

BOARD OF EDUCATION

Attachment: Information 6

PALO ALTO UNIFIED SCHOOL DISTRICT

Date: 01.26.16

TO: Max McGee, Superintendent of Schools

FROM: Markus Autrey, Associate Superintendent – Educational Services

PREPARED BY: Barbara Harris and Math TOSA Team – Chief Academic Officer Pre K-5

SUBJECT: Elementary Math Exploration Timeline

STRATEGIC PLAN INITIATIVE

Academic Excellence and Learning

RECOMMENDATION

This item is presented for information only; no action is required.

BACKGROUND

Goal and Rationale

Goal: The primary focus for this exploration year will be for elementary sites to explore a variety of Common Core State Standards (CCSS) aligned math curricula. This collaborative exploration will strengthen teacher understanding and instructional strategies in relation to the CCSS and build a cohesive teacher leadership group that will recommend 2-3 curricula that are worthy of a formal pilot during the 2016-17 school year.

Rationale: In order to identify 2-3 curricula worthy of a pilot, it is required that a PAUSD teacher leadership team form and develop a deep understanding of the Common Core State Standards in both the knowledge and the application of math content and practices. This will also give all PAUSD classroom teachers a deeper understanding of the CCSS as they explore the new materials. A year of professional development opportunities, work with Math TOSAs, and exploration will provide our district with more time and flexibility to prepare to begin the pilot phase. In preparation for this exploration year, a team of math TOSAs and principals attended the National Math Conference in Boston last spring. Current trends and practices as well as new math materials were reviewed. Following this current year of exploration, the formal math pilot process will begin at the start of the 2016-17 school year.

Exploration Parameters and Description

While maintaining the current adopted Everyday Math pacing, scope, and sequence, and continuing to give periodic district assessments to maintain accountability, sites/teachers have a full year in which they may sample parts or portions of different curricula. For example, teachers can choose from the list of different CCSS aligned programs, create a shared plan for exploring those materials, and swap out lessons from Everyday Math.

All teachers are encouraged to explore new materials. Those not exploring new materials will continue teaching the adopted Everyday Math curriculum and using the bridge materials that were provided last year. These materials bridge the gap from old standards to our new common core

state standards. For those who choose to explore materials, it is important that each teacher try at least two different curricula. Having hands-on experience with two or more curricula will expand our collective district knowledge on the quality of what is available. Looking at multiple curricula will also allow us to maintain objectivity as we thoughtfully select our pilot materials for the 2016-17 school year.

Math Exploration 2015-16 Timeline

1. Elementary Math TOSAs will connect with Math Lead Teachers at sites. This team will discuss how to get input from their teachers and principal to select materials to explore. (Mid-September)
2. Math Leads/principals/staffs will select 2-8 different curricula they would like to explore. Principals/staffs can choose from the approved CCSS curricula, or other Common Core aligned materials. (End of September)
3. The Elementary Education Department will order and deliver exploration materials. (September- October)
4. Grade levels or individual teachers will create a plan for exploring materials (multiple lessons from at least two different curricula) and submit a plan to the principal. (October- November)
5. Teachers will explore materials according to their individual or grade-level plan and agreements with their site principal. (November-March)
6. An elementary math Parent Survey will be distributed. (February)
7. Parent committee interest forms will be shared for potential parent members.
8. Math Lead Teachers and TOSAs will collect teacher feedback from the exploration period. (April-May)
9. Math Lead Team along with parent representatives will make a recommendation of 2-3 curricula for a formal pilot in following year. (May)

PAUSD's K-5 Math Exploration

Presentation to the Board of Education

January 26, 2016



Exploration Year Overview

1. Goals and Rationale
2. Teacher Committee
3. Parent Involvement
4. Next Steps



Goals

Goal:

1. School sites will explore a variety of Common Core State Standards (CCSS) aligned math curricula.
2. This collaborative exploration will strengthen teacher understanding and instructional strategies in relation to the CCSS.
3. Build a cohesive teacher leadership group that will inform the pilot committee of 2-3 curricula that are worthy of a formal pilot during the 2016-2017 school year.
4. Include parent voice through a parent survey and establishment of an inclusive adoption committee.

Rationale

Rationale:

- In order to identify 2-3 curricula worthy of a pilot, it is required that a PAUSD teacher leadership team form and develop a deep understanding of the Common Core State Standards in both the knowledge and the application of math content and math practices.
- Exploration will provide PAUSD classroom teachers a deeper understanding of the CCSS as they consider and use new materials.
- This year of exploration also provides our district with more time and flexibility to prepare to begin the pilot phase. Following our year of exploration, the formal pilot process will begin at the start of the 2016-2017 school year.

Exploration Year vs Pilot Year

	Exploration Year	Pilot Year
When	2015-2016	2016-2017
Who	Teachers, math lead teachers, administrators, parents	Teachers, math lead teachers, administrators, parents, board members
What	Openly explore a variety of CCSS aligned materials	Focused, in-depth, highly organized pilot of 2-3 curricula
How	School sites choose from a variety of curricula to explore	Formal pilot schedule 2-3 curricula
Goal	Narrow curricula to 2-3 options for the formal pilot	Make a recommendation for a formal adoption to the PAUSD Board of Education

