



Correlation of

CORD Algebra 1: Mathematics in Context,
CORD Communications, © 2004
(1578373263)

to

Pennsylvania's Academic Standards
for Mathematics

Correlation to Pennsylvania’s Academic Standards for Mathematics, Grade 11

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STANDARDS	PAGE REFERENCES
<i>Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...</i>	
2.1. Numbers, Number Systems and Number Relationships	
2.1.11.A. Use operations such as opposite, reciprocal, absolute value, raising to a power, finding roots and logarithms.	pp. 13-16, 19-23, 37-41, 104, 109-110, 180-183, 296-301, 304-308, 312-316, 519-521, 571, 575-579, 586-591, 620-623, 688, 691-692, 717-720
2.2 Computation and Estimation	
2.2.11.A. Develop and use computation concepts, operations and procedures on real numbers in problem solving situations.	pp. 4-28, 40-42, 45-61, 80-121, 146-201
2.2.11.B. Use estimation to solve problems for which exact answer is not needed.	pp. 123-125, 185-186, 262-263
2.2.11.C. Construct and apply mathematical models, including lines and curves of best fit, to estimate values of related quantities.	pp. 213-215, 241-245, 260-275, 280-283, 314, 320-339, 404-409, 662-663, 667
2.2.11.D. Describe and explain the amount of error that may exist in a computation using estimates.	pp. 114-116, 118-121, 123-125, 185-186
2.2.11.E. Recognize that the degree of precision needed in calculating a number depends on how the results will be used and the instruments used to generate the measure.	pp. 55-56, 114-121, 123-125, 185-186, 263-264, 538-540, 657-660
2.2.11.F. Demonstrate skills for using computer spreadsheets and scientific and graphing calculators.	19, 22, 28, 40, 56-58, 95, 104, 124, 126-127, 255-259, 297-301, 305, 401, 407-409, 417-418, 427-429, 444-446, 523-529, 597, 609-610, 628, 630-631, 662-663, 711
2.3 Measurement and Estimation	
2.3.11.A. Select and use appropriate units and tools to measure to the degree of accuracy required in particular measurement situations.	pp. 44-46, 54-56, 122-127, 185-188, 260-264, 322, 426-429, 479-480, 537-540, 657-663, 722-727
2.3.11.B. Measure and compare angles in degrees and radians.	pp. 125-127, 709-741
2.3.11.C. Determine relationships between linear, square and cubic measures and describe how changes in one of the measures of the figure affect the others.	pp. 107-110, 586, 635-636
2.3.11.D. Demonstrate ability to produce measures with specified levels of precision.	pp. 55-56, 122-125, 426-427, 537-538, 657-660

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2.4 Mathematical Reasoning and Connections	
2.4.11.A. Use direct proofs, indirect proofs, or proof by contradiction to validate conjectures.	This objective is covered in <i>CORD Geometry</i> .
2.4.11.B. Construct valid arguments from stated facts.	pp. 15-16, 25, 30, 42, 90, 95, 105, 153, 159, 166, 173, 178, 183, 210, 223, 246, 253, 258, 285, 289, 302, 309, 312, 317, 394, 447, 460, 473, 605
2.4.11.C. Determine the validity of an argument.	pp. 83, 85, 151, 561
2.4.11.D. Use truth tables to reveal the logic of mathematical statements.	This objective is covered in <i>CORD Geometry</i> .
2.4.11.E. Demonstrate mathematical solutions to problems in the physical sciences.	pp. 25, 37-43, 54-56, 60-62, 67-70, 72-75, 89, 128-129, 132, 136-137, 139-141, 151, 178, 190, 195, 197-200, 224, 263-266, 271, 274-275, 315-316, 319, 326, 329-330, 333-336, 475, 490-491, 550-553, 637, 657-660, 667-668, 671, 686, 690, 722-725, 729-730, 732-734, 737
2.5 Mathematical Problem Solving and Communication	
2.5.11.A. Select and use appropriate mathematical concepts and techniques from different areas of mathematics and apply them to solving non-routine and multi-step problems.	pp. 80, 149, 175, 203, 240, 281-282, 342-387, 390-410, 442-455, 513, 523-535, 559, 561, 564, 570, 586-594, 603, 607-610, 680-694, 709-716
2.5.11.B. Use symbols, mathematical terminology, standard notation, mathematical rules, graphing and other types of mathematical representations to communicate observations, predictions, concepts, procedures, generalizations, ideas and results.	pp. 7-8, 13, 15-18, 21, 24-25, 31, 37-39, 43, 48, 50, 54-77, 80-81, 84-85, 88-96, 102, 106, 111-114, 117-118, 121-143, 146-149, 150-164, 166-168, 170, 174, 176-203, 212, 214-217, 221-224, 229-234, 236-243, 248, 259-277, 280, 282, 284-286, 293-297, 301-303, 307-339, 390-410, 342-355, 357-358, 360-367, 373-387, 426-439, 442-443, 445-448, 450-451, 454-464, 466, 468-469, 471-475, 476-493, 498, 500-501, 503-505, 508-511, 517-518, 521-522, 527-528, 531-555, 558, 574, 577, 580-582, 585, 592, 598-599, 607-616, 620-626, 632, 635-637, 644, 646-648, 651-652, 655-677, 684, 686-687, 689-693, 697-698, 707-708, 716, 722-741
2.5.11.C. Present mathematical procedures and results clearly, systematically, succinctly and correctly.	pp. 7-8, 13, 15-18, 21, 24-25, 31, 37-39, 43, 48, 50, 54-77, 80-81, 84-85, 88-96, 102, 106, 111-114, 117-118, 121-143, 146-149, 150-164, 166-168, 170, 174, 176-203, 212, 214-217, 221-224, 229-234, 236-243, 248, 259-277, 280, 282, 284-286, 293-297, 301-303, 307-339, 390-410, 342-355, 357-358, 360-367, 373-387, 426-439, 442-443, 445-448, 450-451, 454-464, 466, 468-469, 471-475, 476-493, 498, 500-501, 503-505, 508-511, 517-518, 521-522, 527-528, 531-555, 558, 574, 577, 580-582, 585, 592, 598-599, 607-616, 620-626, 632, 635-637, 644, 646-648, 651-652, 655-677, 684, 686-687, 689-693, 697-

