

Correlation of

***CORD BRIDGES TO ALGEBRA AND GEOMETRY:
Mathematics in Context,***
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to

California's Mathematics Standards, Gr. 8

STANDARDS	PAGE REFERENCES
NUMBER SENSE	
1. Students understand the real number system as a coherent set of elements, operations and properties, and use real numbers in concrete and abstract situations.	
1.1 understand operations such as opposite, reciprocal, raising to a power and taking a root, and use them in applied contexts	130-133, 136, 188, 190, 195, 266-270, 524-529, 533-535, 537-541, 549, 551-556, 567-569, 574-575
1.2 use properties of numbers to construct simple valid arguments of, or formulate counter-examples to, claimed assertions	24-27, 33, 36-40, 48, 96, 130-131, 157, 187, 189, 192, 194, 199, 205-206, 212, 216, 274, 279, 295, 315, 404, 531
ALGEBRA AND FUNCTIONS	
1. Students use contexts and situations to generate and give meaning to variables and the relationships between them.	
1.1 identify the input and the output in a relationship between two variables and determine whether the relationship is a function	439-446, 487, 505, 542
1.2 use algebraic expressions, equations and inequalities to model linear and nonlinear situations, including direct and inverse variation, exponential growth and quadratic behavior	54-55, 63-67, 79, 90, 114, 182, 188, 196, 377
1.3 represent equations and inequalities as graphs, use graphs to solve problems, and illustrate, approximate and verify solutions	407-409, 417, 419, 421, 423-427, 435-438, 448, 456, 542, 621
1.4 demonstrate understanding of slope as a rate of change (which is constant in linear situations) and determine and interpret the meaning of the slope and key points of a linear situation when it is presented through an equation, a table, or a graph	408, 413-427, 435, 451-452, 456-457, 498, 542, 563
1.5 demonstrate understanding of why equations written in a variety of ways (including $y = mx + b$) are linear and use information about a rate of change or slope and one or two reference points to write a linear equation which models a situation	408, 413-427, 435, 451-452, 456, 563
1.6 relate a situation to characteristics of its equation(s), table(s), or graph(s), and determine whether it is linear, inverse variation, exponential, or quadratic	409, 435, 439, 445, 542
2. Students use a variety of techniques to solve linear equations and inequalities and	

STANDARDS	PAGE REFERENCES
interpret the meaning of the solutions.	
2.1 solve linear equations and inequalities, interpret the reasonableness and meaning of the solutions, represent solutions and methods for finding solutions as graphs and tables, and understand the relationship between these representations and algebraic techniques	188-197, 199, 201-210, 212-224, 226-228, 232-233, 240, 250-253, 259-260, 265, 270, 273-276, 279-284, 288-289, 298, 309, 315, 353, 366, 369-372, 405-412, 421, 423-427, 430, 433, 435-438, 448, 456, 478, 649, 670, 677
2.2 understand the relationship between the solution of a linear equation in one variable, the x-intercept of the related linear equation in two variables, and the related situations from which each arise	405-407, 419, 563
3. Students understand the meaning of simultaneous linear equations and their solutions, and use them to solve problems.	
3.1 represent simultaneous linear situations with tables, graphs and equations, understanding the connections among the representations	428-429, 448
3.2 solve a system of two linear equations, relate the solution to the graph of the system and interpret it in terms of the context from which the equations arose	428-432, 448, 456
4. Students understand how to simplify algebraic expressions.	
4.1 add and subtract polynomials, multiply a monomial by a polynomial and divide two monomials including those expressed in one or several variables	631-634
4.2 describe the logic of algebraic procedures	18-19, 25, 526
5. Students relate quadratic expressions, equations and graphs to characteristics of linear expressions, equations and graphs, and understand contexts in which quadratic models arise.	
5.1 identify quadratic phenomena by characteristics of a situation (e.g., area problems, square numbers), a related graph, a table of data, or an equation by which the situation is modeled	445
MEASUREMENT AND GEOMETRY	
1. Students model situations geometrically, algebraically, and use coordinate geometry to formulate and solve problems.	
1.1 compare the results of geometric constructions, measurements and computations on coordinate axes as they are applied to systems to parallel lines, congruent and similar figures	400-401, 403-404, 411, 430, 473, 489, 520
1.2 use the properties of parallel lines cut by a transversal, congruent and similar triangles, and algebraic techniques to answer questions about geometric situations	430, 473-475, 490-492, 513, 521, 584-592

