2010 Mathematics Textbooks and Instructional Materials Committee Member
Correlation to the 2009 Mathematics Standards of Learning and Curriculum Framework – Algebra II

Text/Instructional Material Title: Holt McDougal Algebra 2 (Burger)

Publisher: Houghton Mifflin Harcourt

Section I. Correlation with the Mathematics 2009 SOL and Curriculum Framework	Rating		
	Adequate	Limited	No Evidence
AII.1	X		
AII.2	X		
AII.3	X		
AII.4	X		
AII.5	X		
AII.6	X		
AII.7	X		
AII.8	X		
AII.9	X		
AII.10	X		
AII.11		X	
AII.12	X		

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Section II. Additional Criteria: Instructional Planning and Support	**Rating**		
	Adequate	**Limited**	**No Evidence**
1. Materials emphasize the use of effective instructional practices and learning theory.	**X**		
a. Students are guided through critical thinking and problem-solving approaches.	**X**		
b. Concepts are introduced through concrete experiences that use manipulatives and other technologies.	**X**		
c. Multiple opportunities are provided for students to develop and apply concepts through the use of calculators, computers, and other technologies.	**X**		
d. Students use the language of mathematics including specialized vocabulary and symbols.	**X**		
e. Students use a variety of representations (graphical, numerical, symbolic, verbal, and physical) to connect mathematical concepts.	**X**		
2. The mathematics content is significant and accurate.	**X**		
a. Materials are presented in an organized, logical manner which represents the current thinking on how students learn mathematics.	**X**		
b. Materials are organized appropriately within and among units of study.	**X**		
c. Format design includes titles, subheadings, and appropriate cross-referencing for ease of use.	**X**		
d. Writing style, length of sentences, vocabulary, graphics, and illustrations are appropriate.	**X**		
e. Level of abstraction is appropriate, and practical/real-life examples, including careers, are provided.	**X**		
f. Sufficient applications are provided to promote depth of application.	**X**		
3. Materials present content in an accurate, unbiased manner.	**X**		

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Mathematics Standard of Learning	**Rating Scale** Please indicate the rating for each by placing an X in the appropriate cell.		
	Adequate	**Limited**	**No Evidence**
AII.1 The student, given rational, radical, or polynomial expressions, will			
a) add, subtract, multiply, divide, and simplify rational algebraic expressions;	**X**		
b) add, subtract, multiply, divide, and simplify radical expressions containing rational numbers and variables, and expressions containing rational exponents;	**X**		
c) write radical expressions as expressions containing rational exponents and vice versa; and	**X**		
d) factor polynomials completely.	**X**		
Comments: Provide comments to support "limited" or "no evidence" ratings.			

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	Adequate	**Limited**	**No Evidence**
AII.2 The student will investigate and apply the properties of arithmetic and geometric sequences and series to solve real-world problems, including writing the first n terms, finding the nth term, and evaluating summation formulas. Notation will include Σ and a_n.	**X**		
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	Adequate	**Limited**	**No Evidence**
AII.3 The student will perform operations on complex numbers, express the results in simplest form using patterns of the powers of *i*, and identify field properties that are valid for the complex numbers.	**X**		
Comments: Provide comments to support "limited" or "no evidence" ratings.			

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	Adequate	**Limited**	**No Evidence**
AII.4 The student will solve, algebraically and graphically,			
a) absolute value equations and inequalities;	**X**		
b) quadratic equations over the set of complex numbers;	**X**		
c) equations containing rational algebraic expressions; and	**X**		
d) equations containing radical expressions.	**X**		
Graphing calculators will be used for solving and for confirming the algebraic solutions.	**X**		
Comments: Provide comments to support "limited" or "no evidence" ratings.			

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	Adequate	**Limited**	**No Evidence**
AII.5 The student will solve nonlinear systems of equations, including linear-quadratic and quadratic-quadratic, algebraically and graphically. Graphing calculators will be used as a tool to visualize graphs and predict the number of solutions.	**X**		
Comments: Provide comments to support "limited" or "no evidence" ratings.			

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		Adequate	**Limited**	**No Evidence**
AII.6	The student will recognize the general shape of function (absolute value, square root, cube root, rational, polynomial, exponential, and logarithmic) families and will convert between graphic and symbolic forms of functions. A transformational approach to graphing will be employed. Graphing calculators will be used as a tool to investigate the shapes and behaviors of these functions.	**X**		
Comments: Provide comments to support "limited" or "no evidence" ratings.				

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	Adequate	**Limited**	**No Evidence**
AII.7 The student will investigate and analyze functions algebraically and graphically. Key concepts include			
a) domain and range, including limited and discontinuous domains and ranges;	**X**		
b) zeros;	**X**		
c) *x*- and *y*-intercepts;	**X**		
d) intervals in which a function is increasing or decreasing;	**X**		
e) asymptotes;	**X**		
f) end behavior;	**X**		
g) inverse of a function; and	**X**		
h) composition of multiple functions.	**X**		
Graphing calculators will be used as a tool to assist in investigation of functions.	**X**		
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	Adequate	**Limited**	**No Evidence**
AII.8 The student will investigate and describe the relationships among solutions of an equation, zeros of a function, *x*-intercepts of a graph, and factors of a polynomial expression.	**X**		
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	Adequate	**Limited**	**No Evidence**
AII.9 The student will collect and analyze data, determine the equation of the curve of best fit, make predictions, and solve real-world problems, using mathematical models. Mathematical models will include polynomial, exponential, and logarithmic functions.	**X**		
Comments: Provide comments to support "limited" or "no evidence" ratings.			

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	Adequate	**Limited**	**No Evidence**
AII.10 The student will identify, create, and solve real-world problems involving inverse variation, joint variation, and a combination of direct and inverse variations.	**X**		
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	Adequate	**Limited**	**No Evidence**
AII.11 The student will identify properties of a normal distribution and apply those properties to determine probabilities associated with areas under the standard normal curve.		**X**	
Comments: Provide comments to support "limited" or "no evidence" ratings.			

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	Adequate	**Limited**	**No Evidence**
AII.12 The student will compute and distinguish between permutations and combinations and use technology for applications.	**X**		
Comments: Provide comments to support "limited" or "no evidence" ratings.			