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K-12 & Higher Education Partnership

Student Success Through Intentional Interventions: “Accelerated Math”

The bottom of the slide features two logos. On the left is the logo for Diablo Unified School District, which includes a building, an American flag, and the text 'DIABLO UNIFIED SCHOOL DISTRICT'. On the right is the seal of The University of California, Merced, featuring a book and the text 'THE UNIVERSITY OF CALIFORNIA - MERCED'. A large blue arrow points from the top right towards the center, and a yellow arrow points from the bottom right towards the center.

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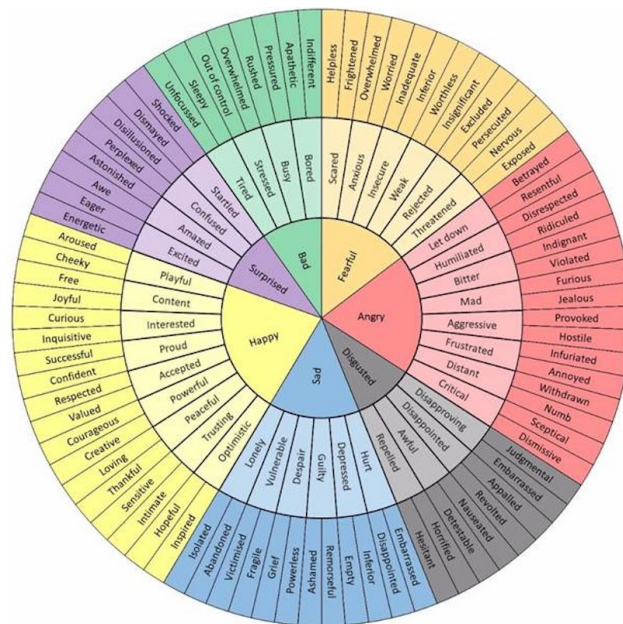
Presenters

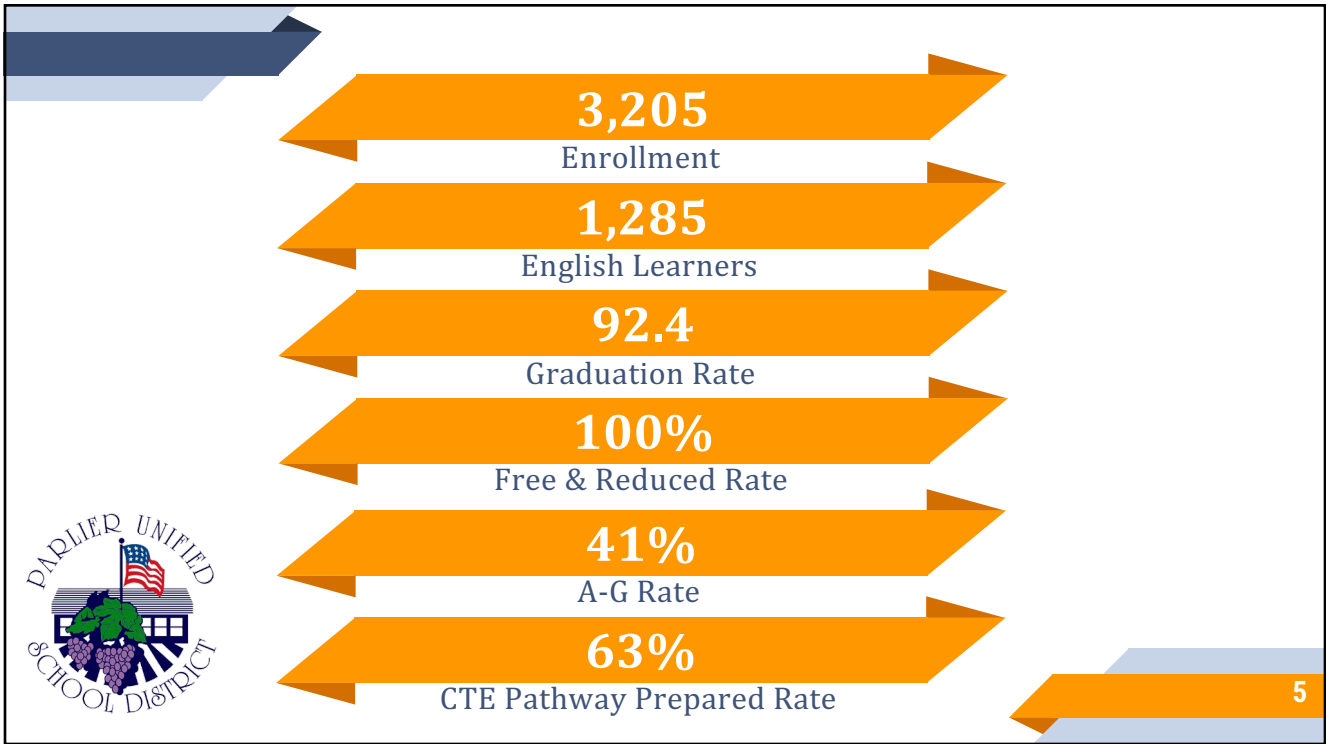


- Parlier Unified School District:
Superintendent **Dr. Rafael Iniguez**



- Center for Educational Partnerships:
Assistant Director of Program Improvement:
Ismael Serrano





