

Textbook Alignment to the Utah Core

Instructional Materials Evaluation Criteria (name and grade of the core document used to align)

Algebra 2

Title Algebra 2 © 2008 ISBN# 978-0-07-0873830-2

Publisher: Glencoe McGraw-Hill

Name of Person conducting alignment: C Bautista

Overall percentage of coverage of the Utah State Core Curriculum: 100%

Standard I: Students will acquire number sense and perform operations with complex numbers and matrices.

Percentage of coverage for Standard I: 100%

Objectives	Indicators	If covered, appropriate page #'s	Comments on coverage
Objective 1: Represent and compute fluently with complex numbers and matrices.	a. Simplify numerical expressions including those with rational exponents.	Student Edition: 312-317, 415-421, 427 #49-#51 <i>Foldables</i> 430 <i>Study Guide and Review</i> 433 7-6 Teacher Wraparound Edition: A 421; AE 313-315, 416-418; FC 416; I 416	
	b. Simplify expressions involving complex numbers and express them in standard form, $a + bi$.	Student Edition: 261-265, 272 Example 6, 279 Example 4, 363 <i>Algebra Lab</i> 262 <i>Study Guide and Review</i> 304 5-4 Teacher Wraparound Edition: AE 261-263; F 263	

	c. Add, subtract, and multiply (including scalar multiplication) matrices using paper and pencil and computer programs or calculators.	Student Edition: 169-175, 177-184, 185-188, 192 #52-#53 <i>Graphing Calculator Lab</i> 172 <i>Study Guide and Review</i> 225 4-2, 226 4-3 Teacher Wraparound Edition: AE 170-172, 180; DI 172; I 175	
	d. Find and verify the multiplicative inverse of a matrix using paper and pencil for a 2 x 2 and computer programs or calculators for larger matrices.	Student Edition: 208-214, 218-219 Example 3, 222 #40-#42 <i>Study Guide and Review</i> 228 4-7 Teacher Wraparound Edition: AE 209-211; PA 211	
Objective 2: Identify relationships among matrices and operations involving matrices.	a. Demonstrate that matrix multiplication is associative and distributive, but not commutative.	Student Edition: 171-175, 177-184, 187 Example 3 <i>Study Guide and Review</i> 226 4-3 Teacher Wraparound Edition: AE 171, 178, 180; DI 210; MP 180; P 179	
	b. Determine additive and multiplicative identities and inverses of a matrix when they exist.	Student Edition: 169-170, 173-175, 185-186 <i>Study Guide and Review</i> 225 4-2 Teacher Wraparound Edition: F 171; I 175	
Standard II: Students will represent and analyze mathematical situations and properties using patterns, relations, functions, and algebraic symbols.			
Percentage of coverage for Standard II: 100%			
Objectives	Indicators	If covered, appropriate page #'s	Comments on coverage
Objective 1: Represent mathematical situations using patterns, relations, and functions.	a. Model real life relationships with functions.	Student Edition: 60 Example 2, 95-96 Example 1, 99 #11-#13, 239-240 Example 4, 241 #11, 248 Example 5, 290 #11-#12, 398 Example 2, 475 Example 2 <i>Get Ready</i> 236 <i>Graphing Calculator Lab</i> 252, 293 Teacher Wraparound Edition: AE 60, 96, 239 #4, 500 #3	

