

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

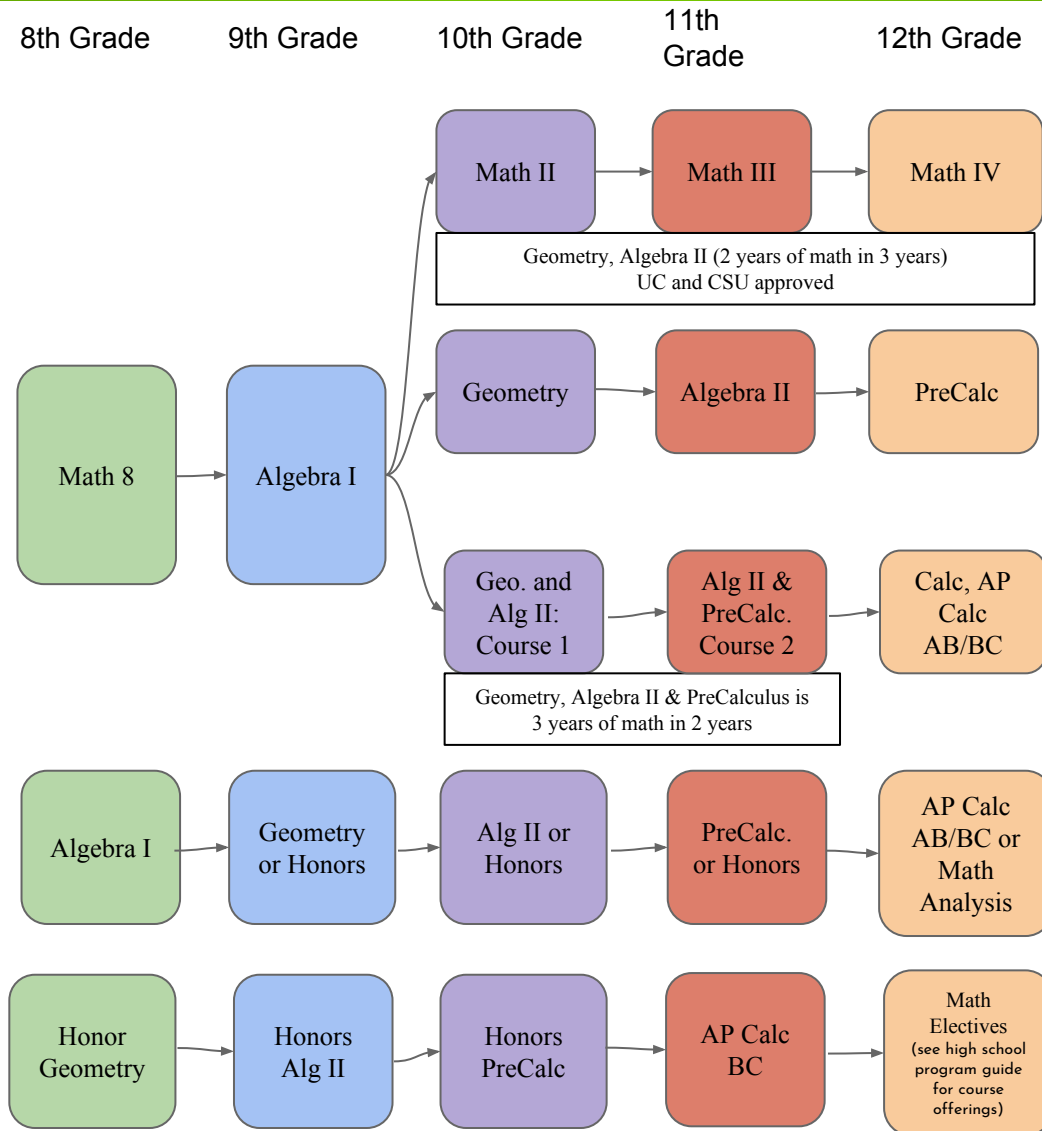
[Senate Bill 359](#), Mitchell

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



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