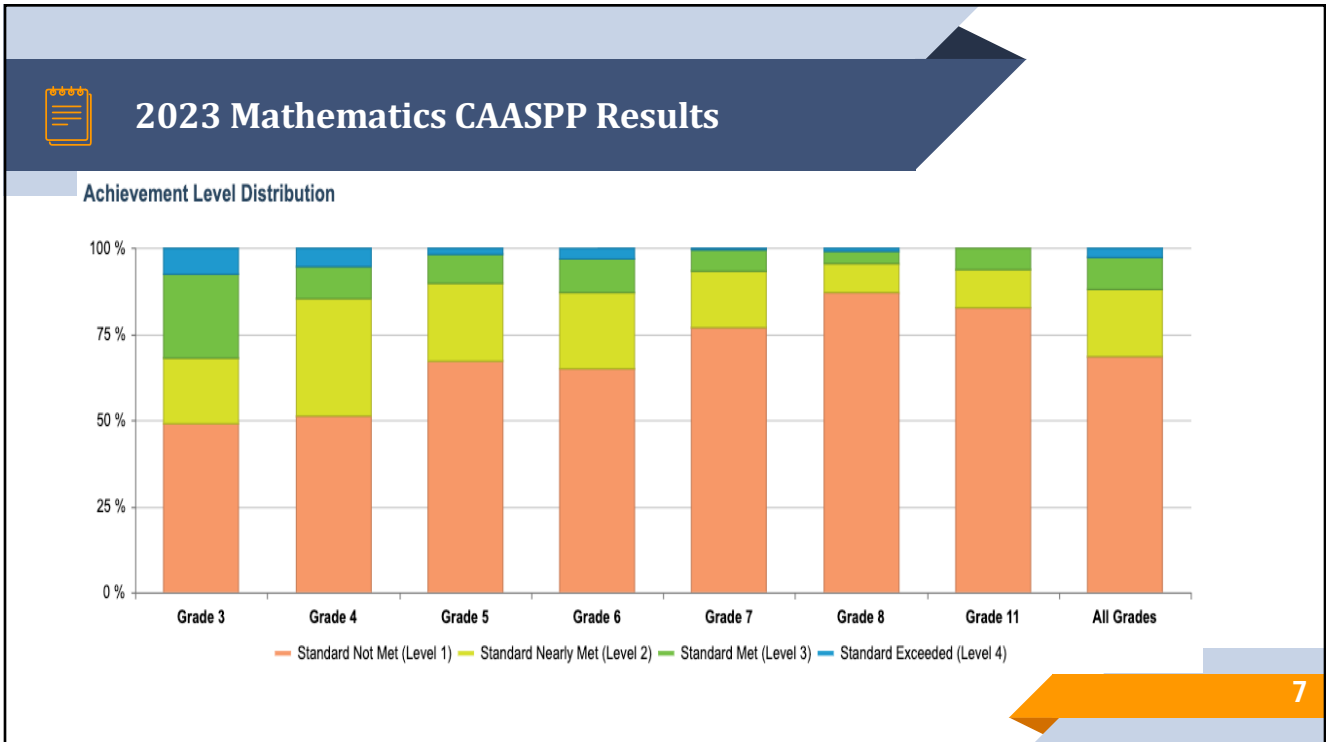
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**Unique Relationship That's
Build On Trust, But Driven By
Data & Research**

Measure What We Value 2024: A Parsec Education Summit

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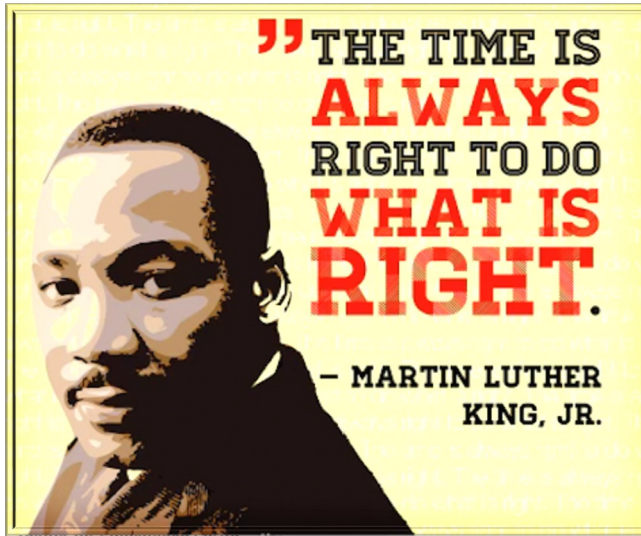
2023 Mathematics CAASPP Results

Performance Levels	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 11	All Grades
Standard Exceeded (Level 4)	7.63%	5.12%	1.85%	3.10%	0.40%	0.77%	0.00%	2.62%
Standard Met (Level 3)	24.15%	9.45%	8.15%	9.66%	6.05%	3.83%	6.18%	9.43%
Standard Nearly Met (Level 2)	19.07%	34.25%	22.96%	22.41%	16.53%	8.05%	11.27%	19.19%
Standard Not Met (Level 1)	49.15%	51.18%	67.04%	64.83%	77.02%	87.36%	82.55%	68.76%

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Martin Luther King Jr.