	b. Determine when a relation is a function.	<p>Student Edition: 58-64, 70 #61-#62, 95-98 <i>Foldables</i> 106 <i>Study Guide and Review</i> 107 2-1</p> <p>Teacher Wraparound Edition: AE 60; FC 59, 60; GR 59; I 59</p>	
	c. Use function notation.	<p>Student Edition: 61, 63 #35-#42, #54, 66-67 Example 1-Example 2, 70 #54, 77 #60-#63, 95-100 <i>Graphing Calculator Lab</i> 78</p> <p>Teacher Wraparound Edition: AE 67, 97</p>	
	d. Compose functions when possible.	<p>Student Edition: 385-390, 401 #39-#41, 511 <i>Mid-Chapter Quiz</i> 407 #1-#6 <i>Study Tip</i> 393</p> <p>Teacher Wraparound Edition: A 396; AE 386-387; EA 390; FC 385; I 393</p>	
	e. Add, subtract, multiply, and divide functions.	<p>Student Edition: 384-385, 388, 396 #47-#49 <i>Mid-Chapter Quiz</i> 407 #1-#6 <i>Study Guide and Review</i> 431 7-1</p> <p>Teacher Wraparound Edition: AE 385; EA 390; FM 385</p>	
	f. Determine whether or not a function has an inverse, and find the inverse when it exists.	<p>Student Edition: 391-395, 401 #36-#38, 406 #61 <i>Algebra Lab</i> 394 <i>Mid-Chapter Quiz</i> 407 #9-#12</p> <p>Teacher Wraparound Edition: A 396; AE 392-393; DI 392</p>	

<p>Objective 2: Model and solve quadratic equations and inequalities.</p>	<p>a. Model real life situations using quadratic equations.</p>	<p>Student Edition: 248 Example 5, 250 #30-#31, #44-#45, 257 #32, #47-#49, 272 #5-#7, 274, 281 #31-#33, 290 #11-#12 <i>Graphing Calculator Lab</i> 252 Teacher Wraparound Edition: AE 248</p>	
	<p>b. Solve quadratic equations of a single variable over the set of complex numbers graphically, by factoring, by completing the square, and using the quadratic formula.</p>	<p>The examples listed below include those with negative discriminants. Student Edition: 277, 278 Example 4, 281 #1-#8, #25-#27, 282 #46, #50 Teacher Wraparound Edition: AE 277 #1, 278; FM 279</p>	
	<p>c. Solve quadratic inequalities of a single variable.</p>	<p>Student Edition: 294-300, 605-606 Example 3 <i>Study Guide and Review</i> 306 5-8 Teacher Wraparound Edition: AE 295-297, 605; FM 296</p>	
	<p>d. Write a quadratic equation when given the solutions of the equation.</p>	<p>Student Edition: 246, 253 Example 1, 256 #1-#3, #14-#26, 257 #43-#46, 266 #8-#81 <i>Mid-Chapter Quiz</i> 267 #16 <i>Study Tip</i> 253 Teacher Wraparound Edition: AE 254 #1</p>	
<p>Objective 3: Evaluate, analyze, and solve mathematical situations using algebraic properties and symbols.</p>	<p>a. Solve and graph first-degree absolute value equations of a single variable.</p>	<p>Student Edition: 28-31, 39 #62-#64, 48 #59-#62 <i>Study Guide and Review</i> 51 1-4 Teacher Wraparound Edition: AE 28-29; PA 251</p>	
	<p>b. Solve radical equations of a single variable including those with extraneous roots.</p>	<p>Student Edition: 422-427 <i>Graphing Calculator Lab</i> 428-429 <i>Study Guide and Review</i> 434 7-7 Teacher Wraparound Edition: AE 423-424; FC 423; PA 427</p>	