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	698, 707-708, 716, 722-741
2.5.11.D. Conclude a solution process with a summary of results and evaluate the degree to which the results obtained represent an acceptable initial problem and why the reasoning is valid. response to the	pp. 54-58, 122-127, 185-189, 260-264, 320-322, 374-377, 426-429, 476-480, 537-543, 607-610, 657-663, 722-727
2.6 Statistics and Data Analysis	
2.6.11.A. Design and conduct an experiment using random sampling, describe the data as an example of a distribution using statistical measures of center and spread, and organize and represent the results with graphs. (Use standard deviation, variance and t-tests.)	pp. 538-540
2.6.11.B. Use appropriate technology to organize and analyze data taken from the local community.	pp. 401, 406-409, 426-429
2.6.11.C. Determine regression equation of best fit (e.g., linear, quadratic, and exponential).	pp. 404-410
2.6.11.D. Make predictions using interpolation, extrapolation, regression, and estimation, using technology.	pp. 404-410
2.6.11.E. Determine the validity of the sampling method described in a given study.	This objective would normally be covered in an Algebra 2 or Statistics text.
2.6.11.F. Determine the degree of dependence of two quantities specified by a two-way table.	pp. 404-410
2.6.11.G. Describe questions of experimental design, use of control groups, treatment groups, cluster sampling and reliability.	This objective would normally be covered in an Algebra 2 or Statistics text.
2.6.11.H. Use sampling techniques to draw inferences about large populations.	pp. 538-540
2.6.11.I. Describe the normal curve and use its properties to answer questions about sets of data that are assumed to be normally distributed.	pp. 420-425
2.7 Probability and Predictions	
2.7.11.A. Compare odds and probability.	This objective would normally be covered in an Algebra 2 or Statistics text.
2.7.11.B. Apply probability and statistics to perform an experiment involving a sample and generalize its results to the entire population.	pp. 538-540
2.7.11.C. Draw a conclusion regarding the validity of a probability or statistical	pp. 393, 403

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argument and justify conclusion.	
2.7.11.D. Use experimental and theoretical probability distributions to make judgments about the likelihood of various outcomes in uncertain situations.	pp. 342-367, 375-376, 378-379, 382-385
2.7.11.E. Solve problems involving independent simple and compound events.	pp. 368-373, 377, 381
2.8 Algebra and Functions	
2.8.11.A. Analyze a given set of data for the existence of a pattern and represent the pattern algebraically and graphically.	pp. 9-12, 37-39, 205, 214-215, 280-282, 312, 321-322, 651
2.8.11.B. Give examples of patterns that occur in data from other disciplines.	pp. 11, 214, 280-282, 312, 322, 651
2.8.11.C. Use patterns, sequences and series to solve routine and non-routine problems.	pp. 37-39, 205, 214-215, 280-282, 312, 322, 609-610, 651
2.8.11.D. Formulate expressions, equations, inequalities, systems of equations, systems of inequalities, and matrices to model routine and non-routine problem situations.	pp. 80-113, 122-143, 145-203, 2916-339, 442-493, 495-555
2.8.11.E. Use equations to represent curves such as lines, circles, ellipses, parabolas and hyperbolas.	pp. 213-277, 293, 297, 662-663
2.8.11.F. Identify whether systems of equations and inequalities are consistent or inconsistent.	pp. 449-454, 460
2.8.11.G. Analyze and explain systems of equations, systems of inequalities and matrices.	pp. 32-36, 56-58, 441-493, 532-536, 540-543, 546, 548, 550
2.8.11.H. Select and use an appropriate strategy to solve systems of equations and inequalities using graphing calculators, symbol manipulators, spreadsheets, and other software.	pp. 441-493, 532-536, 540-543, 546, 548, 550
2.8.11.I. Use matrices to organize and manipulate data, including matrix addition, subtraction, multiplication, and scalar multiplication.	pp. 32-36, 56-58, 63, 72, 76-77
2.8.11.J. Demonstrate the connection between algebraic equations and inequalities and the geometry of relations in the coordinate plane.	pp. 225-275, 291-339, 496-555, 662-663
2.8.11.K. Select, justify, and apply an appropriate technique to graph a linear function in two variables, including slope-intercept, x- and y- intercepts, graphing by transformations, and the use of a graphing calculator.	pp. 225-277
2.8.11.L. Write the equation of a line when given the graph of the line, two points on	pp. 225-277

