

Correlation of

***BRIDGES to Algebra and Geometry:  
Mathematics in Context,***  
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to

Illinois Learning Standards of Mathematics:  
Middle/Junior High School

LEARNING STANDARD	PAGE REFERENCES
<b>STATE GOAL 6: Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions.</b>	
<b>A. Demonstrate knowledge and use of numbers and their representations in a broad range of theoretical and practical settings.</b>	
6.A.3 Represent fractions, decimals, percentages, exponents and scientific notation in equivalent forms.	4–10, 21–23, 33, 66–67, 236–240, 241–246, 247–251, 252–253, 348–353, 524–529, 536–541, 574–575
<b>B. Investigate, represent and solve problems using number facts, operations (addition, subtraction, multiplication, division) and their properties, algorithms and relationships.</b>	
6.B.3a Solve practical computation problems involving whole numbers, integers and rational numbers.	21–23, 32, 34–35, 54–55, 56–58, 66–67, 103, 132–133, 140–145, 146–147, 148–153, 154–159, 160–161, 162–167, 168–173, 174–175, 182–183, 254–260, 261–265, 266–270, 271–272, 287–288
6.B.3b Apply primes, factors, divisors, multiples, common factors and common multiples in solving problems.	248, 285–286
6.B.3c Identify and apply properties of real numbers including pi, squares, and square roots.	24–28, 36–41, 242, 247, 551–556, 574–575
<b>C. Compute and estimate using mental mathematics, paper-and-pencil methods, calculators and computers.</b>	
6.C.3a Select computational procedures and solve problems with whole numbers, fractions, decimals, percents and proportions.	21–23, 32, 34–35, 49–55, 56–58, 66–67, 103, 254–260, 261–265, 266–270, 271–272, 287–288, 354–359, 360–361, 367–371, 372–373, 386–387, 396–397
6.C.3b Show evidence that computational results using whole numbers, fractions, decimals, percents and proportions are correct and/or that estimates are reasonable.	11–15, 29–32, 33–35, 42–47, 56–58, 61–63, 66–67, 103, 165, 175, 180–181, 200, 306, 362–366, 377, 553, 556–558, 609, 635–637

LEARNING STANDARD	PAGE REFERENCES
<b>STATE GOAL 6 (continued): Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions.</b>	
<b>D. Solve problems using comparison of quantities, ratios, proportions and percents.</b>	
<b>6.D.3</b> Apply ratios and proportions to solve practical problems.	294–298, 299–303, 304–308, 309–310, 344–345

LEARNING STANDARD	PAGE REFERENCES
<b>STATE GOAL 7: Estimate, make and use measurements of objects, quantities and relationships and determine acceptable levels of accuracy.</b>	
<b>A. Measure and compare quantities using appropriate units, instruments and methods.</b>	
7.A.3a Measure length, capacity, weight/mass and angles using sophisticated instruments (e.g., compass, protractor, trundle wheel).	56–60, 176–180, 224–226, 466–467, 471
7.A.3b Apply the concepts and attributes of length, capacity, weight/mass, perimeter, area, volume, time, temperature and angle measures in practical situations.	63–65, 299–303, 543–548, 549–550, 574–575
<b>B. Estimate measurements and determine acceptable levels of accuracy.</b>	
7.B.3 Select and apply instruments including rulers and protractors and units of measure to the degree of accuracy required.	59–60, 63–65, 120–121, 178–180, 449–450, 466–467, 471, 568–570
<b>C. Select and use appropriate technology, instruments and formulas to solve problems, interpret results and communicate findings.</b>	
7.C.3a Construct a simple scale drawing for a given situation.	338–339, 599–602, 603–604, 639
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.	217–221, 605–613, 615–621, 622–627, 628–629, 638–639, 650–656, 657–661, 662–663, 664–670, 671–677, 678–679, 680–684, 685–686, 687–692, 693–694