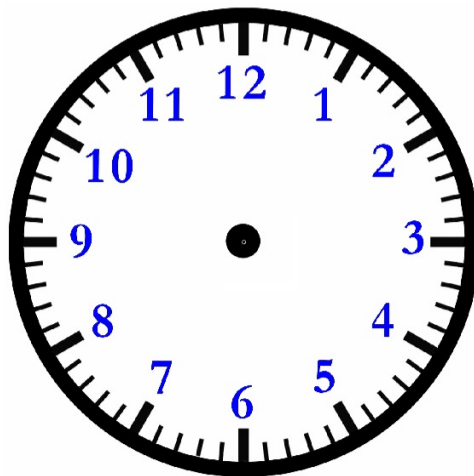


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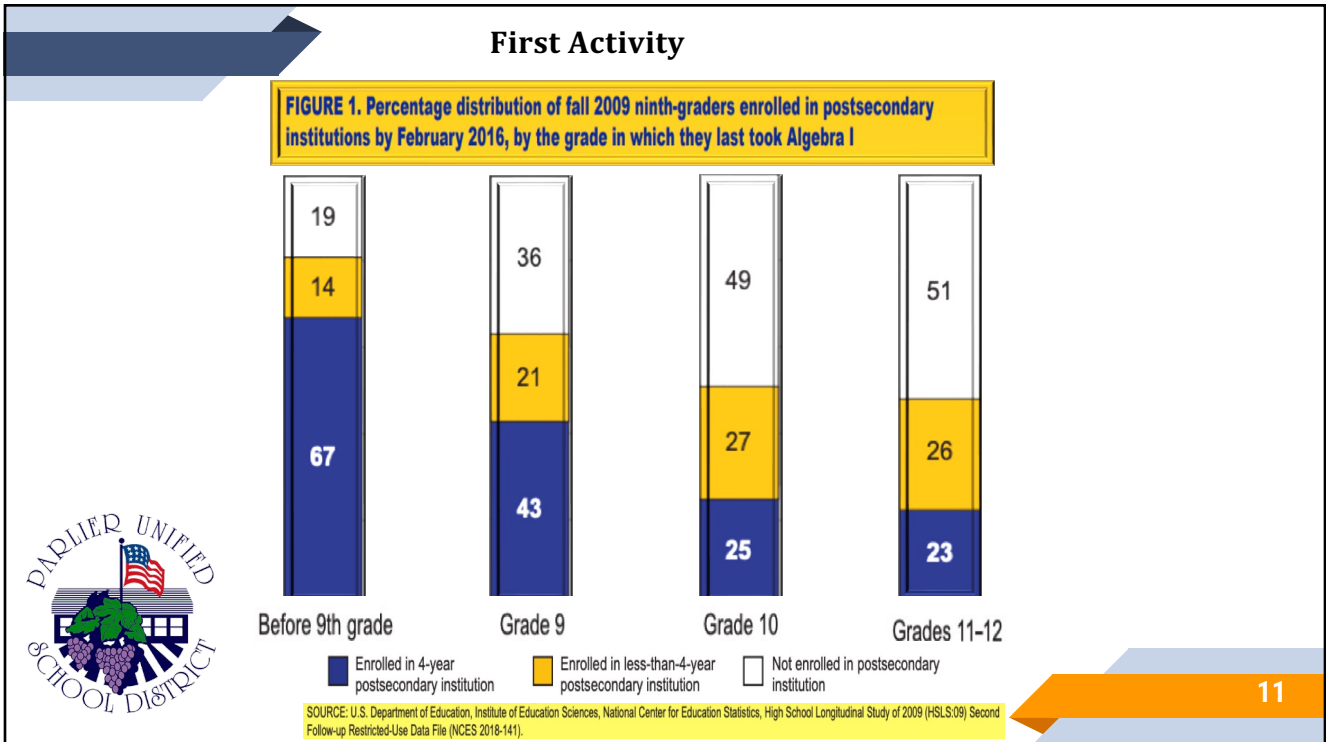


Activity



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Our Collective Journey/Story

- 2021 Summer Math Academy
 - * July 6, 2021 to July 30, 2021 (MTWTHF)
 - 19 Days
- 2022 CAASPP Saturday Math Academy
 - * March 5, 2022 to April 30, 2022
 - 8 Saturdays
- 2023 Summer Math Academy
 - * July 17, 2023 to August 11, 2023 (MTWTHF)
 - 20 Days
- 2024 CAASPP Saturday Math Academy
 - * March 2, 2024 to May 11, 2024
 - 10 Saturdays

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Guiding Principle

We will make decisions based on what is right for our students and supported by research and data.

“What is right is not always popular; what is popular is not always right.”

Albert Einstein

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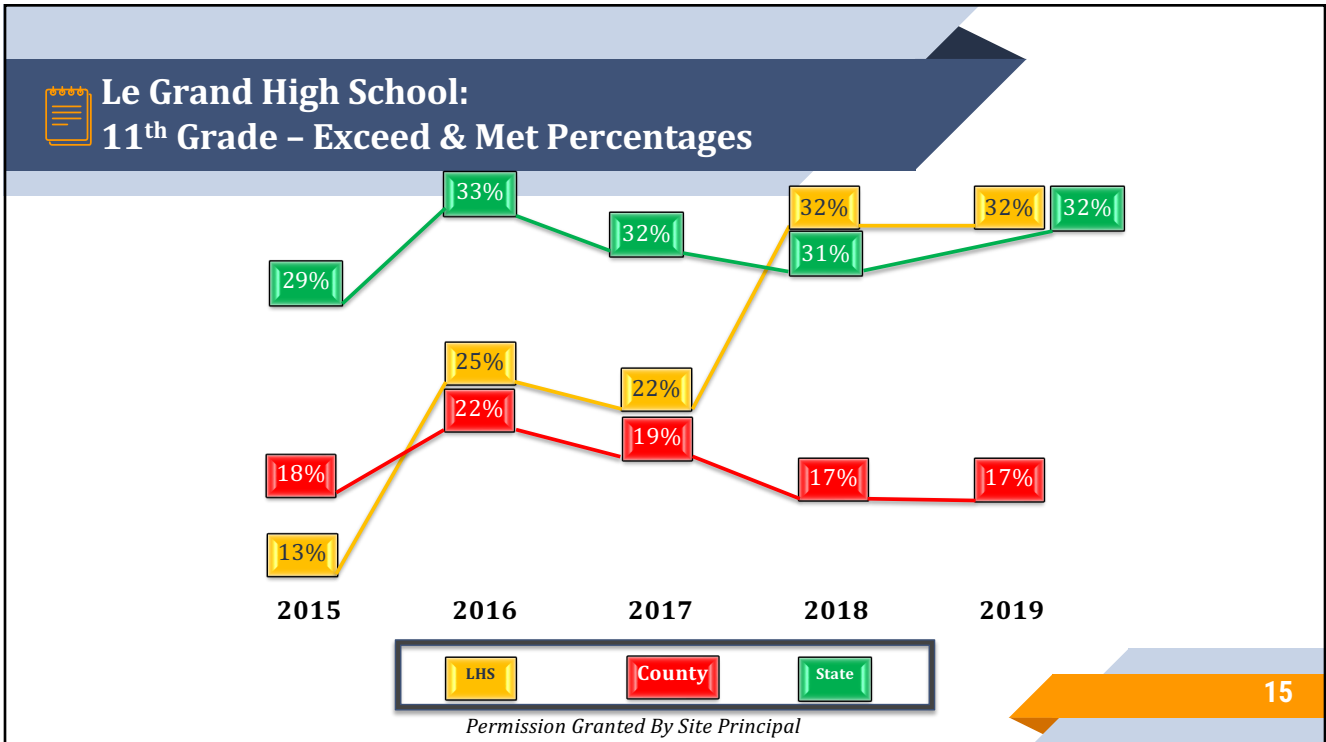


