Annual Mathematics Placement Update for 9th Grade and TK-12 Vision for Math Learning

February 12, 2019

Pleasanton Unified School District
**Board of Education Meeting**

Background: 9th Grade Math Placement

[Senate Bill 359](), Mitchell

California Mathematics Placement Act of 2015

- Calls to "develop and adopt… a fair, objective, and transparent mathematics placement policy for pupils entering grade 9 with specified elements…"

High School Mathematics Pathways

8th Grade	9th Grade	10th Grade	11th Grade	12th Grade

Pathway 1: Math 8 → Algebra I → Math II → Math III → Math IV

Geometry, Algebra II (2 years of math in 3 years)
UC and CSU approved

Algebra I → Geometry → Algebra II → PreCalc

Algebra I → Geo. and Alg II: Course 1 → Alg II & PreCalc. Course 2 → Calc, AP Calc AB/BC

Geometry, Algebra II & PreCalculus is 3 years of math in 2 years

Pathway: Algebra I → Geometry or Honors → Alg II or Honors → PreCalc. or Honors → AP Calc AB/BC or Math Analysis

Pathway: Honor Geometry → Honors Alg II → Honors PreCalc → AP Calc BC → Math Electives (see high school program guide for course offerings)

Data Review

1. 9th Grade Course Enrollment

2. Beginning-of-the-Year Algebra I Diagnostic

3. MAP Growth (Northwest Evaluation Association/Measures of Academic Progress)

4. First time Algebra I passage rate

# Math Enrollment and Diagnostic Assessment Overview
9th Grade

Assessment Details:

- First 20 school days
- Algebra and/or geometry skills
- Potential schedule changes based on mastery of skills
- Students <u>will either take</u> the beginning-of-the-year (BoY) diagnostic assessment or NWEA/MAP (Northwest Evaluation Association/ Measures of Academic Progress)

Average Percent 9th Grade Students Enrolled		
	2017-18	2018-19
Algebra I	55.0% (665)	54.8% (675)
Geometry	15.0% (182)	14.5% (181)
Honors Geometry	6.6% (80)	9.4% (118)
Other math courses (Algebra II, Hon Algebra II, Hon Pre-Calculus, Pre-Calculus, and AP Calculus BC)	23.4% (283)	21.3% (271)

# Districtwide Demographics
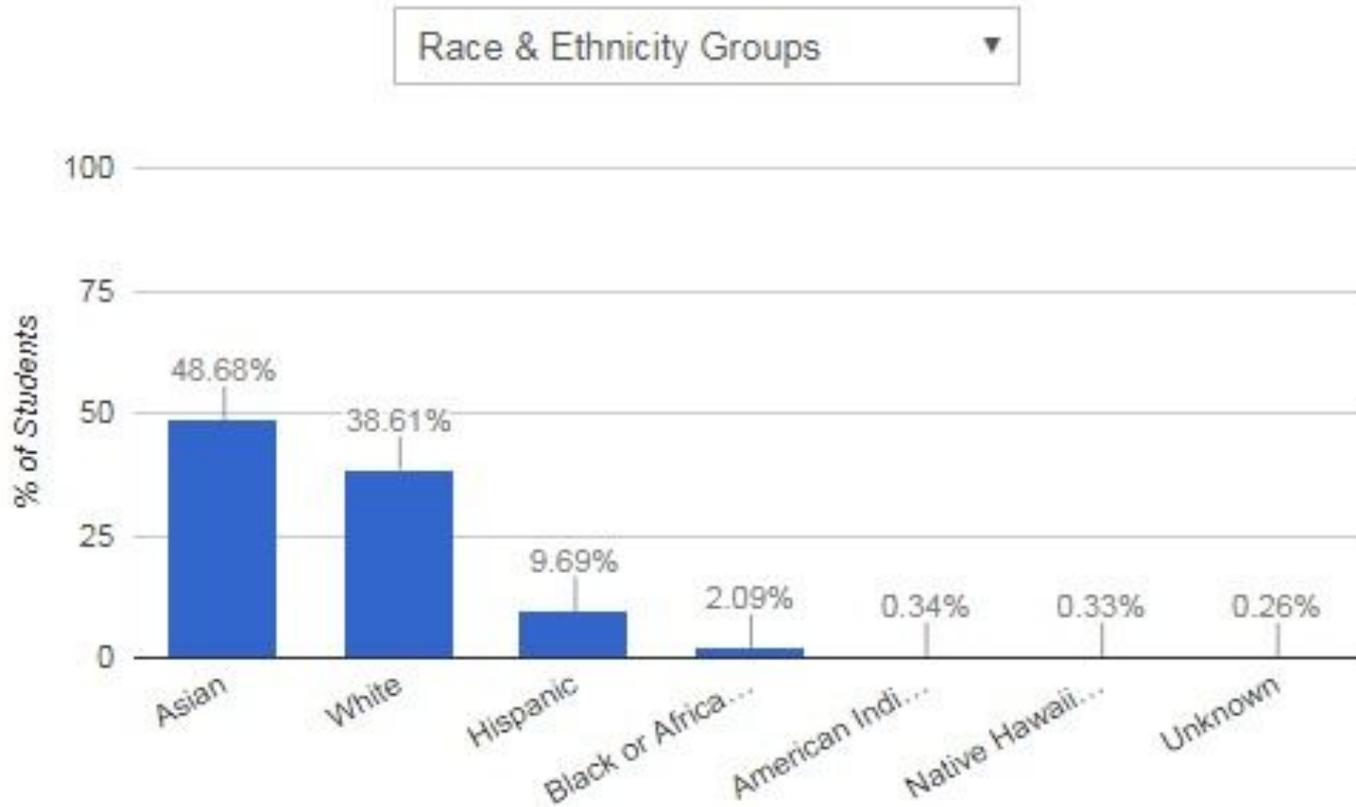
Students Groups:
9.95%   English Learners
10.24% Students with Disabilities
10.33% Socio-Econmically Disadvantaged

