

Inequity in Numbers

Call for an Investigation: The Reality Behind SFUSD's Self-Promoted Math Course Sequence



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EXECUTIVE SUMMARY

California is actively considering the adoption of flawed and inequitable guidance on math curriculum for all students based on misleading data and inaccurate success metrics reported by San Francisco Unified School District (SFUSD). Since 2014, SFUSD has exacerbated and deepened inequities for Black and Brown students through its new math framework. SFUSD's curriculum delays Algebra 1 by one year and mandates all students to take the same set of courses sequentially through 8th, 9th and 10th grades. By the end of 10th grade, Algebra 2 enrollments of Black and Brown students have declined because most students cannot afford costly work-arounds afforded by their white and Asian counterparts. By choking off students' options to accelerate and designing a math curriculum that barely meets University of California (UC) standards, the new framework is making San Francisco students less college-competitive statewide. The new framework relies on a problematic compression course that is [missing](#) approximately 75% of the state's [precalculus](#) "+" standards, where the "+" standards are defined by the state as "additional mathematics to prepare students for advanced courses". [UC does not recognize](#) the compression class as precalculus or advanced math because of missing content, thus setting up SFUSD students for failure if they plan on taking advanced courses in college.

As SFUSD [parades](#) its new math framework around the country, they are cherry-picking data that support its success claims while shrouding data and deflecting California Public Records Act requests (CPRA). The three [SFUSD stated program goals](#) are detailed below and are further investigated in the following report sections. The report also explores the limited [acceleration options](#).

1. **GOAL ONE:** By June 2018, SFUSD will have reduced the number of students needing to retake Algebra 1, Geometry, or Algebra 2 by 50% from numbers recorded for June 2013. This goal will be true for the entire populations of SFUSD students as well as each ethnicity.
2. **GOAL TWO:** By June 2018, we will increase the number of students who take and pass 4th year math courses (post Algebra 2 courses) with a C or better by 10%.
3. **GOAL THREE:** By June 2018, we will increase the number of Latino and African American students who take and pass Advanced Placement math courses by 20%.

Given the details in our report, the State of California should not base its revised framework on the flawed claims put forth by SFUSD regarding the success of its math program without a full peer-reviewed assessment of SFUSD's data and methods. An objective evaluation of the new math sequence is urgently needed to verify program metrics and claims before adopting them as guidance for the State of California.

SFUSD — THREE MAIN GOALS

Prior to the change in course sequence, SFUSD students who completed Algebra 1 were required to pass a California Standardized Algebra test to be promoted to Geometry. After [2014](#), when California implemented the Common Core State Standards for Mathematics this exit exam was removed. SFUSD was the only school district in the state to [disregard](#) the state's recommendations and created its entire curriculum. The State of California recommends following the guidance offered in the [Common Core Mathematics Appendix A](#) which "endorses the notion that all students who are ready for rigorous high school mathematics in eighth grade" should have sound, standards-based pathways to accelerate their math learning, and "should take such courses (Algebra I or Mathematics I)." It also recommends that all middle schools "...offer this opportunity to their students." As part of SFUSD's own math curriculum redesign, the district set three main goals to measure success. Each of the goals are detailed below and highlight the gaps in data, misleading claims, and denials of backed evidence.

FACT CHECKING: SFUSD GOAL ONE

SFUSD Stated Goal:

By 6/2018, we will have reduced the number of students needing to retake Algebra 1, Geometry, or Algebra 2 by 50% from numbers recorded for 6/2013. This goal will be true for the entire population of SFUSD students as well as each ethnicity.

Claims:

In a September 2017 [press release](#) SFUSD claims a "dramatic increase in student comprehension" and a drop in Algebra 1 repeaters from 40% to 7%. The press release states that this was found through a longitudinal data review of the last class of high school graduates who completed Algebra 1 in 8th grade (Class of 2018) and the first class of high school graduates who were prohibited from that option (Class of 2019). A 2019 [case study](#) also attributes the reduction of repeat rate to detracking.

Facts:

- The longitudinal data review referenced in SFUSD's claims have never been released and the district continues to deny access.
- From the limited released data, the grade distribution received from SFUSD showed no improvement in Algebra 1 grades.
- The repeat rate did come down, but only because in 2015 SFUSD eliminated the requirement to pass the Algebra 1 California Standards Test (CST) exit exam as a condition of progressing.
- In conducting our review of SFUSD's claims, we were unable to obtain the "longitudinal data" they refer to nor could we replicate the repeat rate numbers quoted by SFUSD using data obtained via a CPRA request.

