



Common Core Math PUSD Board of Education

Math Task Force Update
January 13, 2015

+ Common Core Math

- Our PUSD Mathematics Teachers see implementation of the CCSS as an opportunity to re-vision (redesign and reframe) the mathematics programs fundamentally, in order to embrace the ambitious goal of reaching **all** students.
- Furthermore, they believe that such changes will enhance the already high quality of the courses for high achieving and advanced students.

+ Common Core Math

■ PUSD Math Task Force

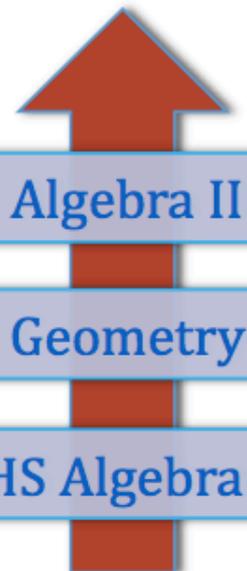
Parents	Teachers	Students	Staff
Julie Caskey	Sarah Kingston	Remy Afong	Randall Booker
Larry Hawkins	Tammy Medress	Polina Dorfman Su	Carol Cramer
Brad Kraetzer	Doyle O'Regan	Tobias Fischer	Brent Daniels
Carol Menz	Stephanie Roth	Madeline Malan	Ryan Fletcher
Stacy Merickel	Auban Willats	Isabella Schwartz	Ting Hsu Engelman
Sarah Pearson *		Lauren Young	Julie Moll
Sameer Srivastava			Ginna Myers
Andrea Swenson *			Cheryl Wozniak
Kelly Wiesbrock			

* PUSD Board Observer

+ PUSD Math Task Force

- We are charged by the PUSD Board of Education to research, review, and recommend PUSD Math Pathways to the Superintendent and the Board of Education for consideration and implementation in 2015-16.
 - Compression opportunity at PMS
 - Compression opportunity at PHS/MHS
 - Pathway to AP Calculus AB & BC
 - Multiple compression entry points

*Courses in higher level mathematics:
Pre-calculus, AP Calculus, AP Statistics, or courses designed for
career technical programs of study.*



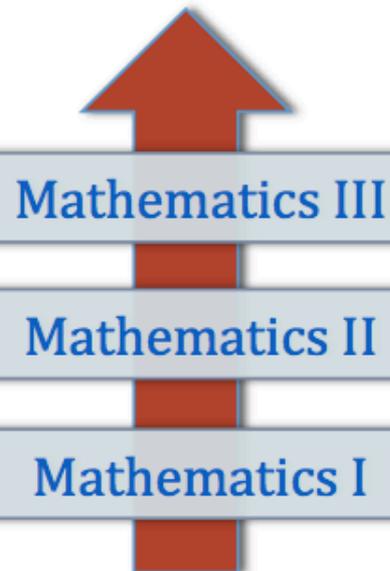
Algebra II

Geometry

HS Algebra I

TRADITIONAL Naming Pathway
(Typical *in* U.S.)

2 Algebra courses, 1 Geometry
course, with Probability and
Statistics interwoven



Mathematics III

Mathematics II

Mathematics I

INTEGRATED Naming Pathway
(Typical *outside* of U.S.)

3 courses that attend to Algebra,
Geometry, and Probability and
Statistics each year

+ What is an Integrated Approach?

- It's a sequence of three model courses, each of which includes algebra, geometry and statistics standards.
- In the real world, problems do not come in a box labeled "Algebra" or "Geometry." By using an "integrated" approach, students can decide what skills to call upon to solve a particular problem--no matter what the content area.
- Students can use their skills in algebra, geometry and statistics, depending on their analysis and approach to solving a problem.

+ What is the **same** between the Traditional and Integrated approaches?

- All three courses in both approaches include the **same content standards**.
- In other words, they have the same **entry** and **exit** point.
 - Additionally, there is attention to the Standards for Mathematical Practice and an emphasis on mathematical modeling in both approaches.



Secondary Math Concepts

Traditional Pathway

Course	Algebra I	Geometry	Algebra II
Conceptual Category	Number and Quantity		Number and Quantity
	Algebra		Algebra
	Functions		Functions
		Geometry	*
	Statistics and Probability		Statistics and Probability

*G-GPE.A.2 is in Algebra II.

Integrated Pathway

Core Math I	Core Math II	Core Math III
Number and Quantity	Number and Quantity	Number and Quantity
Algebra	Algebra	Algebra
Functions	Functions	Functions
Geometry	Geometry	Geometry
Statistics and Probability	Statistics and Probability	Statistics and Probability

+ Criteria for Determining Integrated or Traditional Pathway

- The MTF developed criteria for evaluating the traditional and integrated/international approaches and making a recommendation to the Board.
- Which approach would better support:
 - The shift in Focus, Coherence, and Rigor (as defined by the CCSS)?
 - the Needs of All Students?
 - the Math Practice Standards?
 - compression and expansion opportunities that best meet the needs of all students?
 - opportunities for differentiation and depth of knowledge levels for students?
- What does the research say?

Math Task Force Consensus

- The Math Task Force recently came to consensus that they will recommend the Common Core Integrated approach for secondary math courses.
 - Students are exposed to the Integrated approach K-8 and then again in advanced mathematics courses.
 - The majority of other countries, including the countries with the highest-performing math students, such as Singapore, Japan, Hong Kong, Chinese Taipei, and South Korea, follow the integrated model.
 - Research suggests that an integrated math curriculum has the potential to facilitate students' mathematical thinking more effectively than a traditional math curriculum especially in certain areas, such as conceptual understanding.
 - Allows for introducing the increasingly complex concepts in Algebra and Geometry over a period of several years, as students are more developmentally ready.
 - Lends itself to better course compression options (acceleration for advanced learners) more so than some traditional courses.



Questions?

- Parent Engagement Calendar
- Jan. 13th – 7pm PMS Family Math Night – PMS MPR
- Jan. 14th – 7pm PUSD School Board Meeting – CC Math Update
- Jan. 22nd – 7pm PUSD Parent Education Night – CC Math Update
 - Course Compression/Expansion Opportunities
- Jan. 27th – 7:30pm Education Speaker Series
 - Dan Meyer discusses Common Core Math and the importance and method of teaching students to formulate and solve problems rather than memorize and apply formulas.
- Feb. 11th – 7pm PUSD School Board Meeting – Math Task Force Presentation on Math Pathway Recommendations
- Mar. 11th – 7pm PUSD School Board Meeting – Math Task Force Presentation on Math Pathway Recommendations (2nd Reading)