Timeline

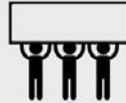
Timeline for Math Exploration

2015-2016



1

**TOSAs & Math Leads
Connect**
Mid-September



2

**Schools Select
Curriculum Materials**
End of September



3

**Elementary Education
Department Orders
Curriculum Materials**
October - November



6

Parent Input Survey
January - February



5

**Teachers Explore
Curriculum Materials**
November - March



4

**Teachers and
Principals create an
Exploration Plan**
October - November



7

**Teachers Provide
Feedback**
April - May



8

**Math Lead Team makes
recommendation of 2-3
curricula to
formally pilot**
May



9

**Formal Pilot Year
2016-2017**

Common Core Exploration Materials

Exploration Materials

	California Math Expressions Houghton Mifflin Harcourt	
	engageNY / Eureka Pearson Scott Foresman	
	enVision Math 2.0 Pearson Scott Foresman ©2016	
	Everyday Math 4 McGraw-Hill ©2015	
	Go-Math Houghton Mifflin Harcourt	
	Investigations - TERC Pearson Scott Foresman ©2012	
	Math in Focus: Singapore Houghton Mifflin Harcourt	
	My Math McGraw-Hill	
	Other	



Criteria

- Alignment with CCSS

- Instructional Materials Rubric

- Concept Development
- Standards & Practices Organization
- Teacher Accessibility & Ease of Use
- Accessibility for Special Needs Populations (including enrichment)
- Lesson Design & Sequence
- Instructional Strategies
- Assessments
- Support Materials

Math Lead Teacher Committee

1. Exploration of curricula
2. Deepen our collective knowledge of math practice and Common Core Content Standards.
3. Collaborative monthly meetings
4. Principal representation
5. Upper and primary classroom teacher representation

8 Mathematical Practices / Content Standards

Standards for Student Mathematical Practice

1 **Make sense of problems and persevere in solving them.**



Keep on going!

2 **Reason abstractly and quantitatively.**

Write a story for the mathematical equation


$$\frac{1}{2} \times 4$$

DeJuan exercises $\frac{1}{2}$ hour a day for 4 days.
How many total hours does he exercise?

Think what makes sense.

3 **Construct viable arguments and critique the reasoning of others.**



Talk and explain.

4 **Model with mathematics.**



Hours 0 $\frac{1}{2}$ 1 $\frac{1}{2}$ 2

$$\frac{1}{2} \times 4 = 2 \text{ or } 4 \times \frac{1}{2} = 2$$

Show your thinking.

5 **Use appropriate tools strategically.**


$$3 \times 2 = 6$$

Use the right tools.

6 **Attend to precision.**

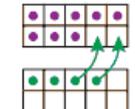
symbol: equals (the same as)

$$120 \text{ minutes} = 2 \text{ hours}$$

units of measure

Check your work.

7 **Look for and make use of structure.**

$$8 + 4 = 12$$


See the pattern or connection.

8 **Look for and express regularity in repeated reasoning.**



See the pattern or connection.

Parent Education/ Parent Survey

- District Elementary Math Parent Education Night: Dec. 9 2015
- Elementary Parent Coffees 2015-2016
- SSC/ PTA meeting presentations 2015-2016
- Parent Committee Learning Sessions April/May 2016
- Parent Survey February 2016

Parent/Teacher Committee

- Bring parents into the collaborative process early (May 2016)
- Committee application process (April-May 2016)
- Teacher application process (April-May 2016)



Assessment

- 1. Elementary Math SBAC data revealed that the majority of our students met or exceeded the standard. At 3rd grade, 83% of our students met or exceeded the benchmark in mathematics. In 4th grade, 86% of our students met or exceeded the benchmark. In 5th grade, 83% of our students met or exceeded the benchmark.
- 2. Continue to assess with local assessments aligned to common core standards (BOY, T1, T2 , EOY).
- 3. In the pilot year, unit assessments of the selected curricula will be used in addition to local and SBAC assessments.

Board Goal Alignment

- 1. OWNERSHIP FOR PERSONALIZED LEARNING.** To assure that *every* student's individual educational experience is engaging, challenging, purposeful, and ensures mastery of academic standards, the district will provide faculty and site leadership with the supports for designing, implementing, and evaluating teaching methods that will deepen conceptual knowledge, understanding, and applications for every child. (A1)
- 2. CONSISTENT HIGH QUALITY TEACHING AND LEARNING.** Ensuring all students have consistent and equitable opportunities and access to high quality educational programs and services aligned with PAUSD's vision and strategic plan, the district will foster conditions that provide a coherent district approach for aligning course curriculum frameworks, grading practices, homework expectations, project and testing schedules, and summative assessment instruments. (E2 and C2)

Strategic Plan Alignment

- **A1:** Differentiate the educational experience to effectively engage, appropriately challenge, and ensure mastery for every student
- **A2:** Ensure post-secondary preparation by implementing the Common Core State Standards, improving feedback for students, and increasing consistency in curriculum, grading, and homework across sites, grades, and courses
- **A3:** Significantly raise the achievement of historically underserved students by ensuring equity of preparation, access, and support from Pre-K to 12th grade
- **C2:** Encourage and support teachers to innovate, improve and adapt teaching methods and deepen pedagogical content knowledge
- **E4:** Promote a culture that supports innovation and adoption of effective educational strategies, to support student learning

Next Steps

- 1. Parent Survey: February 2016**
- 2. Curricula review discussion with math lead teachers**
- 3. Parent Committee Learning Sessions: April/May**
- 4. Parent and Teacher Adoption Committee selection**
- 5. Committee selection of top 2-3 curricula**
- 6. Establish Pilot Year specifics/guidelines/review process, timeline**
- 7. Order pilot materials**
- 8. Pilot Schedule begins Fall 2016**