Textbook Alignment to the Utah Core – Algebra 2

This alignment has been completed using an "Independent Alignment Vendor" from the USOE approved list
(www.schools.utah.gov/curr/imc/indvendor.html***.) Yes N/A No N/A***

Name of Company and Individual Conducting Alignment:
Jennifer Bailey

A "Credential Sheet" has been completed on the above company/evaluator and is (Please check one of the following):

X On record with the USOE.

☐ The "Credential Sheet" is attached to this alignment.

Instructional Materials Evaluation Criteria (name and grade of the core document used to align): Algebra 2 Core Curriculum

Title: CME Project, Algebra 2 © 2009 ISBN#: 0-13-350019-5 (SE); 0-13-350023-3 (TE)

Publisher: Pearson

Overall percentage of coverage in the *Student Edition (SE) and Teacher Edition (TE)* of the Utah State Core Curriculum: _____%

Overall percentage of coverage in *ancillary materials* of the Utah Core Curriculum: _____%

STANDARD I: Students will use the language and operations of algebra to evaluate, analyze and solve problems.

Percentage of coverage in the *student and teacher edition* for Standard I:_____ %	**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard I: _____%**

OBJECTIVES & INDICATORS	**Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)**	**Coverage in *Ancillary Material* (titles, pg #'s, etc.)**	***Not covered in TE, SE or ancillaries***

Objective 1.1: Evaluate, analyze, and solve mathematical situations using algebraic properties and symbols.			
a. Solve and graph first-degree absolute value equations of a single variable.	**SE/TE: 103, 113, 117-118, 121, 501, 503, 504, 518, 531, 555, 570, 580, 582, 583, 584**		
b. Solve radical equations of a single variable, including those with extraneous roots.	**SE/TE: 106-107**	**High School Mathematics Skills Review and Practice: 101, 238**	
c. Solve absolute value and compound inequalities of a single variable.		**High School Mathematics Skills Review and Practice: 45-46**	
d. Add, subtract, multiply, and divide rational expressions and solve rational equations.	**SE/TE: 183-184, 185-186, 187, 191, 192, 195**		
e. Simplify algebraic expressions involving negative and rational exponents.	**SE/TE: 406-407, 408-411, 413-414, 415-417, 418-422, 423, 435, 439, 459, 495, 497, 583, 777**		
Objective 1.2: Solve systems of equations and inequalities.			
a. Solve systems of linear, absolute value, and quadratic equations algebraically and graphically.	**SE/TE: 283-285, 286-290, 291-300, 301, 302, 337-341, 352, 353, 391-392, 393, 691**		
b. Graph the solutions of systems of linear, absolute value, and quadratic inequalities on the coordinate plane.		**High School Mathematics Skills Review and Practice: 71, 206-207**	
c. Solve application problems involving systems of equations and inequalities.	**SE/TE: 298-299, 341**	**High School Mathematics Skills Review and Practice: 69, 207**	
Objective 1.3: Represent and compute fluently with complex numbers.			

a. Simplify numerical expressions, including those with rational exponents.	**SE/TE: 399-400, 401, 403-405, 406-407, 408-411, 413, 416-417, 418-422, 423, 427, 435, 443, 459, 495, 497, 583, 777**		
b. Simplify expressions involving complex numbers and express them in standard form, a + bi.	**SE/TE: 206-211, 212-217, 218-222, 223, 227-228, 229-233, 234-241, 242-249, 250, 251, 253-254, 255-262, 263-268, 269-274, 275, 277-278, 279, 706, 716, 731-732**		
Objective 1.4: Model and solve quadratic equations and inequalities.			
a. Model real-world situations using quadratic equations.	**SE/TE: 131-133**	**High School Mathematics Skills Review and Practice: 226**	
b. Approximate the real solutions of quadratic equations graphically.			
c. Solve quadratic equations of a single variable over the set of complex numbers by factoring, completing the square, and using the quadratic formula.	**SE/TE: 163, 168, 169, 199, 202-204, 210, 223, 232, 249, 251, 277, 279**		
d. Solve quadratic inequalities of a single variable.			
e. Write a quadratic equation when given the solutions of the equation.	**SE/TE: 132, 158, 164, 181, 187, 190, 200, 216, 241, 279**		
STANDARD II: Students will understand and represent functions and analyze function behavior.			
Percentage of coverage in the *student and teacher edition* for Standard II:_____ %		**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard II: _____%**	
OBJECTIVES & INDICATORS	**Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)**	**Coverage in *Ancillary Material* (titles, pg #'s, etc.)**	***Not covered in TE, SE or ancillaries***