	c. Solve absolute value and compound inequalities of a single variable.	Student Edition: 43-48, 103 Example 3, 295-300 <i>Study Guide and Review</i> 52 1-5, 306 5-8 Teacher Wraparound Edition: AE 44, 103 #3, 296-297; PA 44	
	d. Add, subtract, multiply, and divide rational expressions and solve rational equations.	Student Edition: 444-448, 451-456, 471 #56-#58, 463 #57-#59 <i>Study Guide and Review</i> 489 Teacher Wraparound Edition: AE 444-446, 451-453; I 444; PA 456	
	e. Simplify algebraic expressions involving negative and rational exponents.	Student Edition: 415-421, 427 #49-#51 <i>Foldables</i> 430 <i>Study Guide and Review</i> 433 7-6 Teacher Wraparound Edition: A 421; AE 416-418; FC 416; I 416	
Standard III: Students will model and solve problems using spatial and logical reasoning, and applications of geometric principles.			
Percentage of coverage for Standard III: 100%			
Objectives	Indicators	If covered, appropriate page #'s	Comments on coverage
Objective 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.	Student Edition: 97 Example 2, 99 #20-#25, 100 #35-#36, 239 Example 3c, 241 #7-#10, #22-#32, 242 #45-#50, 406 #58-#60, 760, 807 <i>Graphing Calculator Lab</i> 97 <i>Study Tip</i> 97 Teacher Wraparound Edition: AE 97; FC 97	
	b. Graph absolute value, quadratic, radical, sine and cosine functions.	Student Edition: 97 Example 2, 99 #5-#6, #20-#25, 100 #35-#36, #49, 105 #45-#46, 240 Example 4b, 241 #12-#21, 246-251 <i>Graphing Calculator Lab</i> 97 Teacher Wraparound Edition: AE 97, 236-238, 247-248	

	c. Graph the solutions of absolute value and quadratic inequalities.	<p>Student Edition: 103 Example 3, 104 #5-#6, #20-#21, #30-#34, 105 #40, 294-300, 424 Example 3 <i>Study Guide and Review</i> 306 5-8 <i>Study Tip</i> 297</p> <p>Teacher Wraparound Edition: AE 103, 295-297; DI 297; FC 296</p>	
	d. Graph functions using transformations of parent functions.	<p>Student Edition: 97 Example 2 <i>Graphing Calculator Lab</i> 97, 284-285, 428-429, 801-805, 823-827, 830-836 <i>Graphing Calculator Lab</i> 829</p> <p>Teacher Wraparound Edition: AE 97, 385, 802, 825; PA 805</p>	
	e. Write an equation of a parabola in the form $y = a(x - h)^2 + k$ when given a graph or equation.	<p>Student Edition: 567-573, 598-600 <i>Study Guide and Review</i> 611 10-2</p> <p>Teacher Wraparound Edition: AE 568; F 570; PA 573</p>	
Objective 2: Solve systems of equations and inequalities.	a. Solve systems of linear, absolute value, and quadratic equations algebraically and graphically.	<p>Student Edition: 116-121, 123-129, 145-151, 216-221 <i>Graphing Calculator Lab</i> 223</p> <p>Teacher Wraparound Edition: AE 117-119, 124-126, 146-149, 217-218; FC 118</p>	
	b. Graph the solutions of systems of linear, absolute value, and quadratic inequalities.	<p>Student Edition: 43, 45, 102-105, 294-300 <i>Study Guide and Review</i> 52 1-5, 110 2-7</p> <p>Teacher Wraparound Edition: AE 43-44, 103, 295-297</p>	
	c. Solve application problems involving systems of equations and inequalities.	<p>Student Edition: 130-135, 138-143 <i>Graphing Calculator Lab</i> 136</p> <p>Teacher Wraparound Edition: AE 131-132, 139; PA 122</p>	