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the line, or the slope of the line and a point on the line.	
2.8.11.M. Given a set of data points, write an equation for a line of best fit.	pp. 214-215, 242, 246, 262-275, 280-283, 404-410
2.8.11.N. Solve linear, quadratic, and exponential equations both symbolically and graphically.	pp. 146-203, 225-233, 312-319, 633-677
2.8.11.O. Determine the domain and range of a relation, given a graph or set of ordered pairs.	pp. 280-281, 285-286, 296, 304
2.8.11.P. Analyze a relation to determine whether a direct or inverse variation exists and represent it algebraically and graphically.	pp. 225, 242, 265, 268, 273, 280, 291-295
2.8.11.Q. Represent functional relationships in tables, charts, and graphs.	pp. 242-248, 280-339
2.8.11.R. Create and interpret functional models.	pp. 242-248, 280-339
2.8.11.S. Analyze properties and relationships of functions (linear, polynomial, rational, trigonometric, exponential, and logarithmic).	pp. 242-248, 280-339
2.8.11.T. Analyze and categorize functions by their characteristics.	pp. 242-248, 280-339
2.9. Geometry	
2.9.11.A. Construct geometric figures using dynamic geometry tools (Geometer’s Sketchpad, Cabri Geometre, etc.)	This objective is covered in <i>CORD Geometry</i> .
2.9.11.B. Prove two triangles or two polygons are congruent or similar using algebraic and coordinate as well as deductive proofs.	This objective is covered in <i>CORD Geometry</i> .
2.9.11.C. Identify and prove the properties of quadrilaterals involving opposite sides and angles, consecutive sides and angles, and diagonals using deductive proofs.	This objective is covered in <i>CORD Geometry</i> .
2.9.11.D. Identify corresponding parts in congruent triangles to solve problems.	This objective is covered in <i>CORD Geometry</i> .
2.9.11.E. Solve problems involving inscribed and circumscribed polygons.	This objective is covered in <i>CORD Geometry</i> .
2.9.11.F. Use the properties of angles, arcs, chords, tangents, and secants to solve problems involving circles.	This objective is covered in <i>CORD Geometry</i> .
2.9.11.G. Solve problems using analytic geometry.	pp. 691-693, 700, 710
2.9.11.H. Construct a geometric figure and its image using various transformations.	pp. 298-302, 621-623
2.9.11.I. Model situations geometrically to formulate and solve problems.	pp. 25, 80, 88, 133, 215, 308, 458-459, 527-528, 532, 615, 635, 646, 662-

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	665, 668, 704
2.9.11.J. Analyze figures in terms of the kinds of symmetries they have.	p. 296, 629
2.10. Trigonometry	
2.10.11.A. Use graphing calculators to display periodic and circular functions; describe properties of the graphs.	This objective is normally covered in an Algebra 2 text.
2.10.11.B. Identify, create, and solve practical problems involving right triangles using the trigonometric functions and the Pythagorean Theorem.	pp. 307, 311, 673, 688-694, 699, 703, 709-716, 725-739
2.11. Concepts of Calculus	
2.11.11.A. Determine maximum and minimum values of a function over a specified interval.	pp. 325, 639-644, 659, 666
2.11.11.B. Interpret maximum and minimum values in problem situations.	pp. 325, 639-644, 659, 666
2.11.11.C. Graph and interpret rates of growth/decay.	pp. 312-319, 322-324, 327-329, 332
2.11.11.D. Determine sums of the finite sequences of numbers and infinite geometric series.	This objective is normally covered in an Algebra 2 text.
2.11.11.E. Estimate areas under curves using sequences of areas.	This objective is normally covered in an Algebra 2 text.