

AUSD
ALAMEDA UNIFIED SCHOOL DISTRICT
Excellence & Equity For All Students

Upcoming Changes to Math Pathways

October 23, 2018



In Brief

Goal: Create a compressed 7th/8th grade math course for grade 7 to replace acceleration into Algebra 1

- ▶ Enables students to accelerate without missing critical mathematical content
- ▶ Replaces the current practice of students skipping two years of math from 6th grade (grades 7 and 8)
- ▶ Students will still be able to complete AP Calculus or AP Statistics by their senior year through additional acceleration opportunities in high school



How We Got Here

- ▶ Common Core State Standards (CCSS) shifted the content of Algebra 1 course
 - ▶ CCSS shifted Algebra 1 to 9th grade
 - ▶ CCSS shifted some previous Algebra 1 content standards into 7th and 8th grade
 - ▶ As a result, a student skipping math courses misses significant content
- ▶ Secondary Math Working Group began to look at data and options in 2016
 - ▶ Analyzed AUSD data, monitored student progress including impact on all students of creating multiple math tracks
 - ▶ Researched surrounding district policies to embrace common core
 - ▶ Compared relative math test performance
- ▶ Math education leaders advocate focusing on depth of understanding in middle school to build strong foundation for advanced math



From How One City Got it Right: Pathways that Work

“The middle-school courses provide the indispensable building blocks upon which a solid foundation is established. If any block is missing, the foundation is weakened. Skipping or accelerating through these courses would be harmful. The current program leads to much more success for students interested in STEM fields.”

10/9/18: By math education leaders at UC Berkeley, Stanford and Silicon Valley Math Initiative

From How One City Got it Right: Pathways that Work

“The top countries in education have shown that going deeper and having more rigor in middle school are the keys to later success in advanced math. Compared to high-performing countries, American math curricula are a “mile wide and an inch deep.” Students who want to go far in mathematics need a deeper, more rigorous treatment of mathematics.”

From How One City Got It Right: Pathways That Work, 10/9/18



Alameda's Current Pathway

6	6th		
7	7th (n=449)		Algebra 1 (n=103)
8	8th (n=308)	Algebra 1 (n=129)	Geometry (n=130)
9	Algebra 1	Geometry	Algebra 2
10	Geometry	Algebra 2	Precalculus
11	Algebra 2 / Statistics	Precalculus / Statistics	Calculus / Statistics
12	Precalculus / Statistics	Calculus / Statistics	Calculus / Statistics

CA Mathematics Framework, 2013

“Mastery of the algebra content, including attention to the Standards for Mathematical Practice, is fundamental for success in further mathematics and on college entrance examinations. Skipping over material to get students to a particular point in the curriculum will create gaps in students’ mathematical background.”



Current Issues

- ▶ Student classroom performance
- ▶ 11th grade CAASPP scores relatively flat
- ▶ Recent MDTP results show too many students starting Algebra 2 unprepared for higher level math work
- ▶ Reports from teachers and students
- ▶ Equity: over-tracking of students



Grade 9 Algebra 2 Grades

	Number of Students	% with A	% with A or B	% with C or lower	% with D or lower
2015-16	123	66%	91%	8%	3%
2016-17 (1st year of new textbook)	88	62%	86%	13%	6%
2017-18	107	57%	85%	15%	5%

Key Point: This is the performance of our accelerated math students.