Algebra I BoY Diagnostic Assessment Summary

Course Enrollment

Breakdown by Student Groups
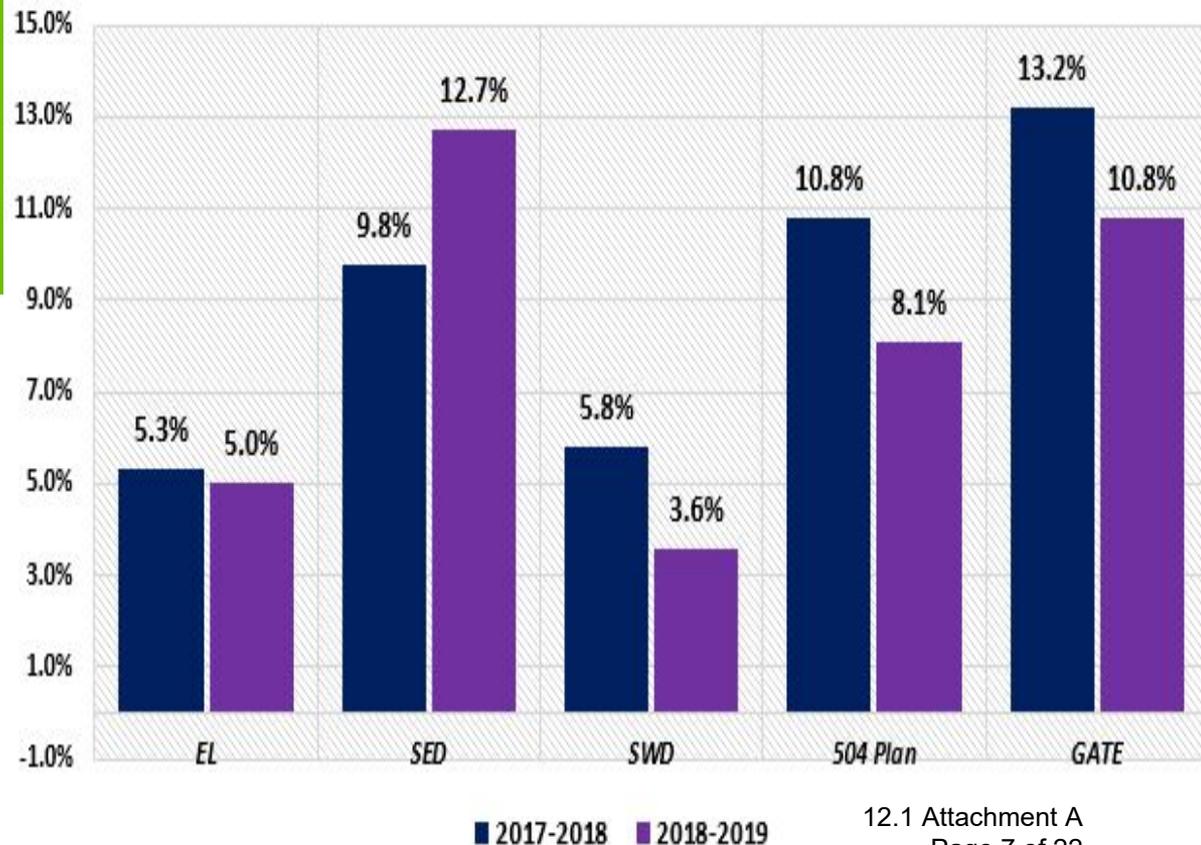
	2017-2018		2018-2019	
	N	%	N	%
All Students	1007	100%	989	100%
EL	53	5.26%	49	4.95%
SED	99	9.83%	126	12.74%
SWD	58	5.76%	36	3.64%
504 Plan	109	10.82%	80	8.09%
Gifted And Talented	133	13.21%	107	10.82%