	d. Solve systems of linear equations with up to three variables using matrices.	Matrices can be used with the following examples. Student Edition: 116-121, 123-129, 145-151, 216-221 <i>Graphing Calculator Lab</i> 223 Teacher Wraparound Edition: AE 117-119, 124-126, 146-149, 217-218; FC 118	
Standard IV: Students will understand and apply measurement tools, formulas, and techniques.			
Percentage of coverage for Standard IV: 100%			
Objectives	Indicators	If covered, appropriate page #'s	Comments on coverage
Objective 1: Determine radian and degree measures for angles.	a. Convert angle measurements between radians and degrees.	Student Edition: 761-766, 768-773, 776-783, 792 #42-#47 <i>Algebra Lab</i> 775 <i>Study Guide and Review</i> 813 13-2 Teacher Wraparound Edition: AE 761-764, 769-771, 777-778; FC 771	
	b. Find angle measures in degrees and radians, including exact values for special triangles, using inverse trigonometric functions.	Student Edition: 761-766, 768-773, 776-783, 792 #42-#47 <i>Algebra Lab</i> 775 <i>Study Guide and Review</i> 813 13-2 Teacher Wraparound Edition: AE 761-764, 769-771, 777-778; FC 771	
Objective 2: Determine trigonometric measurements using appropriate techniques, tools, and formulas.	a. Define the sine, cosine, and tangent functions using the unit circle.	Student Edition: 769, 799-800, 803 #1-#2, #7-#12 Teacher Wraparound Edition: A 805; AE 800	
	b. Determine the exact values of the sine, cosine, and tangent functions for the special angles of the unit circle using reference angles.	Student Edition: 800, 801 Example 2, 803 #3-#4, #13-#18, 804 #25-#30, 811 #48-#50 <i>Graphing Calculator Lab</i> 800 <i>Study Guide and Review</i> 816 13-6 Teacher Wraparound Edition: AE 801	

	c. Find the length of an arc using radian measure.	Student Edition: 768	
	d. Find the area of a sector in a circle using radian measure.	Student Edition: 772 #34-#35, 773 #56	
Standard V: Students will apply concepts and methods from probability and statistics to solve real problems.			
Percentage of coverage for Standard V: 100%			
Objectives	Indicators	If covered, appropriate page #'s	Comments on coverage
Objective 1: Use percentiles and measures of variability to analyze data.	a. Compute and compare different measures of spread, including the range, standard deviation, and interquartile range.	Student Edition: 718-722, 724-728 <i>Algebra Lab</i> 734 <i>Graphing Calculator Lab</i> 719 <i>Prerequisite Skills</i> 884 Example 4, 889-890 <i>Study Guide and Review</i> 748 Teacher Wraparound Edition: AE 725; FM 718, 725; PA 702	
	b. Recognize situations in which the interquartile range might be more appropriate than the standard deviation or range.	Student Edition: <i>Prerequisite Skills</i> 884 Example 4, 889-890	
	c. Use percentiles to summarize the distribution of a numerical variable.	Student Edition: 704-705, 721 #25-#26, 726-727 <i>Algebra Lab</i> 734 #7 Teacher Wraparound Edition: AE 705; FM 718	
	d. Use histograms to obtain percentiles.	The following examples can be used to obtain percentiles. Student Edition: 699 Example 3, 700 #6-#7, 701 #22-#26, 725 Example 1 Teacher Wraparound Edition: AE 699	

<p>Objective 2: Apply basic concepts of probability.</p>	<p>a. Distinguish between permutations and combinations, and situations in which each is appropriate.</p>	<p>Student Edition: 690-695, 711, 745-746 <i>Reading Math</i> 696 <i>Study Guide and Review</i> 746 12-2 Teacher Wraparound Edition: FC 692; T 690</p>	
	<p>b. Calculate probabilities using permutations and combinations.</p>	<p>Student Edition: 690-695, 697-699 <i>Study Guide and Review</i> 746 Example 3 Teacher Wraparound Edition: AE 698-699</p>	
	<p>c. Define conditional probability, and know and use the general multiplication rule for probabilities.</p>	<p>Student Edition: 705-709, 735-737 <i>Study Guide and Review</i> 746 12-3, 12-4 Teacher Wraparound Edition: AE 705-706; FM 705; PA 707</p>	
	<p>d. Compute conditional and unconditional probabilities in various ways, including by definitions, probability trees, and Bayes' Theorem.</p>	<p>Student Edition: 524 #22-#24, 697-702, 705-709, 712, 730-731 Teacher Wraparound Edition: AE 698-699, 704-706, 712, 731</p>	
	<p>e. Define simple discrete random variables.</p>	<p>Student Edition: 699</p>	