

Correlation of

ALGEBRA 1:
Mathematics in Context,
CORD Communications, © 2004
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to

Illinois Learning Standards of Mathematics:
Early High School

| LEARNING STANDARD | PAGE REFERENCES |
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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.4 Identify and apply the associative, commutative, distributive and identity properties of real numbers, including special numbers such as pi and square roots. | 81, 86, 103–105, 146–153, 161–168, 304–311, 694–698 |
| B. Investigate, represent and solve problems using number facts, operations (addition, subtraction, multiplication, division) and their properties, algorithms and relationships. | |
| 6.B.4 Select and use appropriate arithmetic operations in practical situations including calculating wages after taxes, developing a budget and balancing a checkbook. | 18–25, 26–30, 32–36, 59–75, 76–77 |
| C. Compute and estimate using mental mathematics, paper-and-pencil methods, calculators and computers. | |
| 6.C.4 Determine whether exact values or approximations are appropriate (e.g., bid a job, determine gas mileage for a trip). | 114–117, 118–121 |
| D. Solve problems using comparison of quantities, ratios, proportions and percents. | |
| 6.D.4 Solve problems involving recipes or mixtures, financial calculations and geometric similarity using ratios, proportions and percents. | 49–53, 156–160, 680–686 |

| LEARNING STANDARD | PAGE REFERENCES |
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| 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.4a Apply units and scales to describe and compare numerical data and physical objects. | 44–48, 49–53, 54–55, 262–263, 264 |
| 7.A.4b Apply formulas in a wide variety of theoretical and practical real-world measurement applications involving perimeter, area, volume, angle, time, temperature, mass, speed, distance, density and monetary values. | 85–92, 93–96, 97–102, 103–106, 107–113, 122–125, 128–141, 142–143 |
| B. Estimate measurements and determine acceptable levels of accuracy. | |
| 7.B.4 Estimate and measure the magnitude and directions of physical quantities (e.g., velocity, force, slope) using rulers, protractors and other scientific instruments including timers, calculators and computers. | 218–224, 255–259 |
| C. Select and use appropriate technology, instruments and formulas to solve problems, interpret results and communicate findings. | |
| 7.C.4a Make indirect measurements, including heights and distances, using proportions (e.g., finding the height of a tower by its shadow). | 125–127, 684, 686, 714–716 |
| 7.C.4b Interpret scale drawings and models using maps and blueprints. | 155 |
| 7.C.4c Convert within and between measurement systems and monetary systems using technology where appropriate. | 44–48, 49–53, 77, 262–263 |

| LEARNING STANDARD | PAGE REFERENCES |
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| 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.4a Use algebraic methods to convert repeating decimals to fractions. | Not covered |
| 8.A.4b Represent mathematical patterns and describe their properties using variables and mathematical symbols. | 9–12, 76 |
| B. Interpret and describe numerical relationships using tables, graphs and symbols. | |
| 8.B.4a Represent algebraic concepts with physical materials, words, diagrams, tables, graphs, equations and inequalities and use appropriate technology. | 80–84, 206–211, 213–217, 218–224, 225–233, 234–240, 255–259, 265–275, 276–277, 496–500, 523–531 |
| 8.B.4b Use the basic functions of absolute value, square root, linear, quadratic and step to describe numerical relationships. | 13–17, 76, 180–184, 304–311, 312–319, 323–337, 338–339, 620–624, 626–632 |
| C. Solve problems using systems of numbers and their properties. | |
| 8.C.4a Analyze and report the effects of changing coefficients, exponents and other parameters on functions and their graphs. | 216–217, 218–224, 225–233, 234–240, 249–254, 255–258, 265–275, 276–277 |
| 8.C.4b Apply algebraic properties and procedures with matrices, vectors, functions and sequences using data found in business, industry and consumer situations. | 32–36, 56–58, 63, 76–77, 241–248, 280–286, 287–290 |
| D. Use algebraic concepts and procedures to represent and solve problems. | |
| 8.D.4 Formulate and solve linear and quadratic equations and linear inequalities algebraically and investigate nonlinear inequalities using graphs, tables, calculators and computers. | 146–153, 161–168, 169–174, 175–179, 180–184, 185–189, 190–201, 202–203, 296–303, 304–311, 312–319, 323–337, 338–339, 501–505, 506–511, 512–518, 519–522, 523–531, 544–553, 554–555 |

| LEARNING STANDARD | PAGE REFERENCES |
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| 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.4a Construct a model of a three-dimensional figure from a two-dimensional pattern. | 260–262 |
| 9.A.4b Make perspective drawings, tessellations and scale drawings, with and without the use of technology. | Covered in <i>Geometry: Mathematics in Context</i> |
| B. Identify, describe, classify and compare relationships using points, lines, planes and solids. | |
| 9.B.4 Recognize and apply relationships within and among geometric figures. | 97–102, 680–686, 688–693, 699–707, 722–727, 728–739, 740–741 |
| C. Construct convincing arguments and proofs to solve problems. | |
| 9.C.4a Construct and test logical arguments for geometric situations using technology where appropriate. | Covered in <i>Geometry: Mathematics in Context</i> |
| 9.C.4b Construct and communicate convincing arguments for geometric situations. | Covered in <i>Geometry: Mathematics in Context</i> |
| 9.C.4c Develop and communicate mathematical proofs (e.g., two-column, paragraph, indirect) and counter examples for geometric statements. | Covered in <i>Geometry: Mathematics in Context</i> |
| D. Use trigonometric ratios and circular functions to solve problems. | |
| 9.D.4 Analyze and solve problems involving triangles (e.g., distances which cannot be measured directly) using trigonometric ratios. | 125–127, 143, 709–716, 741 |

| LEARNING STANDARD | PAGE REFERENCES |
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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.4a Represent and organize data by creating lists, charts, tables, frequency distributions, graphs, scatterplots and box-plots. | 397–403, 404–410, 411–414, 415–419, 427–429, 430–437, 438–439 |
| 10.A.4b Analyze data using mean, median, mode, range, variance and standard deviation of a data set, with and without the use of technology. | 390–396, 420–425, 430–437, 438–439 |
| 10.A.4c Predict from data using interpolation, extrapolation and trend lines, with and without the use of technology. | 407–410, 437 |
| B. Formulate questions, design data collection methods, gather and analyze data and communicate findings. | |
| 10.B.4 Design and execute surveys or experiments, gather data to answer relevant questions, and communicate results and conclusions to an audience using traditional methods and contemporary technology. | 349–355, 374–377 |
| C. Determine, describe and apply the probabilities of events. | |
| 10.C.4a Solve problems of chance using the principles of probability including conditional settings. | 342–348, 356–361, 362–367, 368–373, 378–385, 386–387 |
| 10.C.4b Design and conduct simulations (e.g., waiting times at restaurant, probabilities of births, likelihood of game prizes), with and without the use of technology. | 377 |
| 10.C.4c Propose and interpret discrete probability distributions, with and without the use of technology. | 420–425 |