Complete Transparency History/Background

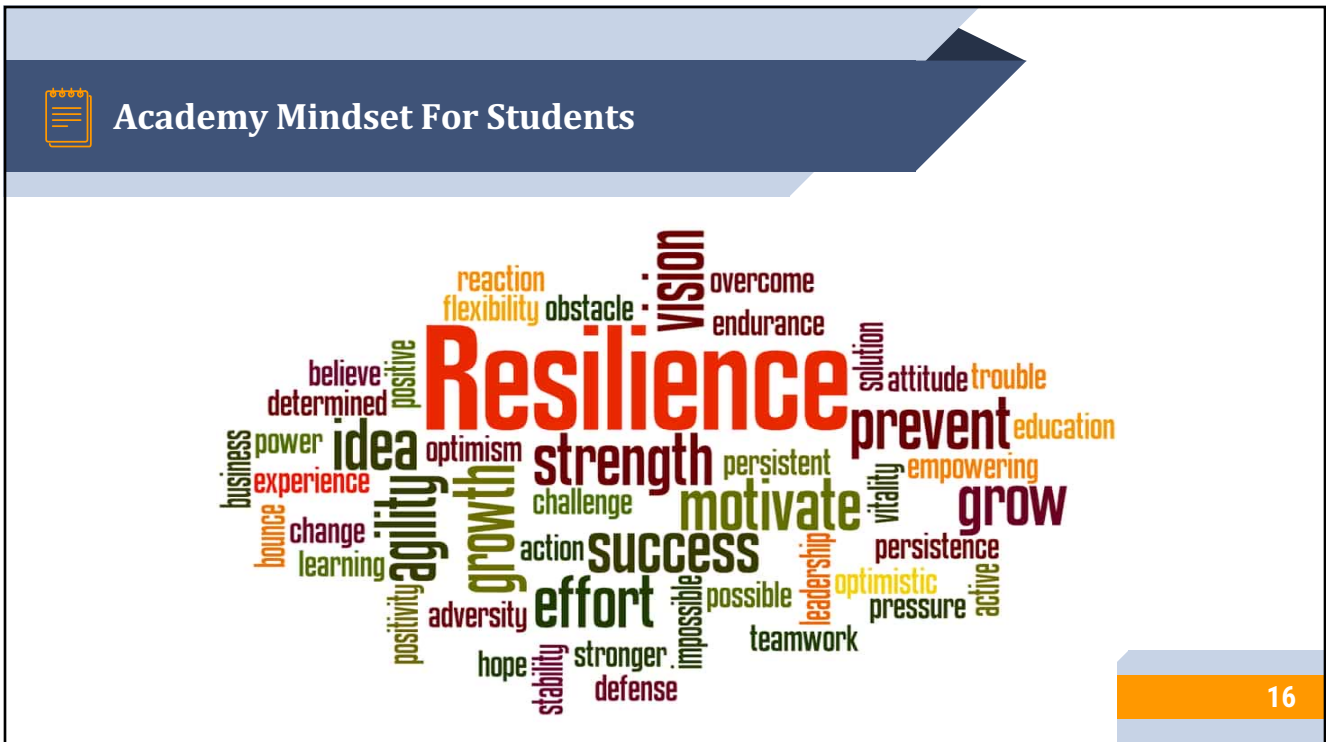


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Math Academy Daily Schedule

7:45am	Depart Parlier Junior High
8:30am	Arrive at Fresno Pacific University
8:45am to 10:30am	Mathematics Instruction (105 minutes)
10:30am to 10:45am	Break (15 minutes)
10:45am to 12:30pm	Mathematics Instruction (105 minutes)
10:45am to 12:30pm	Lunch (45 minutes)
1:15pm to 2:15pm	Mathematics Instruction (60 minutes)
2:15pm to 2:25pm	Break (10 minutes)
2:25pm to 3:25pm	Mathematics Instruction (60 minutes)
3:30pm	Depart Fresno Pacific University
4:15pm	Arrive at Parlier Junior High



Last Day of Math Academy at University of California, Merced





Sample Pacing Guide

	Unit
Week 1	Negative Number Operations, Fractions, Decimals, & Percentages
Day 1	Pre-Test, Zoom Expectations, Ice Breaker, Flipgrid Assignment, Syllabus Assignment
Day 2	Intro to negative numbers, negative decimals and fractions on the number line
Day 3	Negative symbol as opposite, absolute value
Day 4	Adding and subtracting fractions with unlike denominators
Day 5	Multiply fractions, fractions as division, dividing fractions
Week 2	Fractions, Decimals, & Percentages Continued, Rates & Proportional Relationships
Day 1	Adding and subtracting decimals word problem
Day 2	Percent problems, percent word problems
Day 3	Equivalent ratios (Flipgrid), Ratio application
Day 4	intro to rates, Dependent and independent variables
Day 5	Midterm

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Sample Pacing Guide

	Unit
Week 3	Expressions, Equations, & Inequalities
Day 1	Distributive property with variables, combining like terms
Day 2	Equivalent expressions, Inverse operations to solve equations, one-step addition and subtraction equations
Day 3	One-step multiplication and division equations, finding mistakes in one-step equations
Day 4	One-step equation word problems
Day 5	Intro to inequalities with variables
Week 4	Geometry, Statistics & Probability
Day 1	Decomposing angles, Area of parallelograms and triangles
Day 2	Area of composite figures, volume with fractions
Day 3	Surface Area
Day 4	Statistical questions, Shape of data distributions
Day 5	Final

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1st Math Academy: Summer 2021



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1st Math Academy: Summer 2021

Total Attendance	#
16 (84 %)	1
16 (84 %)	2
15 (79 %)	3
15 (79 %)	4
14 (74 %)	5
13 (68 %)	6
12 (63 %)	7