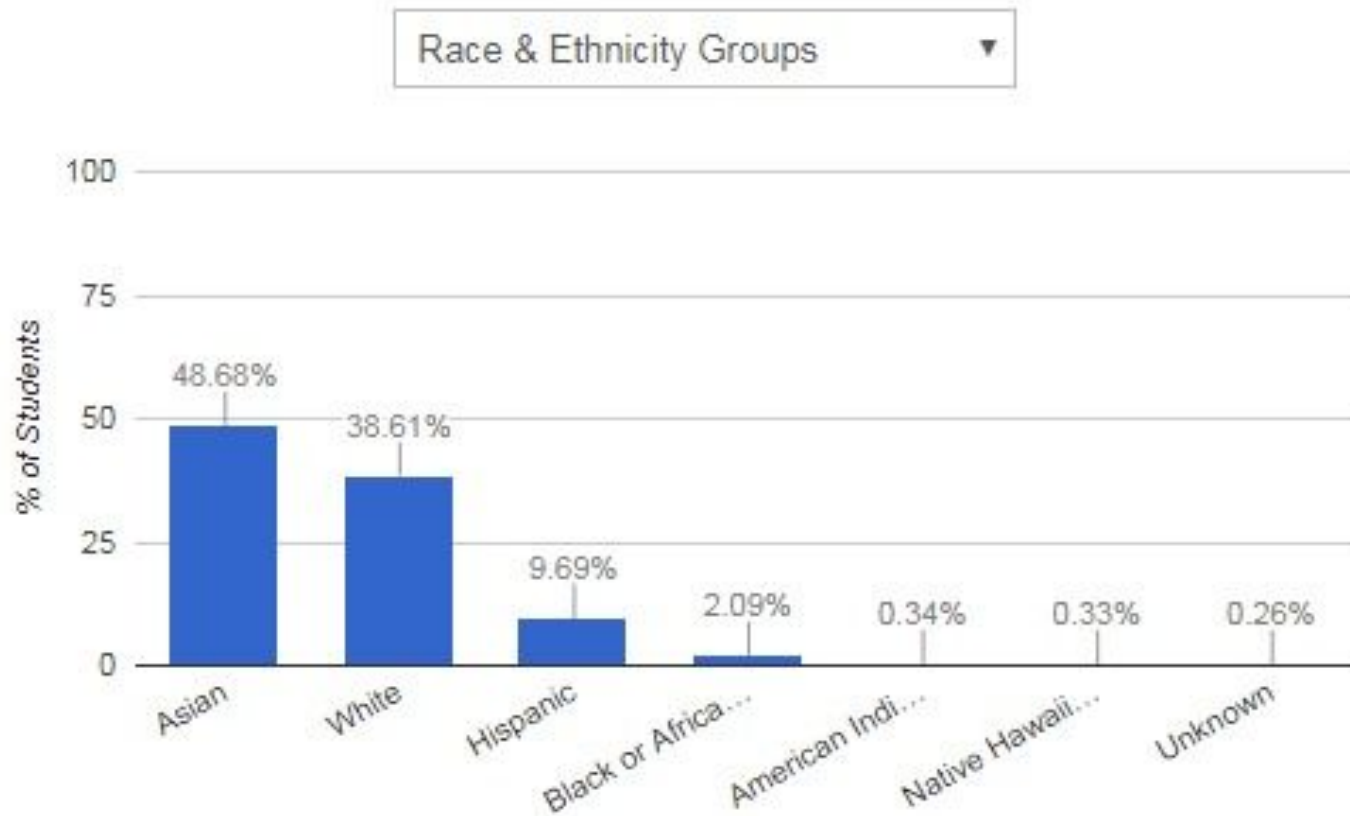
9th Grade

Assessment Details:

- First 20 school days
- Algebra and/or geometry skills
- Potential schedule changes based on mastery of skills
- Students will either take 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



