

Elementary Math Program Recommendation

Key Question(s)

What is the core issue (problem) to be addressed?

The district is looking to identify a single resource that is aligned to Massachusetts State Math Curriculum Frameworks K - 5.

How does it relate to our district goals or student achievement?

District Goal #1: Foster and sustain educational services that support, enrich and extend our curriculum for all students

- By identifying a consistent and comprehensive resource, teachers will have the materials that they need to better identify student needs, differentiate instruction and provide intervention.

Brief Background/Overview

What are our current practices?

Prior to this year, we have been using Everyday Math, 2008 Edition, as the foundational series for our curriculum, supplementing for standards not covered at the respective grade levels.

What is working?

The content spirals, meaning that key concepts are frequently reinforced and reviewed throughout the series.

What are the challenges?

Since the Everyday Math (2008) is not fully aligned to the updated Massachusetts State Curriculum Framework, teachers need to supplement the content in order to meet the new standards.

Background continued...

What data is being used to show this?

A formal review comparing the 2011 Massachusetts State Math Curriculum Framework to our existing curriculum has exposed gaps that need to be addressed.

2015-2016 Math Program Pilot

In order to thoughtfully choose a new math program, we engaged in a year long pilot both Everyday Math 4, which is the updated version of our current program and EnVision 2.0. Each program was piloted at all grade levels and in all three elementary schools.

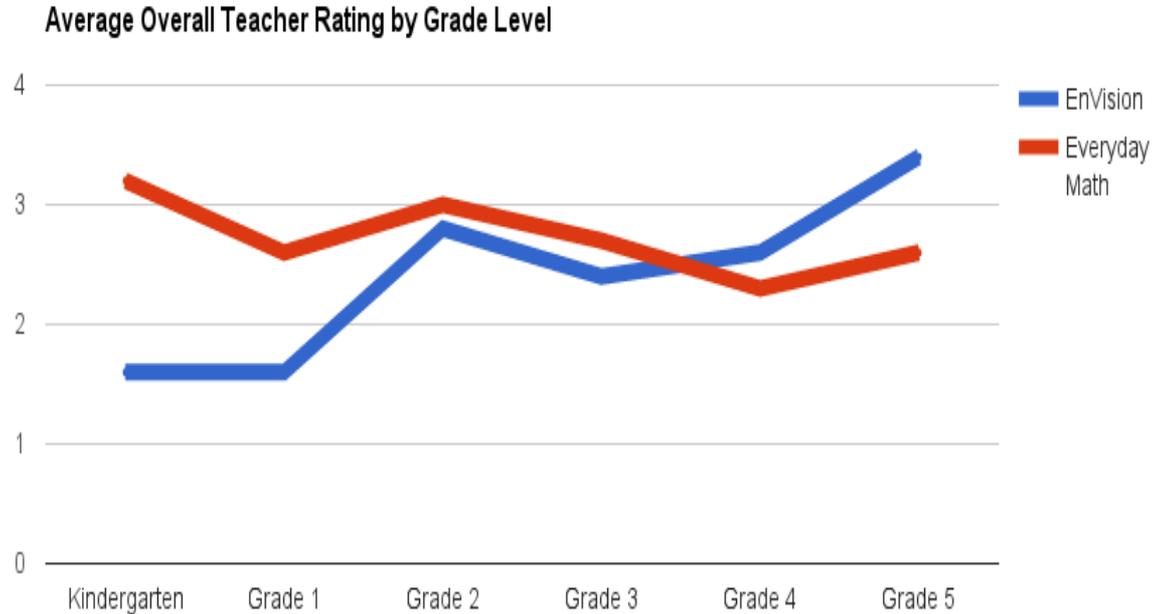
Please see Elementary Pilot Guidelines for more information

Teacher Feedback:

Teachers were surveyed to give feedback in the following categories

<u>Category 1: Mathematical Content & Practices</u>	Claim: The program is aligned to the updated Massachusetts state frameworks, for both content and practices.
<u>Category 2: Overall Structure</u>	Claim: The structure of the program strongly supports student learning.
<u>Category 3: Student Experience and Supports</u>	Claim: The program emphasizes doing rather than memorizing mathematics. Students are actively involved in learning mathematics.
<u>Category 4: Teacher Supports</u>	Claim: Instructional materials provide support that enables teachers to teach to the rigorous expectations of the updated Massachusetts mathematics frameworks.
<u>Category 5: Assessment</u>	Claim: The student assessment materials provide teachers high quality information about what their students know and how they think about mathematics.

