



A Community of Learners

Informational Memo: 6-8 Math Pilot Update

TO: School Board
Trisha Kocanda, Superintendent

FROM: Alison Hawley, *Director of Curriculum, Instruction & Assessment*

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Overview & Background

At the October 17, 2014 School Board meeting, the initial 6-8 Math Materials Pilot process, timeline, and proposed program materials for preliminary vetting were shared. As a result of the presentation, the Board requested additional philosophical and research information related to the proposed math materials. Selecting materials to support curricular initiatives is an essential and important endeavor that should result from an objective, rigorous process supported by educational research.

While research has concluded that the teacher is the greatest factor in student achievement, materials have an important influence as well. Each set of materials has the potential to provide some or most of the robust instructional rigor that reflect best practices. Using research-based vetting tools allow evaluators to remove as much subjectivity and bias as possible in the selection process.

Prior to deferring the 6-8 Math Materials Pilot in the fall of 2013, a math sub-committee vetted the math programs Big Ideas, Go Math, and Connected Math Project utilizing the vetting tools developed by the Common Core State Standards Mathematics Materials Analysis Project to guide the process. As a result of the vetting efforts, only one program, Connected Math Project, met the criteria to move to the pilot phase of the materials adoption process. Because the sub-committee was only able to identify one program to review, the conclusion was that there were not enough materials to support a robust mathematics materials pilot. The process was deferred to the 2014-2015 school year to allow publishers additional time to bring new materials to market. Over the last, year

new materials have been introduced and the sub-committee is ready to reconvene.

Framing the Vetting Process

In the article, “Curriculum Materials Matter: Evaluating the Evaluation Process,” The National Council for the Teachers of Mathematics (NCTM) outlines the top lessons learned from materials curriculum review criteria and process (**to view the article in its entirety, please click here**). The article specifically refers to the Common Core State Standards Mathematics Curriculum Analysis Project Tools, which the District will utilize for the 6-8 Math Materials Pilot process and were included in the October 17, 2014 School Board Packet.

The information in the table below is quoted directly from the NCTM article regarding the top lessons learn in the math materials selection process:

Top Lessons	Description/Explanation
Focus on the central evaluation question: What curriculum materials best support students’ learning of the standards?	What students learn and how well they learn it depend on both mathematics content and instruction. Framing the review in terms of students’ learning makes support for effective teaching and learning a critical feature for review, along with content.
Content analysis is much more than alignment. Effective content analysis examines how materials address the standards.	-Conceptual understanding, procedural fluency, and applications are balanced. -Development of content reflects what is known about how students learn that content most effectively. -Student problem-solving and reasoning receives explicit and regular attention. -Materials are focused.
Analyze the nature of the instructional tasks and activities – this is as important as analyzing content.	This analysis examines how the materials support students’ learning through opportunities to engage in tasks that promote reasoning and problem-solving and teachers’ implementation of effective teaching practices
Focus initial reviews on student materials and teacher editions of the materials.	These have the primary influences on classroom teaching and learning.
Consider equity, diversity, and access.	High-quality content and instructional practices are critical for the success of all students.
Recognize that all omissions or gaps are not the same.	Given the variation across states, materials are likely to contain content beyond that addressed in the standards. Can the extra content be easily skipped? If the extra content

	distracts from content addressed in the standards, it disrupts the focus and coherence of the materials.
Recognize that additional content is less problematic than gaps that are difficult to fill.	No materials are perfect. Inevitably, an evaluation process will uncover gaps, omissions, or inadequate treatment of some content. The key question is how easily teachers, the school, and the District can fill the gaps.
Allocate sufficient time for your review	Thoughtful analysis of the content, instructional activities, and other features of the curriculum materials takes time.
Use a “narrowing choices” strategy to make the review process as efficient as possible	To make the process manageable, review all material for their treatment of only one or two key content domains.
Rate and discuss rather than score.	Analysis of materials is qualitative not quantitative.
Provide adequate professional learning for the members of the review team.	It is essential that all reviewers both understand the standards and are knowledgeable enough about effective teaching practices for implementing them.
Try out your top choices in the classroom	The real test of quality is the learning they support in the classroom.

