# 2017-2018 WCSD Algebra 2 Program Evaluation Rubric

**Evaluator Number**

20

**Program Number**

4

**Name of Text**

Algebra 2

**Publisher**

Houghton, Mifflin, Harcourt

**Rate This Text Overall**

- [x] **High**
- [x] **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?**

Most topics are found. Didn't have matrices and a few of the questions that we require, but overall the book had the topics in the order that we teach. It's a pretty standard textbook

- ○ 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?**

There are both skill based questions and modeling/application problems in each section. There are also Higher order thinking problems which challenge students. Elaborate questions are good and would hopefully get students to write more. I didn't find any open or parallel tasks. There are extension activities at the end of each section as well.

- ○ 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?**

The problems are appropriate for Alg 2 students. There is also a RTI supplemental book that gives detailed step by step notes and extra problems so if students need to go back they can.

- ○ 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?**

The sections have graphing, solving and modeling. They also have performance tasks and ready to go on check points.

- ○ 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?**

The homework problems build on themselves. There are basic problems and then word problems as well as multiple response and higher order thinking problems. These give students multiple chances to show their understanding and where they might struggle. The performance tasks bring everything together. Some of the notes questions ask for students to elaborate which gives a chance for

- ○ 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?**

There are homework problems that require multiple responses and the HOT questions require justification and critique for example. They also have module performance tasks which incorporates everything from the unit to be put to use. In the notes there are discussion questions and opportunities for students to reflect and practice on their own.

- ○ 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?**

Each unit ends with an essential question and key vocabulary needed. They give key examples for the sections with worked out solutions and a mini quiz and a performance task. They they have a ready to go on lesson before the next section. The section then starts out with an essential question and an are you ready babe with skills needed. The sections contain both procedural and modeling problems. These allow students to build their knowledge and then explain and show their

- ○ 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?**

The text allows students to practice procedural problems and then build on those concepts with real world and modeling problems. The lesson performance tasks at the end of each unit give opportunities for students to develop their knowledge and deeper understanding of the concepts.

- ○ 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?**

The book has a familiar layout and is easy to follow. Students and teachers can easily read the text and use it accordingly.

- ○ 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?**

**I didn't find any open or parallel tasks specifically, but the text is a good representation of what is required by students. They are required to do low, medium and highs questions. I think there should be some harder examples in each section.**

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

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

**Yes it references the standards in the beginning of the teacher edition and also in each section.**

- ○ 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?

This book is not at a high enough level for Honors Algebra 2. There need to be more rigorous problems

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

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

The RTI book would be very helpful for all students who are struggling not just the ones who are in RTI. Parents always want extra resources and this would be very helpful to give to students to help them get caught up with the concepts. The assessment readiness book is something a teacher could use as quiz questions or just extra problems to assign for homework etc. Online resources were easy to follow. Gave extra problems to give students.

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