Algebra I BoY Diagnostic Assessment Summary

Course Enrollment

Breakdown by Race/Ethnicity
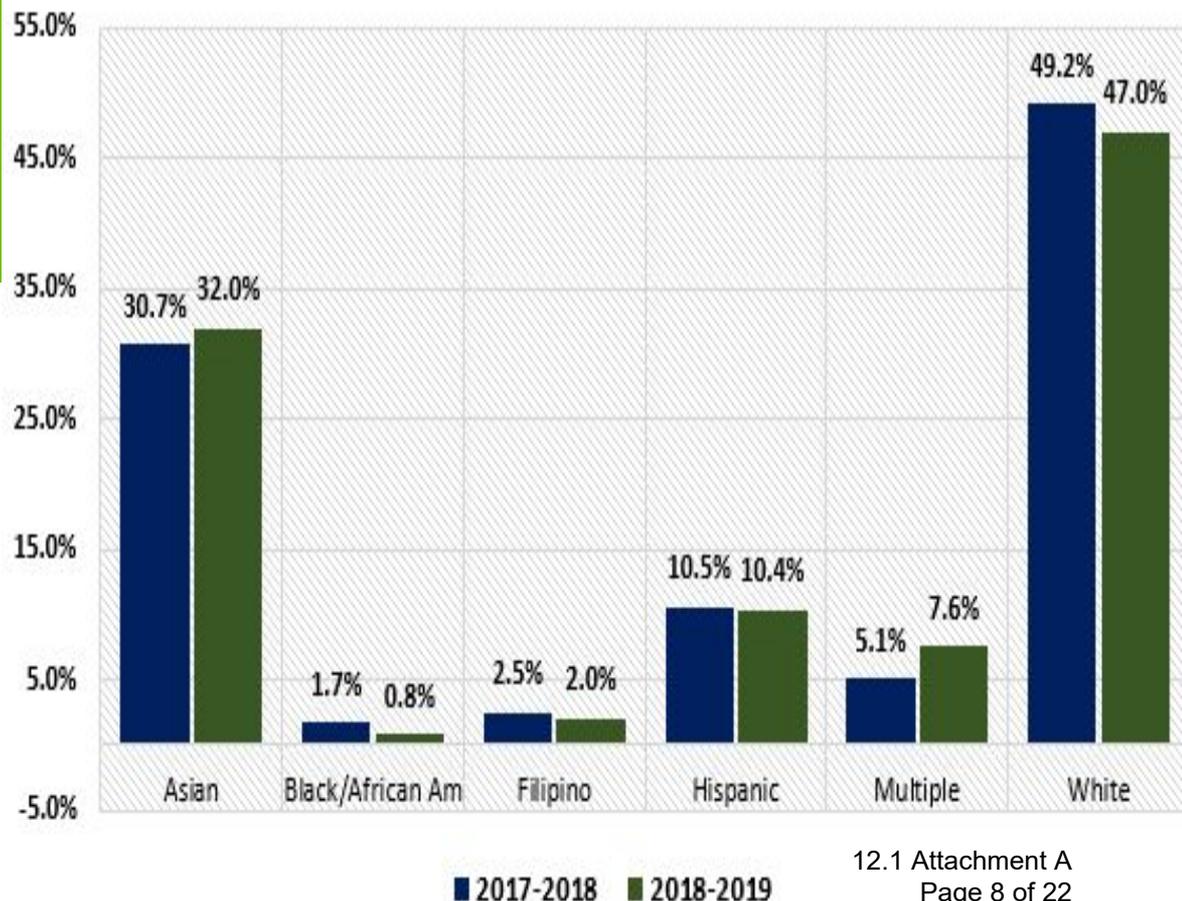
Legend: ■ 2017-2018 ■ 2018-2019