Teacher Feedback:



We found the overall rating of the program shifted dramatically as we looked at results by grade level. It was also important to consider that we were comparing a very familiar program with one that was unfamiliar

Therefore the next step was to understand student growth comparing the two programs.

Student Growth

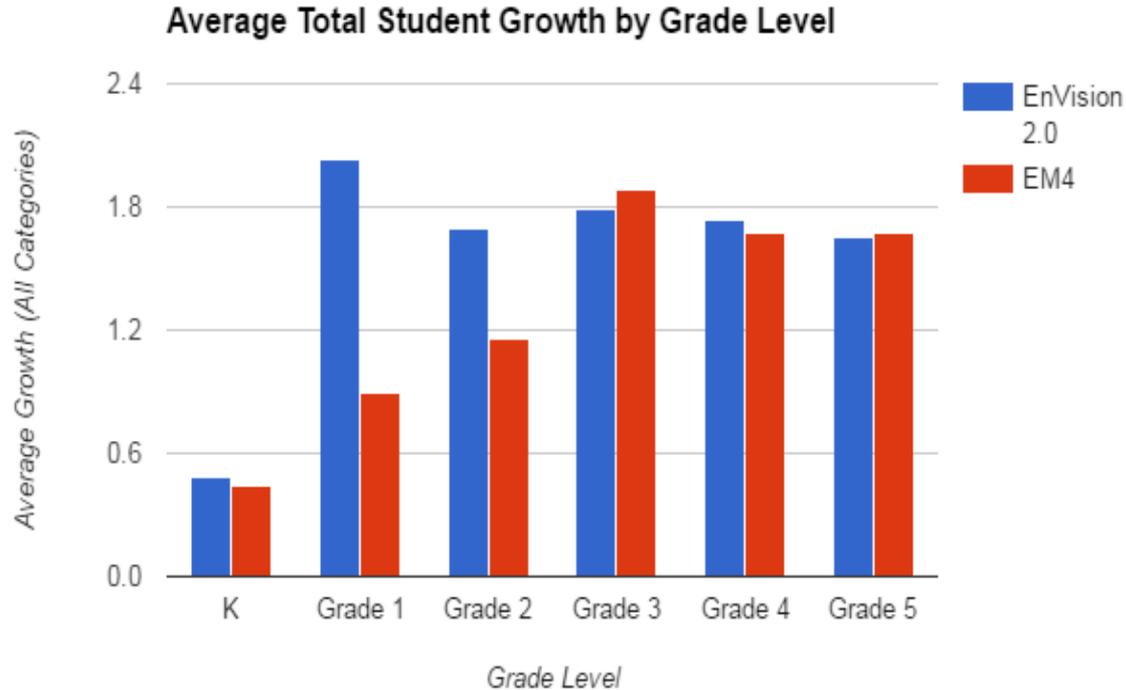
Student growth was measured through the use of our district assessments, which are given at all grade levels in the fall, winter and spring of each school year. For the purposes of this we looked at growth comparing students performance on the Fall 2015 Assessment to the Spring 2016 Assessment. In Grades 1-5 students are assessed in the areas of :

- Measurement and Data
- Numbers and Operations in Base Ten
- Operations and Algebraic Thinking
- Geometry

Additionally, students in Grades 3-5 are assessed in the area of:

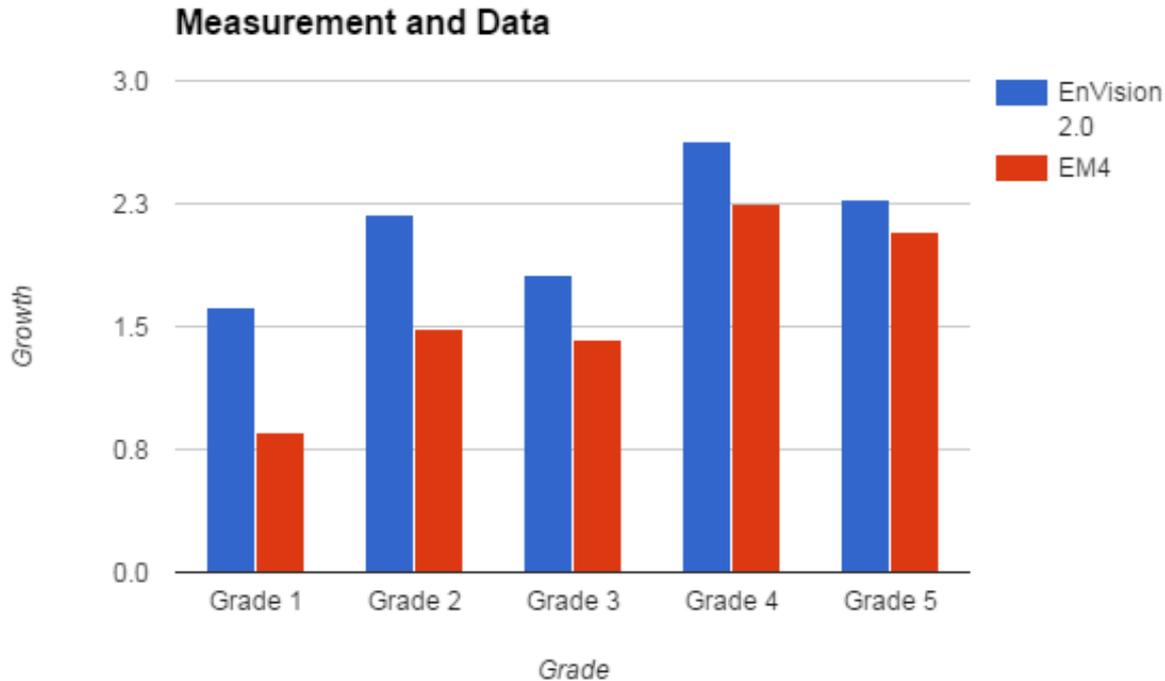
- Numbers and Operations relating to Fractions

Student Growth



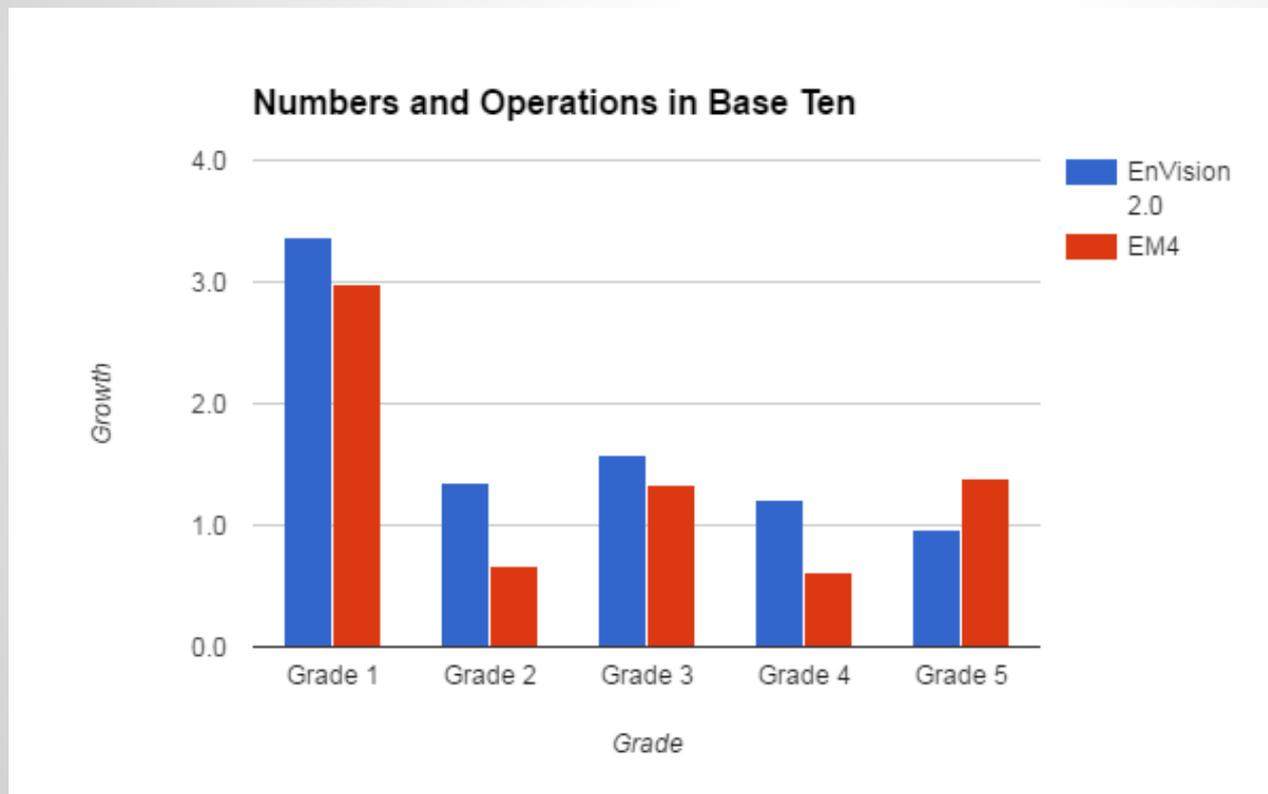
We were struck by the comparison of growth at the early elementary level. This made a great impression on us as we considered the impact that continued use of a program could have for our students over time.

