



Secondary Math Program: Moving Towards an Integrated Pathway

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Agenda

1. Goals and Vision
2. Developments in Math
3. Math Performance and Student Voice
4. Next Steps

District Goals

1. Increase overall math performance
2. Have students make meaning with mathematics and see it in real life contexts
3. Ensure access and pathways to higher level math classes
4. Increase numbers of underrepresented students in higher level math classes

AUSD's Math Instructional Vision

Our goal is to develop our students' abstract and quantitative reasoning abilities, and their ability to communicate their thinking, as they master rigorous, grade-level mathematics.

To do this, our instruction needs to center effective math teaching practices, including meaningful tasks that promote reasoning and problem solving, academic discourse around purposeful questions, and connecting multiple mathematical representations.

[AUSD Secondary Math Instructional Guidance 2022](#)

AUSD's Vision in the Classroom

- Students engage with peers in problem-based lessons structured around core ideas
- Teachers provide instruction that develops student reasoning and problem solving skills through meaningful interactions and mathematical discourse
- Teachers lead students to synthesize and consolidate understanding in the context of formal mathematics and academic vocabulary through key closure routines

Current AUSD Math Pathway

6th	7th	8th	9th	10th	11th	12th
Math 6	Math 7	Algebra 1*	Geometry	Algebra 2	Precalculus or Statistics	Calculus or Statistics
		Math 8	Algebra 1	Geometry	Algebra 2	Precalculus or Statistics

**8th grade Algebra 1 is the only acceleration point*

New AUSD Math Pathway

6th	7th	8th	9th	10th	11th	12th
Math 6	Math 7	Integrated 1	Integrated 2	Integrated 3	Precalculus	AP Calculus AB or AP Statistics
				Integrated 3 with Precalculus <i>compacted</i> (new course for 2025-26)	AP Calculus AB or AP Statistics	AP Calculus BC or AP Statistics
		Math 8	Integrated 1	Integrated 2	Integrated 3	Precalculus or Statistics
					Integrated 3 with Precalculus <i>compacted</i> (new course for 2025-26)	AP Calculus AB or AP Statistics

New course combining Integrated 3 and Precalculus standards will be second option for acceleration to be offered in 2025-2026

The Integrated Pathway

- The Integrated and Traditional pathways are outlined in the California's common core standards and math framework
- They are identical in terms of content, A-G requirements, and college admissions
- The only difference is the order of the units of study
- Students benefit as they don't have a year gap between Algebra 1 and Algebra 2
- Rigor in our math classrooms depends on teachers' instructional practices and our curriculum, not the pathway

A Brief Recent History of AUSD Math

- PreCovid
 - Dated math materials
 - Teachers developing AUSD Math Instructional Best Practices
 - SVMl Consortium
- 2020 - 2021(during distance learning)
 - MS adoption process

A Brief Recent History of AUSD Math, cont...

- 2021 - 2022
 - MS teachers piloted 3 leading curriculums
 - Math Task Force formalized AUSD Secondary Math Instructional Guidance
 - First 2-day Summer Math Institute focused on best practices, math modeling software, and key standards articulation

A Brief Recent History of AUSD Math, cont...

- 2022 - 2023
 - MS implements Carnegie Learning math with professional learning and collaboration support
 - HS adoption committee began curriculum discovery process
 - SVMl coaching at AHS and EHS
 - AUSD awarded Anti Bias grant focused on Algebra 1 success for underrepresented students
 - Summer Algebra Recovery program
 - AUSD/SVMl 3-day Institute, 16 teachers explored transformative teaching practices to support student success

A Brief Recent History of AUSD Math, cont...

- 2023 - 2024
 - Curriculum training for 14 pilot teachers
 - 2-day collaboration for 8 MS teachers to connect the new math framework, the standards, and the curriculum
 - HS pilot included 14 teachers and 250+ students
 - Surveyed 1,000+ secondary math students
 - Wednesday PLCs devoted to math

AUSD Math Testing Performance

- SBAC performance in the top 25% of districts in the state
- Have not recovered to pre-pandemic levels
- In 2015 - 2019 performance was essentially flat
- Continue to experience a drop from 8th grade to 11th grade

Student Voices

- Surveyed secondary math students across the district in February/March
- 1,053 responses, 587 middle school, and 466 high school
- Asked questions about their experience in their math classroom, their curricular materials, and their beliefs and feelings about math
- Evidence that the teachers, the instructional practices, and the pilot curriculum are having a positive impact on students

Survey of Secondary Math Students

Beliefs and Feelings about Math	% of students responding agree/strongly agree with the statement		
	Middle School n = 587	High School Pilot n = 256	HS Traditional n = 238
I'm learning math this year	78	82	65
I enjoy my math class	34	62	37
I am doing well on quizzes and tests	70	72	41
I try my best	78	81	67
My teacher cares about my learning	74	92	76

Survey of Secondary Math Students

Focal Instructional Strategies	% of students responding that this happens in their classroom often or always		
	Middle School n = 587	High School Pilot n = 256	HS Traditional n = 238
Collaborative group work	42	88	50
Teacher explains the math to the whole class	82	89	81
Academic discourse routines	49	81	54
Synthesis and closure routines	38	60	38

Move to the Integrated Math Pathway

- Request for investigating Integrated Pathway came from teachers in the pilot
- Committee summarized research and implementation considerations and shared with all high school math teachers
- Surveyed high school math teachers, 13 of 16 who responded indicated they supported adopting an integrated pathway

What is the Integrated Pathway?

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How Integrated Pathway Benefits Students

- Research shows spiraling provides more time for students to consolidate and deepen their understanding
- Students benefit as they don't have a year gap between Algebra 1 and Algebra 2
- Students spend more time in Integrated 1 connecting linear functions with real world applications which develops a stronger conceptual foundation and problem solving skills
- The new California Math Framework highlights the need for student proficiency in data, probability, and statistics. These are woven throughout the Integrated Pathway

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Implementation of the Integrated Pathway

- No impact on master schedule next year except name changes
- No impact on student placement next year
 - Algebra 1  Integrated 1
 - Geometry  Integrated 2
 - Algebra 2  Integrated 3
- Teacher committee will design the compacted Integrated 3 / Precalculus class during the 2024-25 school year for introduction in 2025-26

Next Steps

- More communication about proposed new curriculum with students and families at the Community Curriculum Advisory Committee meeting on May 2, 6:00-7:30 pm, via teams
- Adoption Committee will present their recommendations to the Board on May 14, 2024

Board Discussion