	2017-2018		2018-2019	
	N	%	N	%
All Students	1007	100%	989	100%
Asian	309	30.69%	316	31.95%
Black/African Am	17	1.69%	8	0.81%
Filipino	25	2.48%	20	2.02%
Hispanic	106	10.53%	103	10.41%
Multiple	51	5.06%	75	7.58%
White	495	49.16%	465	47.02%

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Algebra I BoY Diagnostic Assessment Summary (continued)
Student Enrollment After Algebra I

Breakdown by Student Groups

What happens after 9th grade?	# of Students Enrolled in Math 2018-2019	EL		SED		SPED		504 Plan		GATE	
		N	%	N	%	N	%	N	%	N	%
All Students (in 10th grade)	665	35	5.3%	80	12.0%	34	5.1%	77	11.6%	40	6.0%
Algebra I	5	2	40.0%	3	60.0%	1	20.0%	1	20.0%		0.0%
Algebra II	23	2	8.7%		0.0%		0.0%	3	13.0%		0.0%
Geometry	325	11	3.4%	36	11.1%	17	5.2%	41	12.6%	15	4.6%
Geometry-Algebra II - Crse 1	152	10	6.6%	14	9.2%		0.0%	6	3.9%	21	13.8%
Hon Algebra II	6		0.0%		0.0%		0.0%		0.0%	1	16.7%
Hon Geometry	17		0.0%	1	5.9%		0.0%	1	5.9%	1	5.9%
Left the District	31	2	6.5%	4	12.9%	1	3.2%	6	19.4%		0.0%
Math II	106	8	7.5%	22	20.8%	15	14.2%	19	17.9%	2	1.9%

Algebra I BoY Diagnostic Assessment Summary (continued)

Student Enrollment After Algebra I

Breakdown by Race/Ethnicity

What happens after 9th grade?	# of Students Enrolled in Math 2018-2019	Asian		Black/African Am		Filipino		Hispanic		Multiple		White	
		N	%	N	%	N	%	N	%	N	%	N	%
All Students (in 10th grade)	665	149	22.4%	14	2.1%	22	3.3%	84	12.6%	33	5.0%	363	54.6%
Algebra I	5		0.0%		0.0%		0.0%	2	40.0%		0.0%	3	60.0%
Algebra II	23	11	47.8%		0.0%		0.0%	2	8.7%		0.0%	10	43.5%
Geometry	325	63	19.4%	10	3.1%	7	2.2%	39	12.0%	14	4.3%	192	59.1%
Geometry-Algebra II - Crse 1	152	55	36.2%	1	0.7%	7	4.6%	11	7.2%	9	5.9%	69	45.4%
Hon Algebra II	6	5	83.3%		0.0%	1	16.7%		0.0%		0.0%		0.0%
Hon Geometry	17	5	29.4%		0.0%		0.0%		0.0%	1	5.9%	11	64.7%
Left the District	31	3	9.7%		0.0%	1	3.2%	4	12.9%	3	9.7%	20	64.5%
Math II	106	7	6.6%	3	2.8%	6	5.7%	26	24.5%	6	5.7%	58	54.7%

Algebra I Passage Rate in 2016-2017

First time passage rate by demographic student groups

Courses include:

Math 8/Algebra I, grade 7

Algebra I, grade 8

Algebra I, high school

	# of Students Enrolled	Did not pass Algebra I		Passed Algebra I	
		N	%	N	%
All Students (Enrolled in AlgI)	1197	149	12.45%	1048	87.55%
Grade 6	6		0.00%	6	100.00%
Grade 7	206	5	2.43%	201	97.57%
Grade 8	265	25	9.43%	240	90.57%
Grade 9	675	101	14.96%	574	85.04%
Grade 10	22	7	31.82%	15	68.18%
Grade 11	10	7	70.00%	3	30.00%
Grade 12	13	4	30.77%	9	69.23%
Male	563	88	15.63%	475	84.37%
Female	634	61	9.62%	573	90.38%
Am Indian/Alskn Nat	3		0.00%	3	100.00%
Asian	425	29	6.82%	396	93.18%
Black/African Am	10	2	20.00%	8	80.00%
Filipino	31	3	9.68%	28	90.32%
Hispanic	118	28	23.73%	90	76.27%
Multiple	43	2	4.65%	41	95.35%
Nat Hwiin/Othr Pac Islndr	6	1	16.67%	5	83.33%
White	561	84	14.97%	477	85.03%
NOT EL	1156	138	11.94%	1018	88.06%
EL	41	11	26.83%	30	73.17%
NOT SED	1113	122	10.96%	991	89.04%
SED	84	27	32.14%	57	67.86%
NOT SWD	1154	137	11.87%	1017	88.13%
SWD	43	12	27.91%	31	72.09%

Algebra I Passage Rate in 2017-2018

First time passage rate by demographic student groups

	# of Students Enrolled	Did Not Pass Algebra I		Passed Algebra I	
		N	%	N	%
All Students (Enrolled in Alg I)	1047	94	8.98%	953	91.02%
Grade 07	4		0.00%	4	100.00%
Grade 08	288	6	2.08%	282	97.92%
Grade 09	692	46	6.65%	646	93.35%
Grade 10	36	23	63.89%	13	36.11%
Grade 11	21	15	71.43%	6	28.57%
Grade 12	6	4	66.67%	2	33.33%
Male	535	62	11.59%	473	88.41%
Female	512	32	6.25%	480	93.75%
Am Indian/Alskn Nat	1	1	100.00%		0.00%
Asian	331	13	3.93%	318	96.07%
Black/African Am	16	2	12.50%	14	87.50%
Filipino	25	1	4.00%	24	96.00%
Hispanic	117	31	26.50%	86	73.50%
Multiple	54	4	7.41%	50	92.59%
Nat Hwiin/Othr Pac Islndr	3		0.00%	3	100.00%
White	500	42	8.40%	458	91.60%
Not EL	980	70	7.14%	910	92.86%
EL	67	24	35.82%	43	64.18%
Not SED	933	65	6.97%	868	93.03%
SED	114	29	25.44%	85	74.56%
Not SWD	984	74	7.52%	910	92.48%
SWD	63	20	31.75%	43	68.25%

Observations:

Since 2016-17, Algebra I rate passage rates: increased from 87% to 91%

Notable increases by student groups
- Overall 9-12 Grades, +3%
- Overall 9th Grade, +8%

Notable decreases by student groups
- Overall 10th grade, -32%
- Am Indian/Alskan Nat, -100% (1 student)

Summary of Key Findings

At Foothill High School, six students changed math placement based on BoY Assessment (5 students from Algebra I to Geometry and 1 student from Geometry to Algebra II)

Due to significantly lower passage rates in grades 10-12, explore earlier intervention strategies

Disproportionality of student groups passing Algebra I in 9th grade:

- ❖ Black/African American (87%)
- ❖ English Learners (64%)
- ❖ Hispanic (73%)
- ❖ Social Economically Disadvantaged (75%)
- ❖ Students with Disabilities (68%)

Local Control & Accountability Plan (LCAP) Supported Outreach

Intervention Specialists focusing on math support for identified students

Before and after school tutoring support

Summer school blended learning math classes

Mathematics Integration Specialist providing professional development and instructional coaching through the Math Cohort

Algebra I Intervention Class Pilot at Amador Valley and Foothill High Schools

Next Steps

1. Engage teachers, counselors, administrators, and parents/guardians in discussions regarding student math placement and academic performance

2. Further analysis of enrollment and student growth results
   a. Math II and special education courses
   b. NWEA MAP Growth assessment and PUSD BoY Diagnostic Assessment