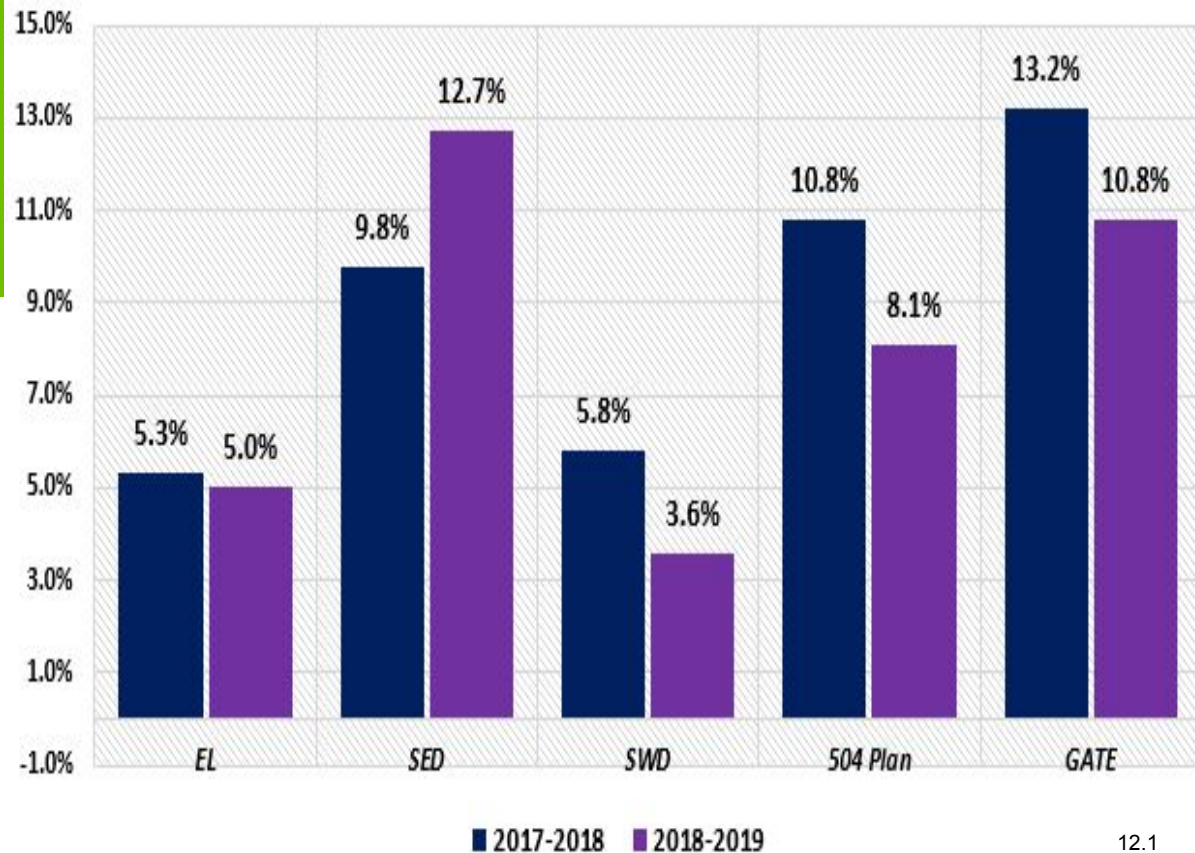
Students Groups:

9.95% English Learners
10.24% Students with Disabilities
10.33% Socio-Economically Disadvantaged