Student Growth



When data was broken down further by grade level it was also noted that particular growth was made in the areas related to Number Sense (Measurement and Data and Numbers Operations in Base Ten)

Student Growth

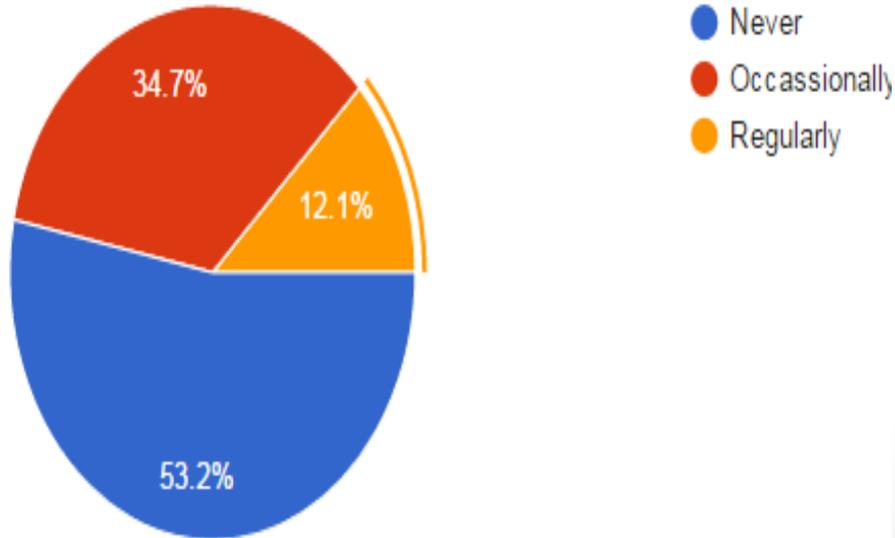


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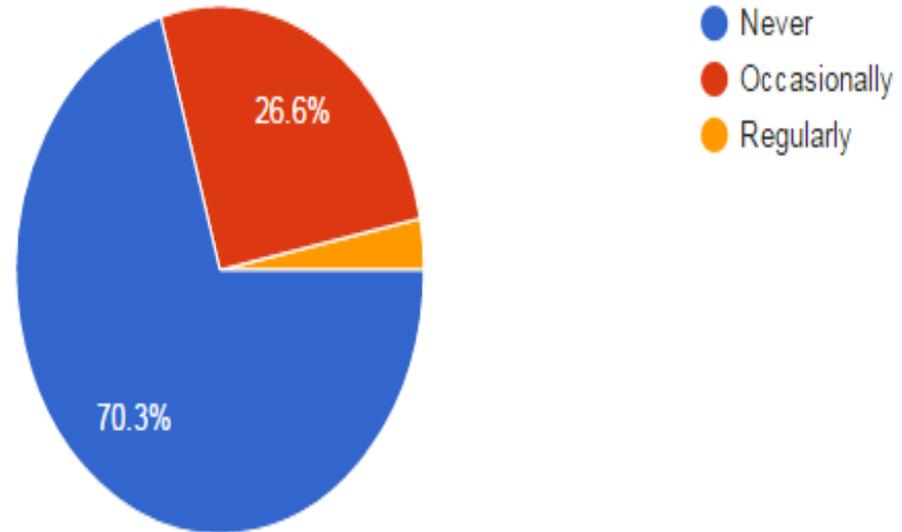
Parent Feedback:

Looking at this data we understand that supporting our parents with the shift in program and making them more aware for the resources available to them and their students when working at home is critical to success.

How often did your child access their online math program account independently at home?



How often did you access your child's online math program account at home with your child?



Recommendations

It is the recommendation of the administrative team that the Nashoba Regional School District proceed with the the adoption of EnVisionmath 2.0 for grades K-5 beginning in the 2016-2017 school year.

- EnVisionmath 2.0 will be a consistent and comprehensive resource used by all of our classroom teachers, special educators and math specialists in Grade K-5 across the district. It provides teachers a wealth of resources for identifying student needs, and providing both differentiation and intervention as needed.
- EnVisionmath 2.0 provides the opportunity to strengthen the development of math practices in our instruction as well as a consistent structure that encourages the development of math discourse for our students.

Additional information:

- Strong digital resources across all grade levels
- Adaptive homework in Grades 3-5
- Multiple forms of both formative and summative assessment
 - Depth of knowledge and intervention recommendation aligned
- Opportunity for ongoing professional development
 - Digital lesson and topic specific teacher professional development
 - Digital professional development resource bank
 - Professional Development provided beyond the initial introduction
- Also adopted by other members of the Assabet Valley Collaborative, providing the opportunity for future collaboration:
 - Berlin/Boylston, Northborough/Southborough, Grafton

Budget Implications

How much will this initiative cost?

- Overall cost of \$180,000.00 split over 4 years
- \$45,000/year (\$30 per student)

This includes both student and teacher materials, digital access and professional development both from Pearson to support our teachers through the program implementation as well as support their development as teachers of mathematics.

In addition, during a portion of the 2016-2017 school year we are also looking to engage an outside consulting group to work with teachers around supporting math practices and building conceptual understanding using the program. The cost of this work will be \$13,500.

Budget Implications

What is included in the cost?

- Individual student manipulative kits for all of our students
- Center kits for all classrooms
- 4 year subscription to consumable student edition
- 4 year subscription for digital courseware
- 10 additional professional development “days” beyond introduction

Complementary resources

- Introductory training for teachers
- Digital professional development resource library
- All program teacher resources both print and digital
- Digital access to 2016 *Investigations* program for all grade levels

Budget Implications

How will we demonstrate that this is an effective use of resources?

During the 2014-2015 school year we were paying roughly \$30/student for math materials at the building level, without including the cost of professional development. The decision to move forward with a 4 year contract as a district ensures the consistent purchase of materials for all of our students.

Including initial professional development directly from Pearson and additional support from an outside consultant in the implementation year will also ensure the success of our teachers

Professional Development and Support

- Introduction trainings will take place in August with teachers broken into more specific grade level groups (K-1, 2-3 & 3-5)
- An online video series will also be available
- Math nights for parents early in the year to introduce the program and online supports
- The September 23 and October 21 professional development days will also be dedicated to program support in grade level groups
- The December 9, January 27 and April 28 professional development days will be dedicated to work in grade level groups with Looney Consulting consultants. Their consultants will work with teachers around supporting math practices and building conceptual understanding using the program.

Statement of Impact

How will this initiative improve student achievement/student engagement?

- We will see a positive impact on student achievement through professional development that supports teachers and through the consistent use of program better aligned with current state frameworks.

How will it impact our Climate? Culture?

- By providing a consistent resources and a lesson framework that promotes the development of mathematical practices and conceptual understanding in all of our classrooms

How will it help us achieve our goals?

- The resources and structures provided by this program addresses district goal to foster and sustain educational services that support, enrich and extend our curriculum for all students

How will we measure impact?

- We will measure impact over time through the continued use of our district assessments and yearly MCAS data