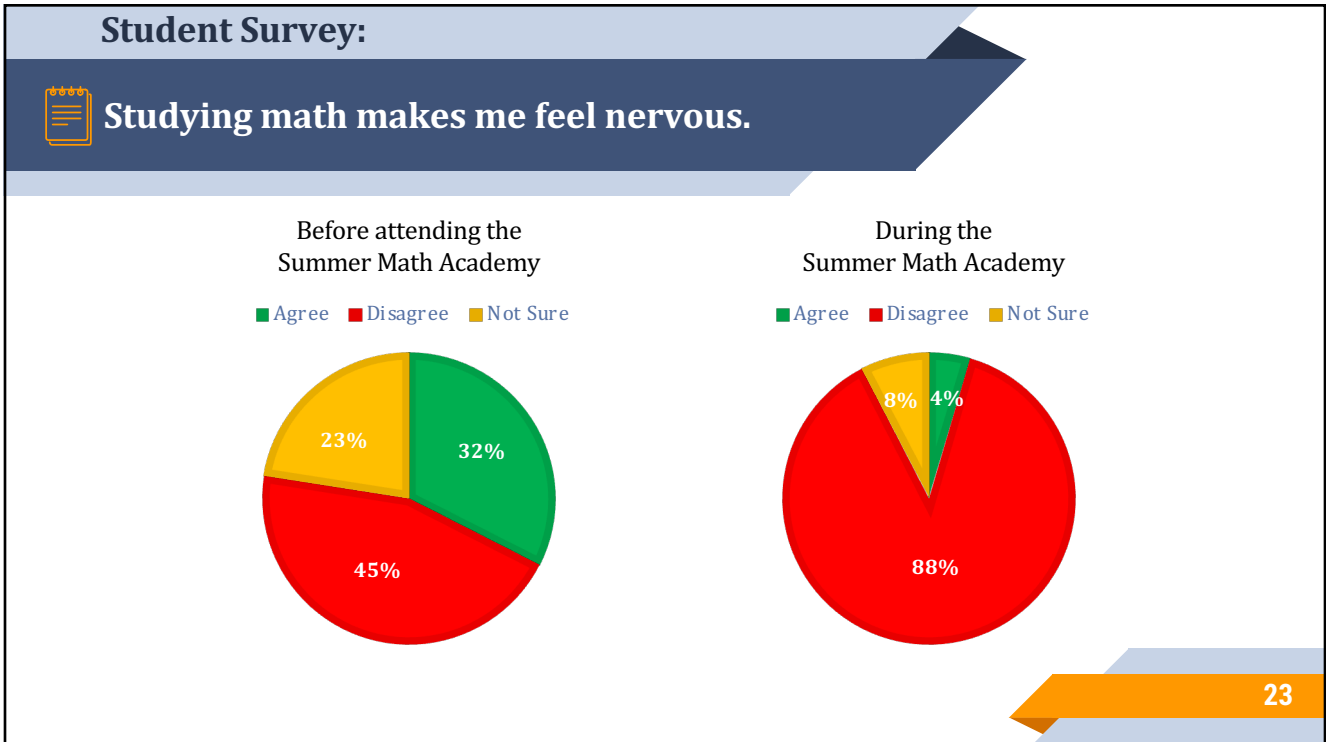
Total Attendance	#
17 (89 %)	1
17 (89 %)	2
17 (89 %)	3
17 (89 %)	4
17 (89 %)	5

Total Attendance	#
18 (95 %)	1
18 (95 %)	2
18 (95 %)	3
18 (95 %)	4
18 (95 %)	5
18 (95 %)	6
18 (95 %)	7

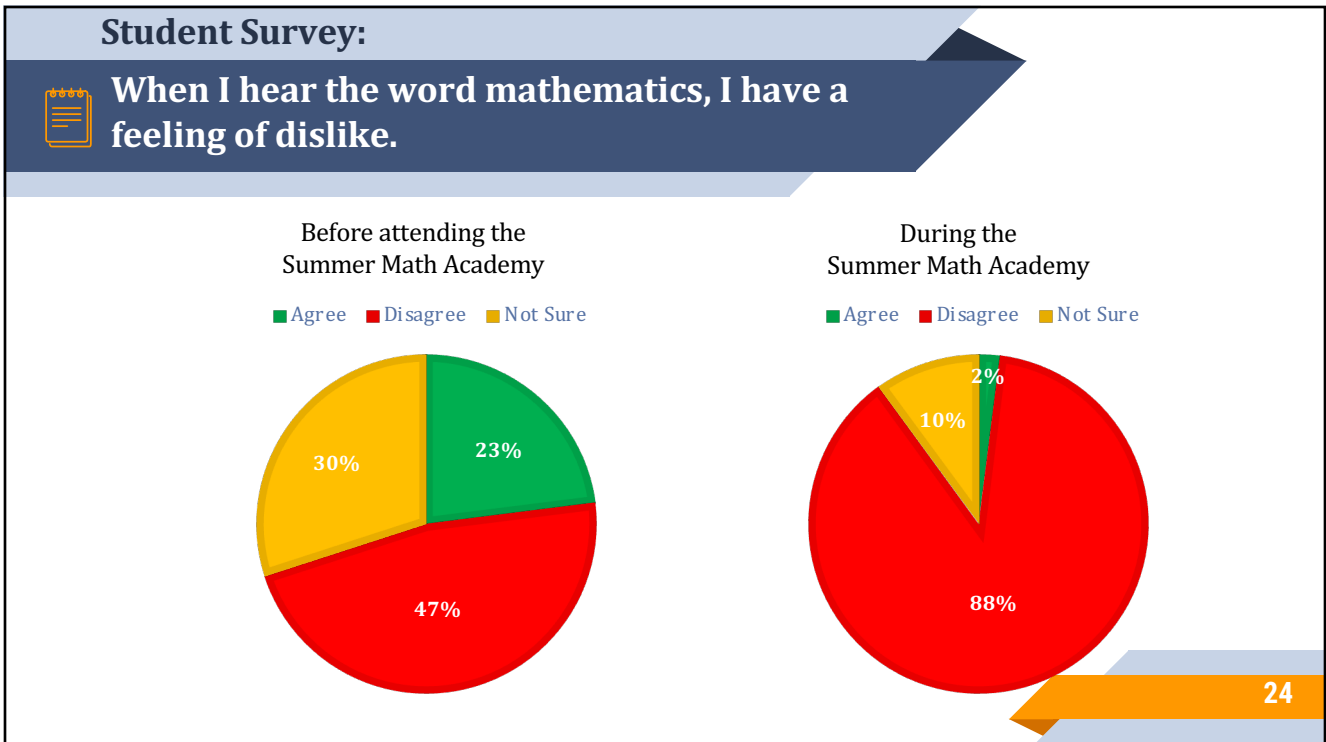
Total Attendance	#
19 (100 %)	1
19 (100 %)	2
19 (100 %)	3
19 (100 %)	4
19 (100 %)	5
19 (100 %)	6
19 (100 %)	7
19 (100 %)	8
19 (100 %)	9
19 (100 %)	10
19 (100 %)	11
19 (100 %)	12
19 (100 %)	13

