

**DATE:** Tuesday, June 5, 2018

**TO:** Kevin Etue, Principal, Churchill  
Andrew Pesci, Principal, Franklin  
Gary Harper, Principal, Stevenson  
Joe Anderson, Livonia Career Technical Center

**FROM:** Ben Hillard  
Math and Science Curriculum Coordinator

**SUBJECT:** **Algebra 2 Textbook Recommendation**

**Committee Members**

Marlene Scott, Churchill  
Dave Bjorklund, Franklin  
Jen Abler, Stevenson

**Recommended Textbook:**

**enVision Algebra 2**, 2018, Pearson Education, Inc.

**Lakisha Flowers, Account General Manager**  
**Pearson Education, Inc.**

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**Supplemental Materials**

- Digital Courseware 8 year license.
- Teacher Resource Package

Cost proposal is attached.

**Distribution of textbooks**

Churchill: 260

Franklin: 275

Stevenson: 315

Career Technical Center: 25

## **Summary of Course**

The primary focus of Algebra 2 is the study of relations and functions (quadratics, polynomial, exponential, logarithmic, rational, and radical) including operations, graphing, solving, and applications. Algebra 2 expands the study of mathematics to include complex numbers and also includes systems of equations and inequalities, sequences and series, and data collection and analysis.

## **Overview**

In school year 2017-18, we were able to adopt a new Algebra 1 and Geometry textbooks to align with the Michigan Math Standards. During this year, we have also formed an Algebra 2 textbook committee to review our Algebra 2 materials, evaluate potential programs, and determine the best solution for our classrooms going forward.

Our committee has come to the decision that best possible choice would be enVision Algebra 2 (2018). This book best met the evaluation criteria and coherently developed the mathematical concepts we deemed as priorities during our analysis. This book would be a continuation of the program selected for Algebra 1 and Geometry, thus allowing us to build greater consistency throughout our high school classrooms. The enVision series provided engaging tasks to deepen conceptual understanding as well as opportunities to strengthen and apply procedural skills.

In addition, the enVision series provides additional resources for teachers and students to view tutorials, gather data, and work through questions. After reviewing several choices, we felt that the enVision textbook was the strongest option and would provide a valuable resource for our teachers and students of Algebra 2.

## **Evaluation Process**

Our Algebra 2 textbook committee included a teacher from all three of our high schools. We met throughout the year to develop a vision for our Algebra 2 courses, evaluate materials, and reflect on how these materials would impact teaching and learning. Although we believed that it would be ideal if we continued the same series to provide a coherent and comprehensive program, we wanted to evaluate all programs to ensure we were selecting the most appropriate materials for our teachers and students.

We began our work by creating a shared vision of what our committee deemed as essential elements for new materials.

## **Shared Vision**

1. Conceptual development of Algebra 2 topics
2. Access to a variety of different resources for differentiation, practice, reteaching, assessment, etc. - including SAT preparation
3. Quality and quantity for practice and skill development
4. Application of concepts and skills in authentic, meaningful tasks.
5. Attention to Standards of Mathematical Practices

### **Evaluation Criteria**

We evaluated the textbooks on four main categories: Purpose, Student Engagement, Curriculum/Pedagogy, and Assessment for Learning. Within each of these categories, were several indicators related to that domain. This rubric was developed using our shared vision and principles of our 5D evaluation system. The full evaluation rubric is attached.

### **Topics Evaluated**

Although we spent time reviewing each textbook in its entirety, we initially developed priority standards so we could focus on the development of certain topics deemed most essential by the committee. In addition, we chose one standard to completely unpack and track the development through each text.

Focus Standard: HSF.LF.A.4

For exponential models, express as a logarithm the solution to  $ab^{ct} = d$  where  $a$ ,  $c$ , and  $d$  are numbers and the base  $b$  is 2, 10, or  $e$ ; evaluate the logarithm using technology.

### **Evaluation Rubric Outcome**

Using our evaluation criteria, we rated five different textbooks (listed below). enVision 2.0 Algebra 2 was our highest rated textbook using our criteria. Our next most preferred text was Carnegie. Both of these texts were rated high in the Purpose and Student Engagement Domains based on our review. enVision scored higher in the Curriculum and Pedagogy domain, specifically in opportunities for differentiation.

### **Textbooks Evaluated**

- Big Ideas Math Geometry, 2015
- Carnegie Learning Geometry, 2016
- enVision Algebra 2, 2018
- Eureka Math Geometry, 2015
- Glencoe-McGraw Hill Geometry, 2018

### **Pilot**

Carnegie and enVision 2.0 were rated higher than the other 3 programs and generated the most interest by the committee, therefore we decided to pilot those two textbooks. Churchill, Franklin, and Stevenson each had at least one classroom participate in teaching out of the two top-rated textbooks. For each textbook, the teachers selected one unit to teach.

### **Student Rating**

At the conclusion of the pilot for each set of materials, students were given a survey and were asked questions relating to their perception of their level of understanding of the math concepts covered during the time of the pilot as well as their opinions on the ease of use and layout of the texts. For all questions, the average score was almost identical between the two programs piloted.

There were opportunities for students to share their overall opinions, including positive and negative aspects from each program. We plan on using this feedback during the implementation process.

### **Meeting with Representatives**

With the student results being nearly identical between the two choices and teachers finding aspects of each that they favored, we asked to spend time with representatives from each company. We wanted an opportunity to ask questions and discuss anything that we may have missed or not explored deeply enough. We were able to meet with multiple representatives from each company for a half day. They each presented a lesson in full, then answered questions we had from piloting the material. Three teachers from each of Churchill, Franklin, and Stevenson attended this meeting.

Afterwards, teachers had opportunities to speak at their buildings. The group consensus was that enVision Algebra 2 would be the most logical choice due to it aligning with our other math courses as well as the ways in which it develops Algebra 2 concepts.

### **Professional Development Needs**

- Training of all online components
- Overview of print resources
- Time for collaboration and planning
- Follow-up training/coaching throughout at least the first year of implementation

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