Objective 2.1: Represent mathematical situations using relations.			
a. Model real-world relationships with functions.	**SE/TE: 40, 41-45, 46-48, 50-52, 53-55, 59, 60-62, 64-65, 66, 87, 434, 438, 441, 443, 449-450, 456-457, 458, 477, 497, 584**		
b. Describe a pattern using function notation.	**SE/TE: 5-7, 8-15, 16-21, 29-38, 67, 69-70, 84, 86, 403-404, 409**		
c. Determine when a relation is a function.	**SE/TE: 104, 117-118**	**High School Mathematics Skills Review and Practice: 54**	
d. Determine the domain and range of relations.	**SE/TE: 8, 97, 104-105, 106-108, 109, 119, 122, 145, 430-432, 443, 463, 466, 468, 692-693, 698-699**		
Objective 2.2: Evaluate and analyze functions.			
a. Find the value of a function at a given point.	**SE/TE: 97, 98-99, 106, 111, 112-113, 123-124, 125, 128-129, 134, 145, 147, 152-154, 190, 192, 194, 410, 417, 421, 426-427, 443, 458, 495, 585**		
b. Compose functions when possible.	**SE/TE: 99, 108, 109-111, 112-114, 119, 121, 123-124, 125, 145, 190, 192, 194, 395, 537-540, 541-545, 547, 551, 553, 583-584, 777**		
c. Add, subtract, multiply, and divide functions.	**SE/TE: 106-108, 125, 128, 145, 147, 150-151, 497**		
d. Determine whether or not a function has an inverse, and find the inverse when it exists.	**SE/TE: 115-124, 125, 145, 190, 192, 194-195, 395, 453, 454, 458, 459, 463, 466, 777**		
e. Identify the domain and range of a function resulting from the combination or composition of functions.	**SE/TE: 107, 118-119**		

Objective 2.3: Define and graph exponential functions and use them to model problems in mathematical and real-world contexts.			
a. Define exponential functions as functions of the form $y = ab_x, b > 0, b \neq 1$.	**SE/TE: 428, 431-432, 434-435, 438-439, 441, 447**		
b. Model problems of growth and decay using exponential functions.	**SE/TE: 434, 438, 441, 443, 449-450, 456-457, 458, 477, 497, 584**		
c. Graph exponential functions.	**SE/TE: 428-435, 436, 442, 444, 449, 451, 453, 454, 459, 463, 466, 468, 492, 503, 505, 521, 524-525, 569, 582, 584**		
Objective 2.4: Define and graph logarithmic functions and use them to solve problems in mathematics and real-world contexts.			
a. Relate logarithmic and exponential functions.	**SE/TE: 454, 458-459, 462, 463-465, 466-468, 469-470, 521, 584, 777**		
b. Simplify logarithmic expressions.	**SE/TE: 467, 469-476, 480, 488, 491, 493, 496, 583**		
c. Convert logarithms between bases.	**SE/TE: 465-466, 467-468, 471, 493, 496**		
d. Solve exponential and logarithmic equations.	**SE/TE: 399-400, 403-404, 409, 414, 417, 426, 433, 448, 450, 461, 470-472, 474, 476, 479-481, 491, 493, 496, 497, 584**		
e. Graph logarithmic functions.	**SE/TE: 463, 466, 468, 478-483, 496, 505, 518, 521, 569, 584**		
f. Solve problems involving growth and decay.	**SE/TE: 434, 438, 441, 443, 449-450, 456-457, 458, 477, 497, 584**		
STANDARD III: Students will use algebraic, spatial, and logical reasoning to solve geometry and measurement problems.			