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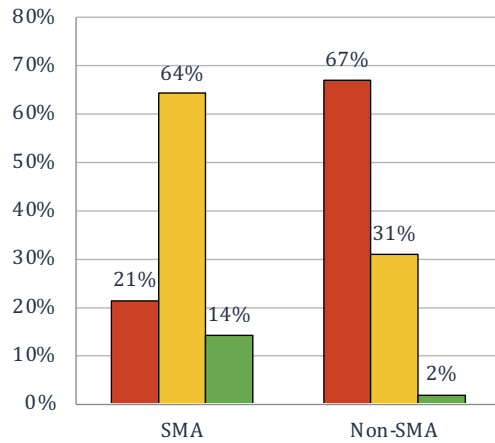


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1st Math Academy: Evaluation

Grade 7 Math - The Number System (FIAB)



- Grade 7 Math - The Number System (FIAB) % Standard not met
- Grade 7 Math - The Number System (FIAB) % Nearly Met
- Grade 7 Math - The Number System (FIAB) % Met

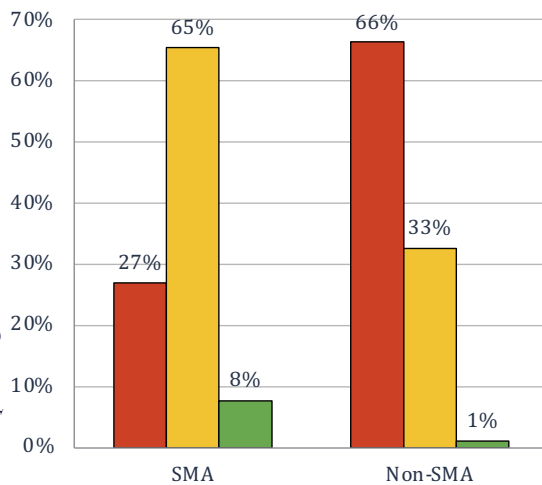
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1st Math Academy: Evaluation

Grade 7 Math - Performance Task - Camping Task (IAB)



- Grade 7 Math - Performance Task - Camping Tasks (IAB) % Standard not met
- Grade 7 Math - Performance Task - Camping Tasks (IAB) % Nearly Met
- Grade 7 Math - Performance Task - Camping Tasks (IAB) % Met

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2nd Math Academy: Spring 2021



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2nd Math Academy: Spring 2021

Total Attendance	#
3 (38 %)	1
3 (38 %)	2
3 (38 %)	3
3 (38 %)	4
3 (38 %)	5
2 (25 %)	6
1 (13 %)	7
1 (13 %)	8
1 (13 %)	9

Total Attendance	#
4 (50 %)	1
4 (50 %)	2
4 (50 %)	3
4 (50 %)	4

Total Attendance	#
5 (63 %)	1
5 (63 %)	2

Total Attendance	#
6 (75 %)	1
6 (75 %)	2
6 (75 %)	3
6 (75 %)	4
6 (75 %)	5

Total Attendance	#
7 (88 %)	1
7 (88 %)	2
7 (88 %)	3
7 (88 %)	4
7 (88 %)	5
7 (88 %)	6
7 (88 %)	7
7 (88 %)	8
7 (88 %)	9
7 (88 %)	10
7 (88 %)	11
7 (88 %)	12
7 (88 %)	13
7 (88 %)	14
7 (88 %)	15

Total Attendance	#
8 (100 %)	1
8 (100 %)	2
8 (100 %)	3
8 (100 %)	4
8 (100 %)	5
8 (100 %)	6
8 (100 %)	7
8 (100 %)	8

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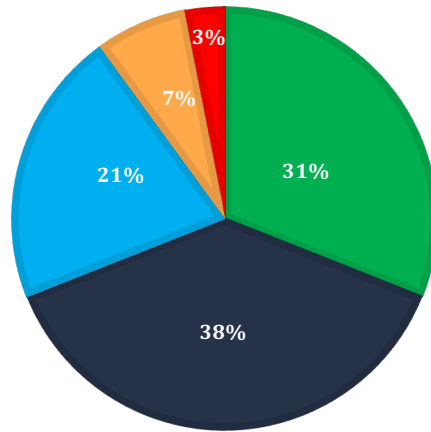
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2nd Math Academy: Evaluation

The CAASPP Saturday Math Academy has increased my confidence in math.

■ Strongly Agree ■ Agree ■ Neutral ■ Disagree ■ Strongly Disagree



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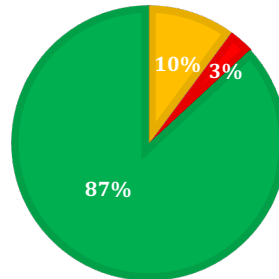
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2nd Math Academy: Evaluation

What college and/or university would you attend if another CAASPP Saturday Math Academy took place next year?