CORRELATION TO CALIFORNIA’S MATHEMATICS STANDARDS, GR. 8

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STANDARDS	PAGE REFERENCES
1.3 use the Pythagorean Theorem to determine distance and compare lengths of segments on a coordinate plane	557-562, 575, 589, 602, 685
1.4 recognize and differentiate between similarity and congruence and apply properties to answer questions about congruent and similar two-dimensional and three-dimensional geometric objects	490, 615-621, 638-639, 680-684, 693
1.5 draw diagrams to interpret and solve practical situations geometrically (e.g., the amount of wood needed to frame 39 x 2.59 portrait, the number of plants that would fit in a garden plot if the plants were to be placed 69 apart)	41, 217, 221, 265, 270, 272, 305-306, 336, 338-339, 388-390, 409, 494, 499-500, 503, 511-512, 515-519, 521, 562, 564-565, 590, 601-603, 611-613, 638-639, 649
STATISTICS, DATA ANALYSIS AND PROBABILITY	
1. Students analyze the trends in sets of bi-variate data.	
1.1 summarize trends in bi-variate data by informally fitting lines to data that appears to have a linear trend	120-121
1.2 evaluate the “goodness of fit” of a line for a set of data, assess its usefulness as a model for the data and use the line to make predictions	120-121, 412
2. Students critique the conclusions and uses of statistics in both school materials and public documents.	
2.1 use information displayed in graphs (line, bar, circle and picture graphs and histograms) to make comparisons, predictions and inferences, and critique the conclusions drawn by others	84, 91-106, 108-109, 112-116, 118, 120-127, 614
2.2 explain and critique the process of a survey or experiment, how that might have contributed to or influenced the results (e.g., reliability of sampling procedures, bias, missing or incorrect information) and describe misuses of statistical or numerical data	72, 89, 98, 108-110, 112-115, 122
PROBLEM SOLVING AND MATHEMATICAL REASONING	
1. Students make decisions about how to approach problems.	
1.1 analyze problems by identifying relationships, discriminating relevant from irrelevant information, identifying missing information, sequencing and prioritizing information, and observing patterns	49-55, 57, 103, 112-113, 165, 200, 224-231, 258, 285-289, 304, 332, 338-343, 377, 389-395, 422, 449-455, 476, 513-519, 546, 549, 566-573, 609, 630-637, 652, 687-692
1.2 formulate reasonable mathematical conjectures based upon a general description of a situation	56-57, 101, 263-264, 474-475, 531, 665
1.3 determine when and how to break a problem into simpler parts	25, 45, 59-60, 240, 353

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STANDARDS	PAGE REFERENCES
2. Students use strategies, skills and concepts in finding solutions.	
2.1 predict outcomes and make reasonable estimates	12-15, 29-37, 41-42, 44, 46, 56-58, 62-66, 75, 91, 101, 105, 107, 139, 145, 202, 240, 257, 277, 317, 363, 547-548
2.2 apply strategies and results from simpler problems to more complex situations	25, 38
2.3 solve for unknown or undecided quantities using algebra, graphing, sound reasoning and other strategies	17, 20, 24-25, 33, 37, 40, 45, 54-58, 62-67, 70-75, 79, 90, 114, 130-131, 139, 144-145, 152-153, 166-167, 172, 188-197, 199, 201-210, 212-224, 226-228, 232-233, 240, 245-246, 252, 259-260, 263-265, 270, 275-276, 279, 281-282, 290, 298, 301-303, 307-309, 313-317, 325-326, 331, 335, 344, 358-360, 366, 369, 384-387, 410, 418, 447, 472, 487, 500, 549, 563, 583, 590, 621, 666-669
2.4 make and test conjectures using both inductive and deductive reasoning	56-57, 101, 144
2.5 show mathematical reasoning in solutions in a variety of ways, including words, numbers, symbols, pictures, charts, graphs, tables, diagrams and models	10, 22, 26-27, 43, 49-52, 54-65, 102, 117-121, 160-161, 165-167, 173-183, 188, 199, 206, 211, 224-231, 239, 261, 285-287, 338-343, 386-395, 449-455, 513-519, 566-573, 630-637, 687-692
2.6 express the solution clearly and logically using appropriate mathematical notation and terms and clear language, and support solutions with evidence, in both oral and written work	25, 46, 54, 71-72, 91, 97-99, 103, 109, 112, 132, 137, 172, 190, 195, 201, 215, 239, 243, 245, 250, 269, 276, 290-291, 307, 313, 364, 580, 637, 675
2.7 indicate the relative advantages of exact and approximate solutions to problems and give answers to a specified degree of accuracy	30, 32, 35, 41, 46, 56-60, 63
3. Students provide closure to a solution process and move beyond a particular problem by making general conclusions and summary statements, and posing new, related questions and comments.	
3.1 evaluate the reasonableness of the solution in the context of the original situation	7, 12, 30, 32, 109, 215, 219, 227, 263, 269, 271, 291, 296-297, 320, 406
3.2 note patterns in the solution and use these patterns to extend the solution to similar problems	31, 43-44, 46, 90, 102, 132, 212, 237, 247, 336, 365, 549, 578-582
3.3 make connections between the solution and other mathematical solutions, concepts, other school subjects and the real world	31, 102, 111-114, 171, 244, 271, 280, 330, 351, 364, 402, 484-485, 539, 580, 646, 687-690
3.4 develop generalizations of the results obtained and the strategies used, and extend them to new problem situations	31, 43-44, 46, 60, 90, 94, 97-98, 131, 137, 144, 205-206, 213, 251, 259