# 2017-2018 WCSD Algebra 2 Program Evaluation Rubric

**Evaluator Number**

3

**Program Number**

4

**Name of Text**

Algebra 2

**Publisher**

Houghton Mifflin Harcourt

**Rate This Text Overall**

☐ **High** ☑ **Mid** ☐ **Low**

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**Focus: Evaluate the table of contents and any pacing guides. Do not stop there; also evaluate units, chapters, and lessons. (Both student and teacher materials)**

**Functions - Graphing Transformations**

Translating, stretching, shrinking and reflecting the graphs
Absolute Value, Quadratics, Exponential, Rational, Radical, Piecewise and Step Functions

**Quadratic Functions with Complex Solutions**

Graph Vertex, Standard and Intercept Forms
Solve in Vertex, Standard (quadratic formula, complete square) and Intercept Form
Write equations in 3 unknowns to write a quadratic given three points

**Polynomials and Polynomial Functions**

Add, subtract, multiply and divide – include property of closure
Graph polynomial functions
Solve polynomial equations
Model using polynomial functions

**Rational Functions**

Add, subtract, multiply and divide – include property of closure
Graph rational functions
Solve rational equations (extraneous solutions)
Model using rational functions

**Radical Functions (Rational Exponents)**

Add, subtract, multiply and divide – include property of closure
Graph radical functions
Solve equations with radicals (extraneous solutions)
Model using radical functions

**Inverse Functions**

Explore inverse functions
Use composition to show two functions are inverses
Use function notation, graphs and solving to find inverses

**Exponential Functions**

Add, subtract, multiply and divide exponential expressions – use properties of exponents
Graph exponential functions
Solve equations with exponential expressions (extraneous solutions)
Model using exponential functions

**Logarithmic Functions**

Add, subtract, multiply and divide logarithmic expressions – use properties of logs
Graph logarithmic functions
Solve equations with logarithmic expressions (extraneous solutions)
Model using logarithms functions

**Statistics**

S.ID.A (1-4)

**Systems of Equations**

A.RET.C.5

3 variable linear
Quad/linear
Poly/linear
Rational/linear

**Graphing Form of Functions**

Transformations

**At least 90% of the topics are in the textbook with reference to topics.**
**Comments?**

Okay, but I could not find a piece-wise function in the text. Piece-wise is important for calculus work and should probably be given some treatment in Alg 2. It is in the Alg 1 book, but should be continued in Alg 2.

- ○ Less than 25%
- ○ Less than 50% but greater than 25%
- ○ Less than 90% but greater than 50%
- ◉ At least 90%

**Student work involves significant work with applications/modeling and problems that use algebra skills.**
**Comments?**

Sampled throughout text and found consistent use of "Modeling" and application free response word problems.

- ○ Does not occur
- ○ Sometimes occurs
- ○ Frequently occurs
- ◉ Consistently occurs

**There are problems at a level of sophistication appropriate to Algebra 2 (beyond the mere review of Algebra 1 course topics) that involve the application of knowledge and skills needed.**
**Comments?**

Yes, sampled average cost problem and sphere volume problem both had application of skills.

- ○ Does not occur
- ○ Sometimes occurs
- ○ Frequently occurs
- ◉ Consistently occurs

**Do the chapter/units provide for the opportunity to graph the functions, solve for the zeros of the functions and model using applications of the functions?**
**Comments?**

Consistent graphing was sampled throughout text.

- ○ Does not occur
- ○ Sometimes occurs
- ○ Frequently occurs
- ◉ Consistently occurs

**Rigor: Examine the instructional materials, student practice and assessments. Look for evidence of where the topics explicitly require students to understand concepts, do the assignments that students work on build that understanding, and do assessment tasks reveal whether students understand the mathematics in question?**
**Comments?**

"Your turn" provided, but no direct linkage of text examples to assignment problems.

- ○ Does not occur
- ○ Sometimes occurs
- ● Frequently occurs
- ○ Consistently occurs

**Rigor: Do the materials feature high-quality conceptual problems and conceptual discussion questions? Do they provide opportunities for multiple representations?**
**Comments?**

Yes, found in Module Performance tasks, or lesson performance tasks.

- ○ Does not occur
- ○ Sometimes occurs
- ○ Frequently occurs
- ● Consistently occurs

**Rigor: Are the materials designed so that students attain the fluency and procedural skills required? Evaluate the lessons, chapter/unit assessments, daily routines, and homework assignments for evidence in the development of fluency and procedural skill supported by conceptual understanding.**
**Comments?**

Traditional text with emphasis on individual and pairs.  could not find clear spiral review text. Would like to see a separate summary of formulas page.

- ○ Does not occur
- ○ Sometimes occurs
- ● Frequently occurs
- ○ Consistently occurs

**Rigor: Are the materials designed so that teachers and students spend sufficient time working with applications, without losing focus on the topics defined for the course? Are there single- and multi-step contextual problems that develop the mathematics of the course, afford opportunities for practice, and engage students in problem solving?**
**Comments?**

Practice sets not overwhelming, multi-step and applications provided, no scenario headings, or inconsistent headings for example see p. 363 vs p.453, or problem 13. Vs problem 14 on p. 453

- ○ Does not occur
- ● Sometimes occurs
- ○ Frequently occurs
- ○ Consistently occurs

**Coherence: Are the materials coherent in their content, do the topics build on each other in a way that is beneficial to the instruction, student practice and assessments?**
**Comments?**

Book is quite voluminous in content, may contain much more than necessary. For example, separate section on sequences and series may be too much, statistical inference extends to hypothesis tests, Older book 2015

- ○ Does not occur
- ○ Sometimes occurs
- ○ Frequently occurs
- ● Consistently occurs

**Mathematical Practices: Are the mathematical practices addressed in such a way to benefit instruction and expectation of students?**
**Comments?**

**Yes, is the teacher edition on side margin. But students do not necessarily know when working in their text.**

- ○ Does not occur
- ○ Sometimes occurs
- ● Frequently occurs
- ○ Consistently occurs

**Standards: Does the instructors text reference the standards in the chapters/units?**
**Comments?**

**Yes, in side margin.**

- ○ Does not occur
- ○ Sometimes occurs
- ● Frequently occurs
- ○ Consistently occurs

**Does the textbook meet requirements/rigor for algebra 2 Honors, yet remain appropriate for Algebra 2?**
Comments?

Hard to see whether text would be applicable to Alg 2 (non-honors). However, the Response to Intervention supplement does have 3 tier levels of intervention that could make the text work for Alg 2 (non-honors).

- ○ Does not occur
- ● Sometimes occurs
- ○ Frequently occurs
- ○ Consistently occurs

**How do the supplemental materials reflect/extend the material in the textbook?**
Comments?

Tests seem basic, not quite matched to homework/assignment problems.

- ○ Does not occur
- ○ Sometimes occurs
- ● Frequently occurs
- ○ Consistently occurs