3. Continue Algebra I cohort professional development and monitor effectiveness through qualitative feedback and student performance results

TK-12 Vision for Math Learning

Pleasanton Unified School District

Achievement
Partnerships
Communication
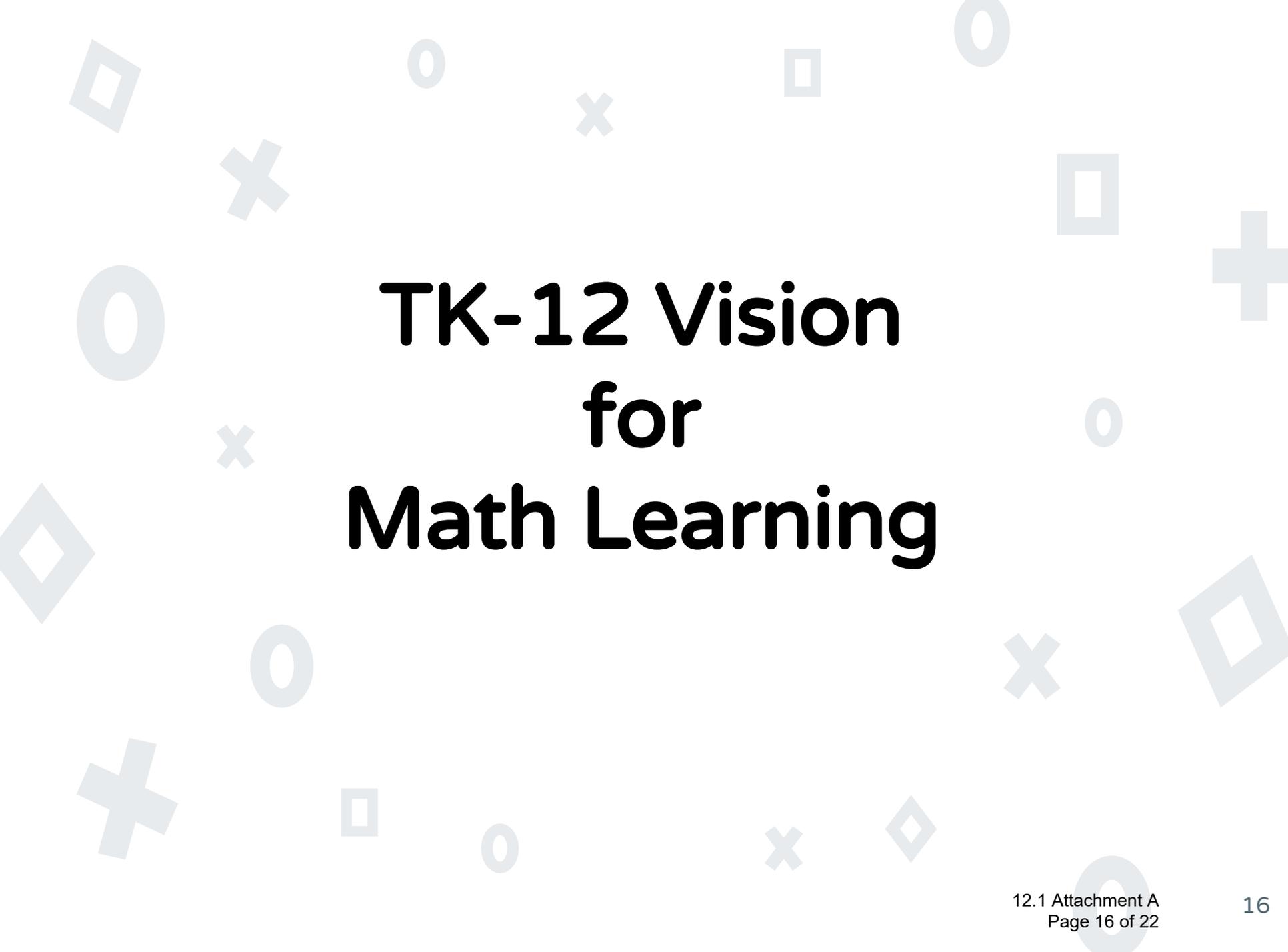
VISION *for* MATH LEARNING