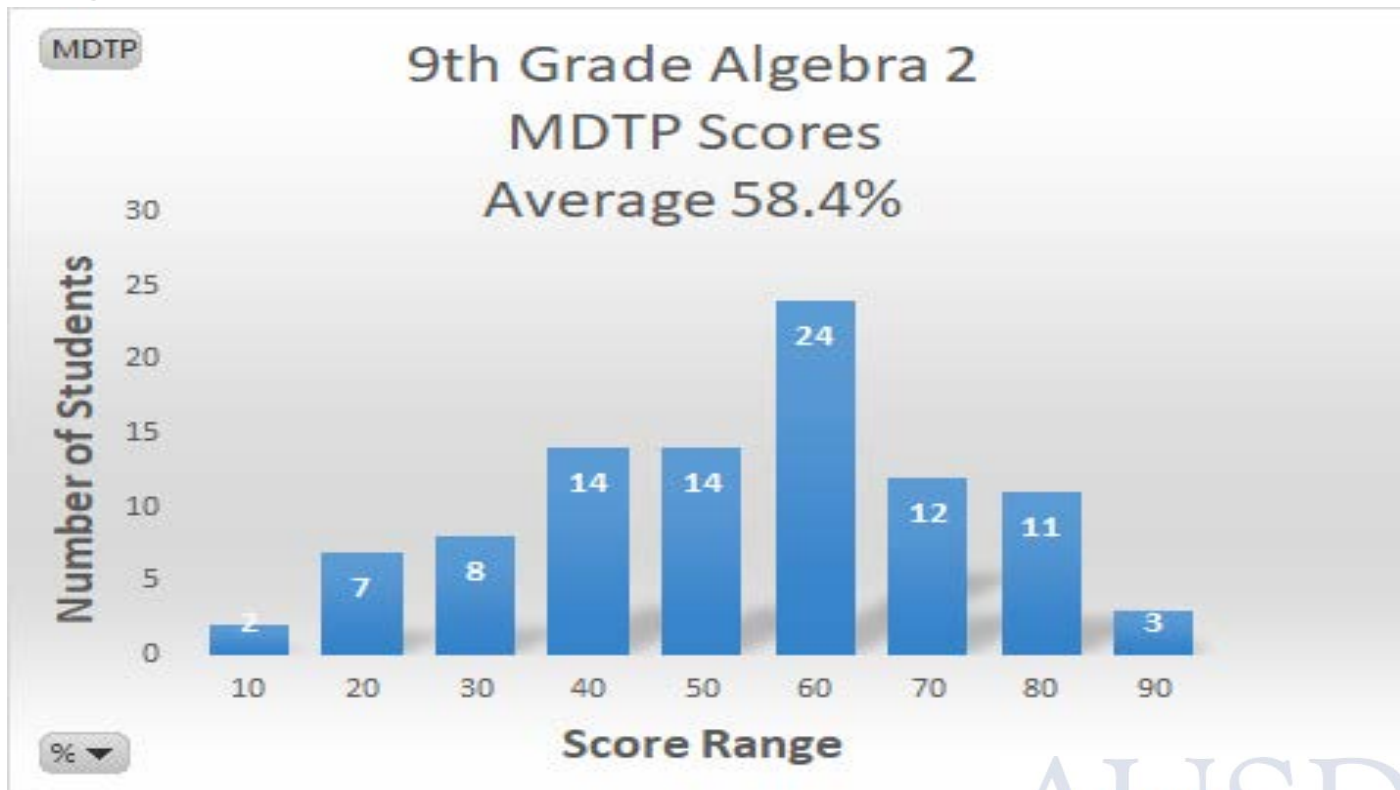


Relative 11th Grade Math CAASPP Performance

% of 11th grade students meeting or exceeding standards

	2015	2016	2017	2018
State	29	33	32	31
Alameda	48	52	50	52
San Francisco	50	53	54	50
Fremont	59	61	65	66
Castro Valley	46	46	52	55

Algebra 2 Readiness Data - Fall 2018





Planned new pathway

6	6th	
7	7th	7th and 8th Accelerated
8	8th	Algebra 1
9	Algebra 1	Geometry/Algebra 2
10	Geometry	Algebra 2 / Precalculus
11	Algebra 2 / Statistics	Precalculus / Calculus / Statistics
12	Precalculus / Statistics	Calculus / Statistics

Possible Acceleration Options at High School

- Geometry Summer School at COA
- Dual class enrollment in AUSD
- Compression Algebra 2 /Precalculus
- Compressed Calculus A-B-C

Instead of 3 pathways that are locked in early (middle school), this promotes multiple pathway options in high school for all.



Why Make a Change?

- ▶ Doing what is best for students
- ▶ Reflecting the intent of Common Core to build deeper understanding
- ▶ Skipping content can lead to struggles in upper level math
- ▶ Algebra and Geometry teachers use class time to reinforce missed content, taking time away from building concept mastery of current content
- ▶ Better alignment with best practices which have shown positive results when implemented in other districts
- ▶ Less tracking of students in middle school; acceleration options provided in high school



Rationale Behind New Pathway

- ▶ Students don't skip content, rather 7th and 8th are compressed into an accelerated course
- ▶ We will offer students additional acceleration options after grade 8 and in high school
- ▶ Students in AUSD have historically found multiple ways to accelerate into high level math courses; additional options will be added for those who want access all the way to Calculus BC or AP Statistics



7th and 8th Accelerated Course

Integrates 7th and 8th grade Common Core standards and California frameworks into cohesive units that focus on key topics including:

- ▶ Applying proportional reasoning to solve problems, including scale drawings and geometric constructions
- ▶ Formulating and reasoning about expressions and equations using rational number operations
- ▶ Modeling with linear equations, solving systems of equations
- ▶ Understanding and using functions to describe quantitative relationship
- ▶ Analyzing two- and three- dimensional figures using distance, angle, similarity and congruence, and understanding and applying the Pythagorean Theorem



Placement in Accelerated Math

In keeping with math best practices and recommendations in the CA CCSS for mathematics, we will:

- ▶ Use multiple objective academic measures of student performance for placement - Matrix
- ▶ Examine student placement data to ensure students who are qualified to progress in math based on performance are not held back
- ▶ Provide information and options for the student and parent/guardian to have input in placement decision

Efforts to Improve Math Student Outcomes

- ▶ After school cross-district collaboration meetings by course
- ▶ Constructing Meaning training tailored to secondary math teachers
- ▶ Diagnostic assessments for all math courses Grade 6 through Calculus
- ▶ Common benchmark assessments by course
- ▶ Math Coaching focused on Tier 1 instruction, data analysis, and general support
- ▶ Intervention programs for student support
- ▶ Creating a compression course of CCSS grades 7 and 8 for district 7th graders who qualify to replace acceleration into Algebra 1



Efforts to Improve Math Student Outcomes

- ▶ Middle Schools:
 - ▶ Wood: 6 week intervention cycle offered as regularly scheduled class for 6th, 7th, and 8th grades
 - ▶ Lincoln: 12 week trimester course for 6th grade
 - ▶ Encinal: No formal plans at this time
- ▶ High Schools:
 - ▶ Alameda: Intervention for Algebra 1 during Smart Period
 - ▶ Encinal: Algebra 1 and Algebra 2 boot camps offered after school
 - ▶ ASTI: Working to structure Khan Academy based remediation to provide individualized student support

Next Steps

- ▶ Schedule Community Information evenings
 - ▶ Updating website with middle school math course descriptions, pathways, placement process, and FAQs
 - ▶ Information meetings at Lincoln and Wood open to all
- ▶ Review, pilot, and select a compression course publisher/text by March 2019 aligned with current middle or high school curricula
- ▶ Explore acceleration options at the high school level
- ▶ Finalize matrix for placement into compression course

Questions