# 2017-2018 WCSD Algebra 2 Program Evaluation Rubric

**Evaluator Number**

5

**Program Number**

4

**Name of Text**

Algebra 2

**Publisher**

Houghton Mifflin Harcourt

**Rate This Text Overall**

☐ **High** ☐ **Mid** ☑ **Low**

---

**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?**

Quadratic unit presentation is weak. Does not have rationalizing of complex numbers. Does have nearly all the topics we cover. Does not have piecewise functions.

- ○ 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?**

Need to use supplemental materials to get to the modeling in some cases. Does include linear regression almost immediately.

- ○ 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, at the appropriate level, but lots of topics that we don't cover in our curriculum.

- ○ 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?**

Yes, but does not include a lot with graphing calculators.

- ○ 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?**

Generally yes, but overall I don't like the presentation as much. Assessment tasks are good but no better than others.

- ○ 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?**

Provides good ideas for discussion in teacher text, but not as part of the student text.

- ○ 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?**

Procedural skills are strong, but does not even derive the quadratic formula so conceptual understanding may be lacking for students.

- ○ 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?**

Not too many multi-step problems. Later units/chapters provide opportunity to model and apply.

- ○ 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?**

All functions include horizontal stretch/compress in a strange format, although a change, it does make sense, but would need to be implemented in Algebra 1. Layout of examples would be difficult for students to understand. Does not have rationalizing complex numbers. Don't like the quadratic graphing unit. Order of topics matches our curriculum more closely with rationals coming before

- ○ 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?**

Text is very wordy, seems to deliver most of the instruction rather than posing questions to students. The practices are integrated in the teacher edition for instructors to present and have students use the practices.

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

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

Standards are referenced at the beginning of the unit/chapter, but are not referred to in problems or examples.

- ○ 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?

May be too rigorous for regular level Algebra 2 because of the presentation of horizontal stretches/compressions with each function, also honors does not need this either.

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

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

Online materials were good for students. Resources extend what is in the book well, just don't know if I like what is in the book.

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