Percentage of coverage in the *student and teacher edition* for Standard III:_____ %		**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard III: _____%**	
OBJECTIVES & INDICATORS	**Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)**	**Coverage in *Ancillary Material* (titles, pg #'s, etc.)**	***Not covered in TE, SE or ancillaries***
Objective 3.1: Examine the behavior of functions using coordinate geometry.			
a. Identify the domain and range of the absolute value, quadratic, radical, sine, and cosine functions.	**SE/TE: 97-98, 106-107, 145, 692-693, 698-699, 717**		
b. Graph the absolute value, quadratic, radical, sine, and cosine functions.	**SE/TE: 501-503, 504, 510-511, 513-521, 522-523, 527-529, 531, 555, 562-563, 565-568, 580, 582, 717-721, 734, 735, 773, 775, 777**		
c. Graph functions using transformations of parent functions.	**SE/TE: 500, 501-503, 504-512, 513-521, 522-530, 531, 555, 562-570, 577, 582, 583, 585, 777**		
d. Write an equation of a parabola in the form $y = a(x - h)^2 + k$ when given a graph or an equation.			
Objective 3.2: Determine radian and degree measures for angles.			
a. Convert angle measurements between radians and degrees.		**High School Mathematics Skills Review and Practice: 276**	
b. Find angle measures in degrees and radians using inverse trigonometric functions, including exact values for special triangles.	**SE/TE: 684, 685, 696, 701, 703, 709-712, 713, 718, 720, 738, 749, 751-753, 759-760, 762, 770, 773**		
Objective 3.3: Determine trigonometric measurements using appropriate techniques, tools, and formulas.			

a. Define the sine, cosine, and tangent functions using the unit circle.	**SE/TE: 692-697, 698-703, 704-708, 709, 713, 718, 720, 722, 724-725, 728-731, 773, 775**		
b. Determine the exact values of the sine, cosine, and tangent functions for the special angles of the unit circle using reference angles.	**SE/TE: 686, 689-690, 693-694, 696-697, 700, 701-703, 705, 707-708, 715-716, 723, 726, 727-733, 734, 735, 773-774, 775, 777**		
c. Find the length of an arc using radian measure.			
d. Find the area of a sector in a circle using radian measure.			

STANDARD IV: Students will understand concepts from probability and statistics and apply statistical methods to solve problems.

Percentage of coverage in the *student and teacher edition* for Standard IV:_____ %	**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard IV: _____%**

OBJECTIVES & INDICATORS	**Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)**	**Coverage in *Ancillary Material* (titles, pg #'s, etc.)**	***Not covered in TE, SE or ancillaries***
Objective 4.1: Apply basic concepts of probability.			
a. Distinguish between permutations and combinations and identify situations in which each is appropriate.	**SE/TE: 77, 80, 85, 663-667, 668, 670, 672, 678, 679, 777**	**High School Mathematics Skills Review and Practice: 111-112, 232** **Data Analysis and Probability Workbook: 56-61, 107**	
b. Calculate probabilities using permutations and combinations to count events.		**Data Analysis and Probability Workbook: 69**	

c. Compute conditional and unconditional probabilities in various ways, including by definitions, the general multiplication rule, and probability trees.	**SE/TE: 378, 379-386, 388, 392, 395**	**High School Mathematics Skills Review and Practice: 254, 268** **Data Analysis and Probability Workbook: 62-64, 67, 68-69, 70-73, 75-76, 77-78, 79-80**	
d. Define simple discrete random variables.			
Objective 4.2: Use percentiles and measures of variability to analyze data.			
a. Compute different measures of spread, including the range, standard deviation, and interquartile range.	**SE/TE: 55, 57-59, 65, 67, 85, 87, 395**	**High School Mathematics Skills Review and Practice: 270** **Data Analysis and Probability Workbook: 13, 32**	
b. Compare the effectiveness of different measures of spread, including the range, standard deviation, and interquartile range in specific situations.			
c. Use percentiles to summarize the distribution of a numerical variable.			
d. Use histograms to obtain percentiles.			