2017-2018 WCSD Algebra 2 Program Evaluation Rubric

Evaluator Number

20

Program Number

2

Name of Text

Algebra 2

Publisher

Glencoe

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?

There are topics missing that are in our standards. For example there are not systems with linear/quadratic/ab value etc. Also there aren't piecewise functions with a mixture of different functions. Some of the sections are very limited like the complex and imaginaries sections. Graphing quadratic is very weak and missing a lot of topics. The same goes for graphing polynomial so. There are no matrices and no z-table.

- ○ 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 a lot more skill based questions than modeling questions. The skill based questions are good, but in the guided practice there aren't many extensions that apply it to real world situations. The modeling problems are limited. I do like the performance tasks at the end of the units. They would be great unit projects or group work for students to apply their knowledge

- ○ 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?

There are a lot of skill based questions that are appropriate for Algebra 2, but there are not a lot of extensions beyond that. The Algebra 2 students need to be able to apply their knowledge and not just show a skill. This book is definitely not good for Honors Algebra 2 class and not rigorous for regular 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?

The modeling questions are mostly as an extension in the homework. The sections do not incorporate modeling much in the guided practice and examples. There are sometimes modeling questions in the regular homework problems, but those should be a main part of the unit and not just as a random problem in the homework.

- ○ 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?

Most of the problems are skill based and do not ask the students to build on their understanding. There are performance tasks at the end of the chapters, but it is more like an extension rather than part of the lesson. There are open ended questions at the end of the homework which is nice and also some modeling problems here and there, but it needs more.

- ○ 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?

The opportunities for multiple representations are mostly in the homework open ended questions. There are 1 or 2 in each homework assignment. They should be in the main part of the guided practice. The same goes for modeling problems. It is more of an afterthought rather than a main focus of the textbook.

- ○ 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?

The procedural questions are good and cover the concepts well. They incorporate many different types of problems and ask the students to do the same thing in the homework. There are some sections that are a little weak like imaginary numbers and graphing quadratic a. The study guides match the sections and so do the "Preparing for Assessment" assignments.

- ○ 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 very few opportunities for teachers and students to work with applications. Most of the problems are skill based. The only opportunities that I see are at the end of the chapter with the performance tasks. There are a lot of single and multi step problems, but not contextual. There is not a lot of application in this textbook.

- ○ 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 is coherent and the content does build on itself. The order of the textbook makes sense and not too much different than we teach now.

- ○ 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?

The mathematical practices benefit instruction with basic skill questions, but they do not benefit the expectation of students. This book does not incorporate modeling into the lessons. It is a basic book with not a lot of application and reasoning behind the procedural math.

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

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

I didn't see anywhere where they referenced the standards

- ● 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?

Definitely not. I do not believe the book is high enough for regular Algebra 2 and it would not benefit Honors Algebra 2 students at all.

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

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

They use the ALEKS program which I have used before and liked, but we would have to give each student a subscription which is expensive and not every student has access to a computer. They don't extend the material much. Again this is too low of a level for our students

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