Publisher Overview of Selected Materials

The following programs have been selected for the initial materials vetting process. The information provided below has been quoted directly from the publisher websites that includes who developed the materials, the program mission statement, goals, and philosophy. The purpose of the materials vetting process is to determine whether or not each of the program’s claims hold up against the established criteria of the Common Core State Standards for Mathematics, the Standards for Mathematical Practice, and the instructional methodologies outlined by The National Council for the Teachers of Mathematics (NCTM) and the National Council for the Supervisors of Mathematics (NCSM).

Connected Math Project 3 (CMP3)
Michigan State University
Mission Statement:
All students should be able to reason and communicate proficiently in mathematics. They should have knowledge of and skills in the use of the vocabulary, forms of representation, materials, tools, and techniques, and intellectual methods of mathematics. This includes the ability to define and solve problems with reasons, insight,

inventiveness, and technical proficiency.
Goals:
Help students develop math knowledge, conceptual understanding, and procedural skills along with an awareness of the rich connections between math topics- across grades and across content areas.
Philosophy:
The instructional philosophy is an emphasis on inquiry and applications fully addressing the Common Core State Standards for Mathematical Practice. Throughout the program, students focus on problem-solving strategies, habits of mind, and mathematical proficiency. Students learn to communicate their reasoning by constructing viable arguments, offering proofs, and using representations. This is explicitly aligned within the content of the curriculum.
Digital or Print Materials:
Connected Math Project 3 has both print and digital components

College Preparatory Mathematics (CPM)
CPM is a non-profit educational consortium
Mission Statement:
CPM Educational Program strives to make middle school and high school mathematics accessible to all students. It does so by collaborating with classroom teachers to create problem-based textbooks and to provide the professional development support necessary to implement them successfully.
Philosophy:
<ul style="list-style-type: none"> • Mathematics is a coherent intellectual system, not a collection of disjointed facts, and needs to be taught in a way that makes coherence clear. • Curriculum works best when it is successful with all students, including “traditionally struggling students” and “accelerated” students. • Teachers teach better when materials are flexible • Students learn more when they discuss their thinking with others • Teams work better when the work actually requires a team and there is something to talk about • A student’s learning is more meaningful and is better retained when he or she reaches a level of understanding necessary to explain or justify his or her thinking
Digital or Print Materials
CPM provides print and digital materials

Agile Mind
Developed through partnership with the Charles A. Dana Center at The University of Texas –Austin, and has been involved from the inception in the Common Core State Standards for Mathematics (CCSS-M)
Mission Statement:
Core to Agile Mind’s pedagogical approach is the knowledge that 21 st century skills, such as motivation, positive self-belief, and productive persistence, are fundamental to a student’s success in school, college, and career. Agile Mind mathematics and science

programs are all designed to incorporate breakthrough findings in the learning sciences, neuroscience, and psychology on these non-cognitive factors and their effect on how students learn.
Goals:
<ul style="list-style-type: none"> • To create a comprehensive system for teaching and learning • Teachers are at the heart of instructional leadership • Built for the next-generation standards, not just aligned to them • Explicit design for 21st Century Skills • Embedded formative assessments
Online or Print Materials
Agile Mind is an online program

Engage NY
Developed and maintained by the New York State Education Department (NYSED)
Mission Statement:
EngageNY.org is dedicated to providing educators across New York State with real-time, professional learning tools and resources to support educators in reaching the State’s vision for college and career ready education for all students
Goals:
<ul style="list-style-type: none"> • Implementation of Common Core Standards • Teacher leader effectiveness • Data-driven instruction
Online or Print Materials
Engage NY is an online program

Program Criticisms

No matter how stringent or controlled the development process of the proposed math materials were on the part of the universities or institutions, none were immune from criticism. Parent criticisms of each program are similar in theme and reflect the following concerns:

- Heavy group nature of math curriculum versus direct teacher instruction and individual exploration
- Lack of procedural rigor and over-reliance on discovery methods
- Over-emphasis on everyday life problem-solving versus hard numbers
- Lack of basic skills instruction
- Confusion around the spiraling nature of the curriculum

Next Steps

Since the October 17, 2014, school board meeting, the Curriculum Office has explored the option of expanding the pilot to incorporate neighboring schools in New Trier

Township. Avoca and Sunset Ridge have expressed interest in piloting and selecting materials as a group. An update, including a revised timeline, will be shared at the December 16, 2014, School Board meeting.