Algebra I BoY Diagnostic Assessment Summary

Course Enrollment

Breakdown by Student Groups



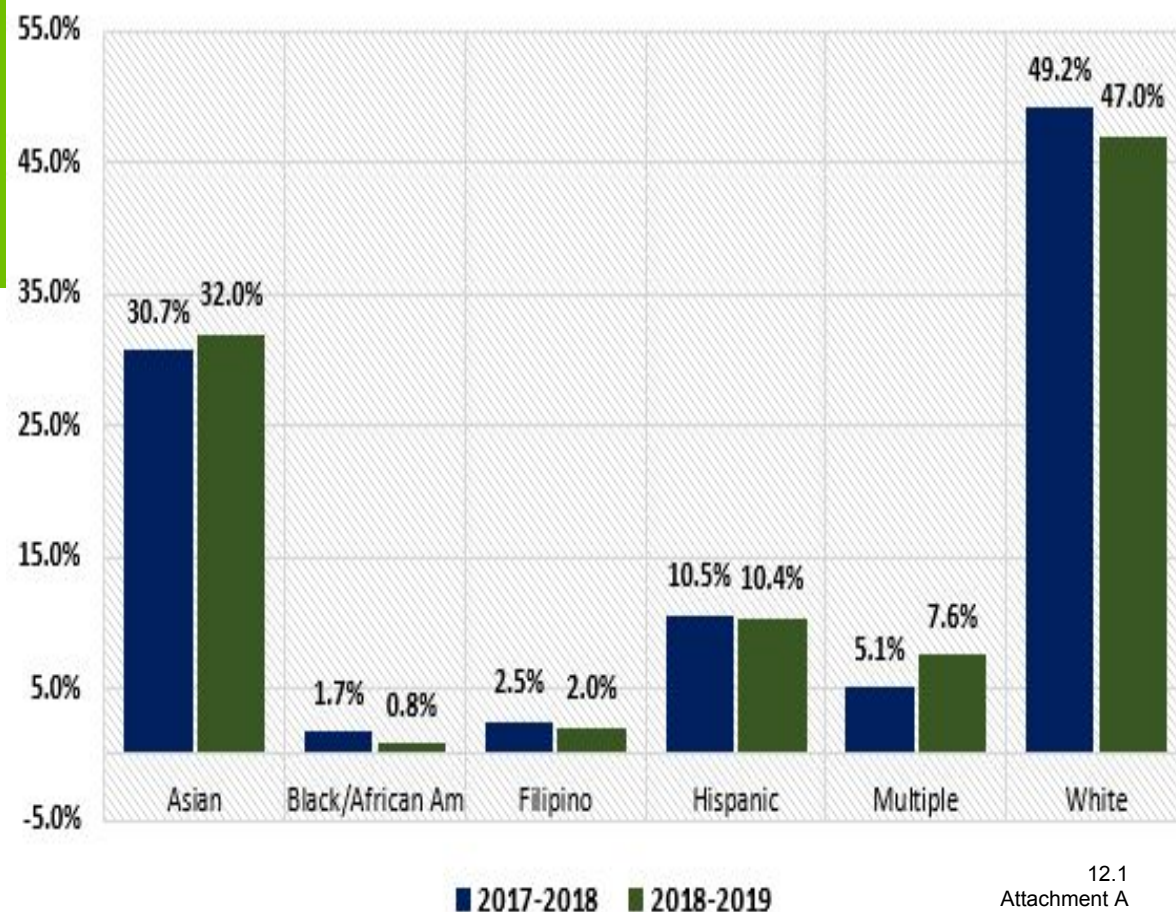
12.1
Attachment A
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| | 2017-2018 | | 2018-2019 | |
|----------------------------|-------------|-------------|------------|-------------|
| | N | % | N | % |
| All Students | 1007 | 100% | 989 | 100% |
| EL | 53 | 5.26% | 49 | 4.95% |
| SED | 99 | 9.83% | 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



12.1
Attachment A
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| | 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% |

Algebra I BoY Diagnostic Assessment Summary (continued)

Student Enrollment After Algebra I

Breakdown by Student Groups

| <i>What happens after 9th grade?</i> | # 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% |
| <i>Algebra I</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% |
| <i>Geometry</i> | 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% |
| <i>Math II</i> | 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

Courses include:

Math 8/Algebra I, grade 7

Algebra I, grade 8

Algebra I, high school

First time passage rate by demographic student groups

| | # of Students Enrolled | Did not passed 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

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/Alaskan Nat, -100% (1 student)

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

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



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

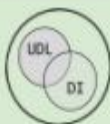


Solve **engaging**
mathematics tasks:
◦ Multiple access points
◦ Multiple solution methods

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

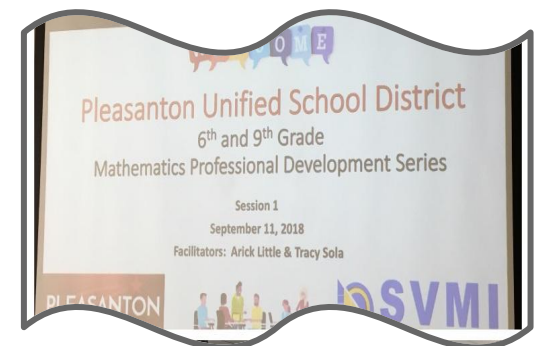
| The Content | Cognitive Demand | Equitable Access to Content | Agency, Authority and Identity | Formative Assessment |
|--|--|--|---|--|
| <i>The extent to which classroom activity structures provide opportunities for students to become knowledgeable, flexible, and resourceful disciplinary thinkers. Discussions are focused and coherent, providing opportunities to learn disciplinary ideas, techniques, and perspectives, make connections, and develop productive disciplinary habits of mind.</i> | <i>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."</i> | <i>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.</i> | <i>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.</i> | <i>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.</i> |

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](#).



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 Valley Initiative](#)
 - [8/17/18: TK-12 Professional Development](#)



Glossary of Terms

1. African American (African Am)
2. American Indian and Alaskan Native (Am Indian/Alaskan 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)