–429, 454–456, 528–530, 536–537, 538–539, 544–545, 568–571 TE: 330A–330B, 330–333, 426A–426B, 426–427, 428A–428B, 428–429, 454A–454B, 454–456, 528A–528B, 528–530, 536A–536B, 536–537, 538A–538B, 538–539, 544A–544B, 544–545, 568A–568B, 568–571
8.D.3c Apply properties of powers, perfect squares and square roots.	PE: 156–159, 540–543 TE: 156A–156B, 156–159, 540A–540B, 540–543
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.3a Draw or construct two- and three- dimensional geometric figures including prisms, pyramids, cylinders and cones.	PE: 364, 367, 374, 554–556, 564–565 TE: 364A–364B, 367, 368B, 370A, 374A, 374, 394A, 552A–552B, 552–553, 554A–554B, 554–556, 557, 564A–564B, 564–565, 566B, 571
9.A.3b Draw transformation images of figures, with and without the use of technology.	PE: 390–393, 402–404 TE: 390A–390B, 390–393, 402B, 402–404
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 (e.g., geodesic domes, A-frame houses, basketball courts, inclined planes, art forms, blueprints).	PE: 386–387, 388–389, 408, 436–439, 574–575 TE: 386A–386B, 386–387, 388A–388B, 388–389, 408, 436A–436B, 436–439, 574–575

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B. Identify, describe, classify and compare relationships 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.	PE: 364–366, 368–369, 370–372, 374–376, 379, 382–384, 386–387, 388–389, 526–527, 528–530, 536–537, 538–539, 544–545, 552–553, 554–556, 558–559, 560–562, 564–565, 566–567 TE: 350C, 364A–364B, 364–366, 368A–368B, 368–369, 370A–370B, 370–372, 374A–374B, 374–376, 382A–382B, 382–384, 386A–386B, 386–387, 388A–388B, 388–389, 394A, 522C, 526A–526B, 526–527, 528A–528B, 528–530, 536A–536B, 536–537, 538A–538B, 538–539, 544A–544B, 544–545, 552A–552B, 552–553, 554A–554B, 554–556, 558A–558B, 558–559, 560A–560B, 560–562, 564A–564B, 564–565, 566A–566B, 566–567
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.	PE: 365, 369, 375, 383, 387, 389, 403, 526, 529, 536 TE: 365, 369, 375, 383, 387, 389, 403, 526, 529, 536
9.C.3b Develop and solve problems using geometric relationships and models, with and without the use of technology.	PE: 364–366, 368–369, 370–372, 374–376, 382–384, 385, 386–387, 388–389, 526–527, 528–530, 536–537, 538–539, 544–545, 552–553, 554–556, 558–559, 560–562, 564–565, 566–567 TE: 350C, 364A–364B, 364–366, 368A–368B, 368–369, 370A–370B, 370–372, 374A–374B, 374–376, 382A–382B, 382–384, 385, 386A–386B, 386–387, 388A–388B, 388–389, 394A, 522C, 526A–526B, 526–527, 528A–528B, 528–530, 536A–536B, 536–537, 538A–538B, 538–539, 544A–544B, 544–545, 552A–552B, 552–553, 554A–554B, 554–556, 558A–558B, 558–559, 560A–560B, 560–562, 564A–564B, 564–565, 566A–566B, 566–567
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.	PE: 432–434, 436–438, 441, 454–455, 543 TE: 432A–432B, 432–434, 436B, 436–438, 454A–454B, 454–455, 543

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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.3a Construct, read and interpret tables, graphs (including circle graphs) and charts to organize and represent data.	PE: 5, 12, 16, 37, 40, 44, 49, 56, 68, 88, 96, 99, 102, 124, 140, 153, 182, 192, 208, 234–236, 237, 238–239, 240–242, 243, 250–252, 253, 254–256, 257, 272, 276, 280, 313, 318, 334–336, 337, 372, 396, 425, 430, 434, 442, 447, 455, 456, 460, 473, 476, 480, 498, 502, 532–534, 535, 545, 550, 586, 589, 593, 599, 616 TE: 16, 44, 88, 102, 124, 140, 182, 224, 234A–234B, 234–236, 237, 238A–238B, 238–239, 240A–240B, 240–242, 243, 250A–250B, 250–252, 253, 254A–254B, 254–256, 257, 280, 334A–334B, 334–336, 337, 396, 447, 474A–474B, 474–475, 476, 502, 532A–532B, 532–534, 535, 589, 616
10.A.3b Compare the mean, median, mode and range, with and without the use of technology.	PE: 216–218, 220–221, 263 TE: 216A–216B, 216–218, 220A–220B, 220–221, 246A, 263
10.A.3c Test the reasonableness of an argument based on data and communicate their findings.	PE: 226–228, 250–252, 506 TE: 226A–226B, 226–228, 250A–250B, 250–252, 506
B. Formulate questions, design data collection methods, gather and analyze data and communicate findings.	
10.B.3 Formulate questions (e.g., relationships between car age and mileage, average incomes and years of schooling), devise and conduct experiments or simulations, gather data, draw conclusions and communicate results to an audience using traditional methods and contemporary technologies.	PE: 210–213, 214–215, 220–221, 229, 231, 265 TE: 210A–210B, 210–213, 214A–214B, 214–215, 220A–220B, 220–221, 229, 231, 265
C. Determine, describe and apply the probabilities of events.	
10.C.3a Determine the probability and odds of events using fundamental counting principles.	PE: 486, 487–488, 489, 491, 490–493, 494–495, 496–499, 500–502, 506–508, 511 TE: 486A–486B, 486–488, 489, 491, 490A–490B, 490–493, 494A–494B, 494–495, 496A–496B, 496–499, 500A–500B, 500–502, 506A, 511

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10.C.3b Analyze problem situations (e.g., board games, grading scales) and make predictions about results.	PE: 262, 263, 485, 486–488, 489, 490–492, 493, 506–508 TE: 262, 263, 484D, 485, 486A–486B, 486–488, 489, 490A–490B, 490–492, 493, 494B, 506A–506B, 506–508