LEARNING STANDARD	PAGE REFERENCES
<b>STATE GOAL 8: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.</b>	
<b>A. Describe numerical relationships using variables and patterns.</b>	
<b>8.A.3a</b> Apply the basic properties of commutative, associative, distributive, transitive, inverse, identity, zero, equality and order of operations to solve problems.	24–28, 36–41, 157, 186–191, 192–196, 273–277, 278–282
<b>8.A.3b</b> Solve problems using linear expressions, equations and inequalities.	186–191, 192–196, 198–202, 209–210, 211–216, 226–231, 232–233, 273–277, 278–282, 283–284, 288–289, 290–291
<b>B. Interpret and describe numerical relationships using tables, graphs and symbols.</b>	
<b>8.B.3</b> Use graphing technology and algebraic methods to analyze and predict linear relationships and make generalizations from linear patterns.	120–121, 125, 400–404, 405–410, 411–412, 413–418, 419–425, 426–427, 451–453, 456–457
<b>C. Solve problems using systems of numbers and their properties.</b>	
<b>8.C.3</b> Apply the properties of numbers and operations including inverses in algebraic settings derived from economics, business and the sciences.	186–191, 192–195, 196–197, 201–202, 209–210, 215–216, 381–385
<b>D. Use algebraic concepts and procedures to represent and solve problems.</b>	
<b>8.D.3a</b> Solve problems using numeric, graphic or symbolic representations of variables, expressions, equations and inequalities.	16–20, 186–191, 192–196, 197, 198–202, 203–208, 209–210, 211–216, 222–223, 226–231, 232–233, 271–273, 278–282, 283–284, 288–289, 290–291
<b>8.D.3b</b> Propose and solve problems using proportions, formulas and linear functions.	217–221, 222–223, 381–385, 439–446, 447–448
<b>8.D.3c</b> Apply properties of powers, perfect squares and square roots.	524–529, 530–534, 535, 551–556, 566–568, 574–575

LEARNING STANDARD	PAGE REFERENCES
<b>STATE GOAL 9: Use geometric methods to analyze, categorize and draw conclusions about points, lines, planes and space.</b>	
<b>A. Demonstrate and apply geometric concepts involving points, lines, planes and space.</b>	
<b>9.A.3a</b> Draw or construct two- and three- dimensional geometric figures including prisms, pyramids, cylinders and cones.	460–465, 466–472, 515–517, 520–521, 642–648, 650–651, 652–653, 671–672, 693
<b>9.A.3b</b> Draw transformation images of figures, with and without the use of technology.	495–500, 501–505, 506–510, 511–512, 518–519, 520–521, 593–598
<b>9.A.3c</b> 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).	488–493, 503–505, 511–512, 513–514, 520–521, 584–589, 615–621, 638–639, 680–684, 688–692
<b>B. Identify, describe, classify and compare relationships using points, lines, planes and solids.</b>	
<b>9.B.3</b> Identify, describe, classify and compare two- and three-dimensional geometric figures and models according to their properties.	460–465, 466–472, 473–477, 478–479, 480–486, 488–493, 513–514, 520–521
<b>C. Construct convincing arguments and proofs to solve problems.</b>	
<b>9.C.3a</b> Construct, develop and communicate logical arguments (informal proofs) about geometric figures and patterns.	578–582, 681
<b>9.C.3b</b> Develop and solve problems using geometric relationships and models, with and without the use of technology.	474–477, 478–479, 483, 486, 492, 513–514, 520–521, 588
<b>D. Use trigonometric ratios and circular functions to solve problems.</b>	
<b>9.D.3</b> Compute distances, lengths and measures of angles using proportions, the Pythagorean theorem and its converse.	557–562, 564–565

LEARNING STANDARD	PAGE REFERENCES
<b>STATE GOAL 10: Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability.</b>	
<b>A. Organize, describe and make predictions from existing data.</b>	
<b>10.A.3a</b> Construct, read and interpret tables, graphs (including circle graphs) and charts to organize and represent data.	76–79, 80–83, 84, 85–90, 91–96, 97–99, 100–107, 117–121, 122–125, 357–359
<b>10.A.3b</b> Compare the mean, median, mode and range, with and without the use of technology.	34, 70–74, 84, 122–125
<b>10.A.3c</b> Test the reasonableness of an argument based on data and communicate their findings.	97–99, 108–113, 114–116
<b>B. Formulate questions, design data collection methods, gather and analyze data and communicate findings.</b>	
<b>10.B.3</b> 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.	327–332, 333–335, 336–337, 339–343, 345
<b>C. Determine, describe and apply the probabilities of events.</b>	
<b>10.C.3a</b> Determine the probability and odds of events using fundamental counting principles.	311–315, 316–319, 320–321, 322–326, 339–341, 345
<b>10.C.3b</b> Analyze problem situations (e.g., board games, grading scales) and make predictions about results.	320–321, 333–335, 336–337, 339–343, 345