■ California State University, Fresno
■ Fresno Pacific University
■ Reedley College
■ University of California, Merced



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3rd Math Academy: Summer 2023



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3rd Math Academy: Summer 2023

Total Attendance	#
5 (25 %)	1

Total Attendance	#
19 (95 %)	1
19 (95 %)	2
19 (95 %)	3
18 (90 %)	4
17 (85 %)	5

Total Attendance	#
20 (100 %)	1
20 (100 %)	2
20 (100 %)	3
20 (100 %)	4
20 (100 %)	5
20 (100 %)	6
20 (100 %)	7
20 (100 %)	8
20 (100 %)	9
20 (100 %)	10
20 (100 %)	11

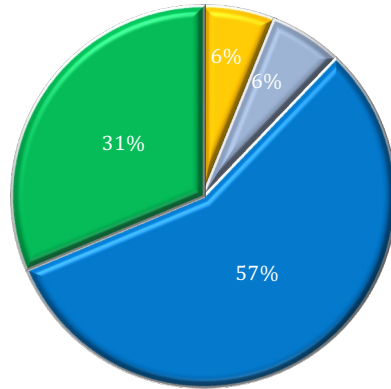
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3rd Math Academy: Evaluation

The Summer Math Academy instructors made math engaging and easy to understand/learn



Strongly Disagree Disagree Neutral Agree Strongly Agree

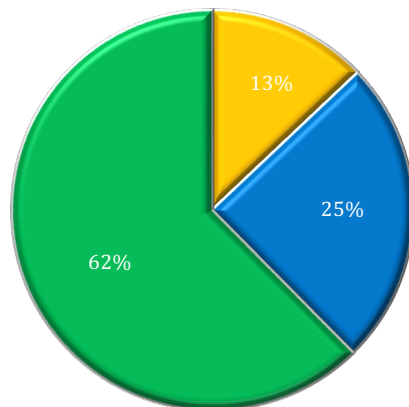
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3rd Math Academy: Evaluation

Overall rating of the 2023 Summer Math Academy



Poor Fair Good Excellent

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Students Personal Reflections

"I really enjoyed being apart of the math academy, it definitely helped me understand more things. **Although there's a chance I may not pass it to math 2 i still won't struggle in math 1.** Most teachers were really supportive and helped you understand things and the learning assistances were very helpful through out the full program, they were always there to help you with whatever even if they were also a bit confused. **Overall i loved the academy and i would like to do this again.**"

"The math academy although hard is engaging and has taught me a lot. It is a very good program and I have attended all of them and if given the opportunity I would join again. **Math went from being my least favorite subject to one of my favorites because of this academy.**"

"The math you learn here is difficult at first but they **teach the math in a way so easy to learn that you can easily understand.**"

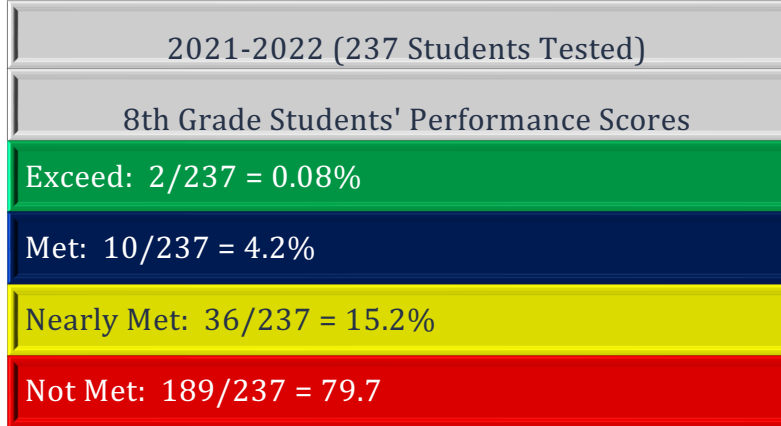
"For starters I loved this academy I have been in it two times once in Saturdays and this summer math academy so I just like to thank my instructors especially Mr. Cazares he was last summer math academy that I was not it but as soon as I spend a day with him I just realized why Loya of students loved him as a teacher I would also like to thank Mr Serrano for the opportunity of a life time of being in this math academy I would just like to say Thank you guys for this opportunity and **I will be in next math academy if there is one.**"

Final Analysis





Analysis & Evaluation: CAASPP Results



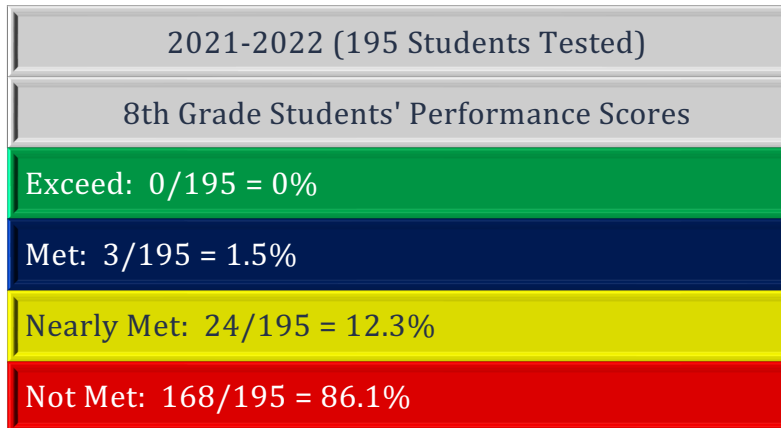
Source: Parlier Unified School District

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Analysis & Evaluation: CAASPP Results



Source: Parlier Unified School District

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Analysis & Evaluation: CAASPP Results

2021 - 2022 (42 Students Tested)

UC Merced Students' Performance Scores

Exceed: 2/42 = 4.7 %

Met: 7/42 = 16.7%

Nearly Met: 12/42 = 28.6%

Not Met: 21/42 = 50%



Source: Parlier Unified School District

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Findings

1. No Course Final

2. No Placement Exam

3. Vertical Articulation

4. Rigor

5. Grade Inflation



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Why The Need For Acceleration?

