2017-2018 WCSD Algebra 2 Program Evaluation Rubric

Evaluator Number

11

Program Number

6

Name of Text

Big Ideas Math: Algebra 2

Publisher

Big Ideas Learning

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?

Piecewise functions are missing
Composition of functions are not addressed. They are seen as a way to verify inverses, but never labeled or practiced out of this context.
Only systems of non-linear equations are quadratic in nature - no rational/linear or polynomial/linear.
S.ID.A.1-3 are missing, Some comparison of center occurs in a pre-chapter task, but does not address spread or extreme data points.

- ○ 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?

Each lesson brings in applications that require students to use the algebra skills learned in that section. A few are highlighted at the beginning of each chapter as a way of engaging the student in the lessons of that chapter.

- ○ 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?

While each chapter does include a "maintaining mathematical proficiency" assignment, the text is overall on a level that is appropriate to algebra 2.

- ○ 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?

Each family of functions is investigated from each of these approaches.

- ○ 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?

As each section begins with an exploration of what is to come students are engaged in topic at hand. This begins a process to build on their understanding of the concept. The assessments seem to be just the canned variety, although the alternative assessment and the performance tasks could reveal whether the students understood the mathematics at hand. Unable to see the test generator to see the

- ○ 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?

Through the performance tasks and alternative assessments yes... The text itself is fairly straight forward in what it is asking for.

- ○ 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?

Fluency and procedural skill is supported through the use of applications in each section. With reviews spread out every few chapters, allows for the teacher to touch on previous concepts so they are not lost. Unable to see the test generator to see the level of assessment questions.

- ○ 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?

There are applications available with each section, however, I would not say they are the focus of the section with the exception being the modeling sections.

- ○ 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 topics do build on each other in a way that is beneficial to the instruction of the course, going through each of the function families and what you can do with those families. Unable to see the test generator to see the level of assessment questions.

- ○ 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?

Mathematical practices are addressed in each unit, along with suggestions to increase engagement make them very useful to the instruction of the course.

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

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

Standards are addressed in each of the chapters, broken down by what sections they are covered in. Along with a more in depth inclusion of the standard in the section itself, highlighting to the students through it "core concepts" what the standard focus of the lesson is.

- ○ 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?

Each section comes with an enrichment and extension worksheet along with modeling in many of the sections that could meet the expectations of the honors course. It is however, largely a text designed for the regular level course.

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

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

The supplemental materials to reflect and support the material in the text.

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