EVERY student is "enthused about mathematics, sees the value and beauty of mathematics, and is empowered by the opportunities mathematics affords." (National Council of Teachers of Mathematics, 2016)

Students will…

Construct and critique **mathematical reasoning**	Persevere and develop a **growth mindset** with respect to mathematics	Solve **engaging mathematics tasks:** ○ Multiple access points ○ Multiple solution methods

Teachers will…

Grow as **mathematicians**	Utilize **Universal Design for Learning (UDL)** and Differentiated Instruction (DI) to meet the needs of all students	Use the **workshop model** to increase student engagement
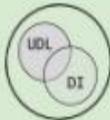
Our vision for math learning was developed by our mathematical experts, which is grounded in research-based practices along with the belief that we will maximize our student achievement by focusing on a few key areas.

Scope and Sequence Overview

The Five Dimensions of Powerful Classrooms

| The Content	Cognitive Demand	Equitable Access to Content	Agency, Authority and Identity	Formative Assessment
The extent to which classroom activity structures provide opportunities for students to become knowledgeable, flexible, and resourceful disciplinary thinkers. Discussions are focused and coherent, providing opportunities to learn disciplinary ideas, techniques, and perspectives, make connections, and develop productive disciplinary habits of mind.	The extent to which students have opportunities to grapple with and make sense of important disciplinary ideas and their use. Students learn best when they are challenged in ways that provide room and support for growth, with task difficulty ranging from moderate to demanding. The level of challenge should be conducive to what has been called "productive struggle."	The extent to which classroom activity structures invite and support the active engagement of all of the students in the classroom with the core disciplinary content being addressed by the class. Classrooms in which a small number of students get most of the "air time" are not equitable, no matter how rich the content: all students need to be involved in meaningful ways.	The extent to which students are provided opportunities to "walk the walk and talk the talk" – to contribute to conversations about disciplinary ideas, to build on others' ideas and have others build on theirs – in ways that contribute to their development of agency (the willingness to engage), their ownership over the content, and the development of positive identities as thinkers and learners.	The extent to which classroom activities elicit student thinking and subsequent interactions respond to those ideas, building on productive beginnings and addressing emerging misunderstandings. Powerful instruction "meets students where they are" and gives them opportunities to deepen their understandings.

Nearly 40 general education and special education teachers and administrators from grade 6 and grade 9 Algebra I are attending a series of six trainings.

Teacher Feedback

What are teachers saying about their cohort learning and collaboration? Learn more [here.](here)

12.1 Attachment A
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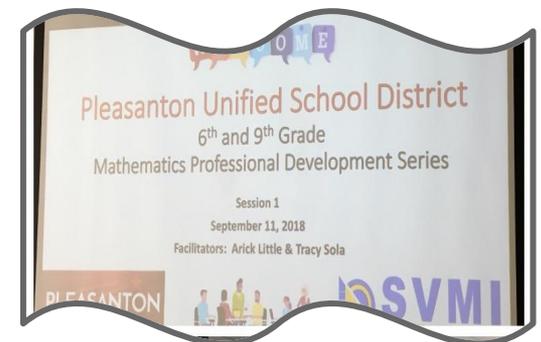
Thank You

For Reference

Pleasanton Unified School District's:

- Board Policy 6152.1

- Administrative Regulations 6152.1

- Equity and Diversity Resolution (2015.16.23)

- PUSD Mathematics Pathways for Grades 5-12

- Previous Board Communications

  - 12/2/18: Math 6 and Algebra I Cohort Update

  - 9/16/18: Math 6 and Algebra I Cohort Update

  - 8/24/18: PUSD hosts regional training with Silicon Valle Initiative

  - 8/17/18: TK-12 Professional Development

Glossary of Terms

1. African American (African Am)
2. American Indian and Alaskan Native (Am Indian/Alskan Nat)
3. Beginning-of-the-Year (BoY) Algebra I Diagnostic Assessment
4. English Learner (EL)
5. Local Control & Accountability Plan (LCAP)
6. Northwest Evaluation Association (NWEA)/Measures of Academic Progress (MAP Growth)
7. Not Hawaiian/ Other Pacific Islander (Not Hwiin/Othr Pac/Isndr)
8. Socio Economically Disadvantaged (SED)
9. Students with Disabilities (SWD)