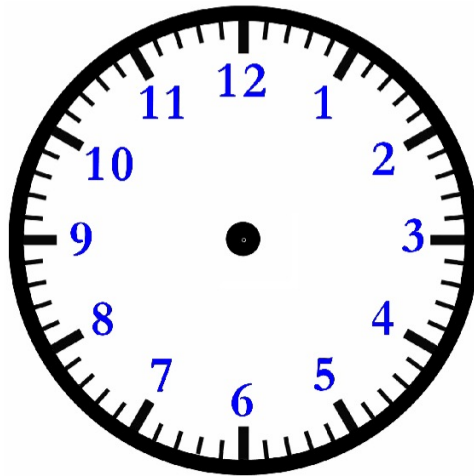
What Does The Research Say?

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Activity



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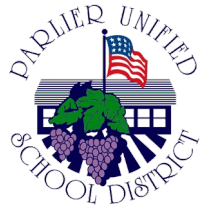
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Why are we doing this? What does the research say?

Cal State L.A.'s highest failure and withdrawal rates, 2018-2021

Department	Course	Course Description	Failure/Withdrawal
English	ENGL 1004	Intro to College Writing	48.9%
Math	MATH 3450	Foundations of Math II: Reasoning	41.7%
Math	MATH 4550	Modern Algebra I	41.1%
Modern Languages & Literature	JAPN 1001	Elementary Japanese I	38.9%
Math	MATH 4700	Numerical Analysis I	38.3%
Math	MATH 4720	Linear Optimization	37.7%
Physics & Astronomy	ASTR 3601	Ancient/Modern Views of Universe	36.5%
Modern Languages & Literature	JAPN 1002	Elementary Japanese II	36.5%
Math	MATH 1086	Discrete Mathematical Models	36.3%
Math	MATH 1082	Precalculus	35.9%
Asian & Asian American Studies	AAAS 2000	Pacific Asian Culture, People & Society	35.6%



*Three year average. Courses enrolled at least 50 students total over three years. Includes D, F and W grades.
Table: Justin Allen / EdSource • Source: Cal State L.A. • Created with Datawrapper

<https://edsources.org/2021/did-failing-a-tough-course-delay-your-csu-graduation-join-the-club/659556>



MAY 2021

ACCELERATE, DON'T REMEDIATE:

New Evidence from Elementary Math Classrooms



Our work with Zearn uncovered striking findings. An analysis of data from Zearn encompassing more than two million students in more than 100,000 elementary math classrooms shows:

- *Students of color and those from low-income backgrounds were more likely than their white, wealthier peers to experience remediation—even when they had already demonstrated success on grade-level content.*
- *Students who experienced learning acceleration struggled less and learned more than students who started at the same level but experienced remediation instead.*
- *Learning acceleration was particularly effective for students of color and those from low-income families.*



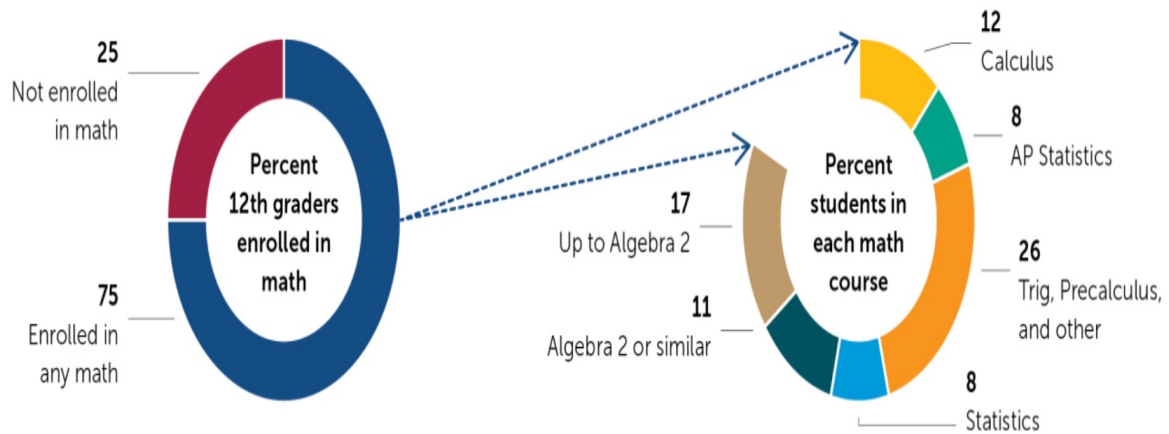
CATEGORIZING MATH COURSES

California public schools offer nearly 100 different math courses. We grouped these courses into several succinct categories that reflect the content and difficulty of courses.

Table 1. High School Math Course Categories

Category	Description	
Advanced Math	Calculus	Calculus courses, including 1-year and 2-year calculus sequences
	AP Statistics	AP Probability and Statistics
	Trig, Precalculus & other	Trigonometry, Precalculus, Analytical Geometry, Linear Algebra, Discrete Math
	Statistics	Probability and Statistics
Algebra 2 or similar		Algebra 2, Integrated Math III, Intermediate Algebra
Up to Algebra 2		General Math, Integrated Math I & II, Algebra, Pre-Algebra, Geometry

Figure 1. 12th-Grade Math Course Enrollment, 2018–19



Note. Of the 75 percent of students enrolled in 12th-grade math, some take more than one math course.

<https://edpolicyinca.org/publications/12th-grade-math>

11th-grade math SBAC level	All 12th Graders	12th-grade math course (percentage of enrolled students)						
		Calculus	AP Statistics	Trig, Precalculus, and other	Statistics	Algebra 2	Up to Algebra 2	No math
Exceeded	13	55	40	8	9	6	1	1
Met	19	32	34	25	26	13	3	7
Nearly met	23	10	18	31	33	23	13	27
Not met	44	3	7	35	31	57	81	64
No score	1	0	0	1	1	1	2	1

<https://edpolicyinca.org/publications/12th-grade-math>



- Parlier Unified School District: Superintendent **Dr. Rafael Iniguez**



Questions



- Center for Educational Partnerships: Assistant Director of Program Improvement: **Ismael Serrano**