2017-2018 WCSD Algebra 2 Program Evaluation Rubric

Evaluator Number

5

Program Number

1

Name of Text

EnVision Algebra 2

Publisher

Pearson

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?

Does not have "write equations in 3 unknowns to write a quadratic". Does not contain concepts of "increasing/decreasing", end behavior for most function families. Focus is more on graphing complex rational functions than basic "graphing" form ones. Only does systems for linear (3 variables) and linear/quadratic.

- ○ 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?

Quite a few application and modeling problems for each unit/chapter, but sometimes lack examples.

- ○ 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?

Some application problems, most at appropriate level. May not be enough problems at enough different levels. Fairly short practice sets. No solutions for students.

- ○ 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. There are some good model and application problems, but there is a lack of examples. Students that struggle have nothing to reference for these problems.

- ○ 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?

Assessment resources look weak. Not a lot of free response or question choice. Practice sets build understandings and require them, but they are also lacking in problem choice (not a lot to choose from). Example problems are good, but there is a lack of examples for problems of different types. No solutions for students to check against!

- ○ 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 high quality conceptual questions throughout each topic. The book offers some multiple representations of topics such as using graphs to solve systems and explain extraneous solutions.

- ○ 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 book moves fast ... Sometimes lacking many examples of different types of problems. It will often build from a basic problem to the most difficult problem with little in between to reference. It may be difficult for a new teacher to fill in the gaps.

Book presents material for those who obtain a high level of conceptual understanding, and assumes a high level of conceptual understanding

- ○ 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 and technology problems in this book. These make pretty big jumps from basic understandings with little in-between support for struggling students.

- ○ 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?

Some things lack the coherence that I am used to: example, difference of squares does not make an appearance until polynomial identities. Introduces horizontal reflection in 1st chapter, but then never uses it with any function family (weird).

Also, no review of graphing basic linear functions, which students may

- ○ 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?

Presentations and problems require the use of the mathematical practices which can benefit instruction. There is little support for some of these high-level practices for teachers that are not familiar with getting students to use them.

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

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

Referenced at the beginning of 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?

There are only a few problems that exceed the rigor of regular Algebra 2, so there are probably not enough challenging problems for the honors course.

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

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

Online resources seems easy to access. Student companion is small, contains some higher level questions.

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