Timeline:

The first group of students to undergo the new course sequence was the Class of 2019, whose students took Algebra as 9th graders in the 2015-16 school year. In November 2016, in its progress report [presentation](#) to the Board's Curriculum Committee, the Math department included the following slide:

Early Indicators

Algebra 1 Repeaters:

- SFUSD class of 2014: 51% of students needed to repeat
- 2015/16 CCSS Algebra 1 students: 23% of students are repeating

CCSS Grade 8 Math Grades:

- Spring 2015, Ds and Fs: 18% of students
- Spring 2016, Ds and Fs: 12.6% of students

SBAC Scores:

- Spring 2015: 49% students proficient
- Spring 2016: 50% students proficient

Note: We have not yet seen the bridging of achievement gaps



Based on this slide, there are three misleading points:

- The numbers cited in the slide are positioned as evidence of improvement but are irrelevant to the repeat rate, since the class of 2014 had already completed Algebra 1 as 8th graders in 2009/10. SFUSD Math Department are citing numbers from when these students were six years old.
- Comparing the Spring 2015 and Spring 2016 Grade 8 Math grades (18% to 12.6%) is irrelevant to assessing the effectiveness of the new course sequence because 2014 was the last year in which 8th graders could take Algebra 1.
- By citing SBAC scores as measures of progress, the Math department is acknowledging that rising or falling SBAC scores would be a valid metric for assessing their new course sequence. 11th grade students scoring proficient or above have dropped since 2016-2017, the last year before the change.

In September 2017, SFUSD issued a [press release](#) claiming that students who took Algebra 1 in ninth grade were “83 percent less likely to have to repeat the course than students who took Algebra 1 in eighth grade”. “We are seeing that the changes SFUSD made to its math curriculum three years ago are dramatically increasing student comprehension and mastery of Algebra,” said SFUSD’s then Chief Academic Officer Brent Stephens. “Students who took Algebra 1 in 8th grade in 2014 (the last year it was offered) had a repeat rate of 40%. Current 11th graders [most of whom] took Algebra 1 for the first time in 9th grade, had an Algebra 1 repeat rate of only 7 percent.”

A few days later, in an [update to the Board’s Curriculum Committee](#), the Math department again cited the reduction in Ds and Fs in 8th grade math (from 18% in 2015 to 12.6% in 2016) as an early indicator of

success. No explanation was given for their omission of the 2017 grades, which should have been available by then. They did, however, include new and detailed information about Algebra 1 retakes:

Early Indicators of Success

Algebra 1 Retakes

- Current seniors are the final class where essentially all students took Algebra 1 for the first time in 8th grade. Of these students, 40% needed to retake Algebra 1 in a subsequent grade.
- Current juniors are the first class where essentially all students took Algebra 1 for the first time in 9th grade. Of these students, 8% needed to retake Algebra 1 in a subsequent grade.

Ethnicity of Algebra 1 Repeaters		
Ethnicity	Class of 2018	Class of 2019
African American	N=120 (50%)	N=20 (9%)
American Indian/Alaskan	N=4 (36%)	N=1 (5%)
Asian	N=391 (26%)	N=33 (2%)
Decline to State	N=167 (22%)	N=21 (6%)
Filipino	N=100 (53%)	N=9 (4%)
Hispanic/Latino	N=495 (53%)	N=90 (10%)
Multiple Races	N=15 (26%)	N=3 (4%)
Pacific Islander	N=24 (52%)	N=7 (17%)
White	N=85 (31%)	N=14 (4%)

% indicates the portion of students within ethnic group who needed to retake Algebra 1

Recall that in the previous year’s board presentation, the Algebra 1 repeat rate of the Class of 2019 had been reported to be 23%. And in the press release issued three days before this presentation it was 7%. Now the reported repeat rate for the same class is 8%. It is unclear why these discrepancies exist.

Consider the table which gives the number of repeaters by ethnicity. Upon summing up all numbers in the Class of 2019 column, there are 198 students in the Class of 2019 who needed to retake Algebra 1 – the figure should be 8% as reported by SFUSD. This would imply that the Class of 2019 contained $198/0.08 = 2475$ students; however, the actual number of juniors in SFUSD high schools in 2017-18 (i.e. the Class of 2019) was 4011¹. Repeating this calculation for the Class of 2018 and we would obtain 1401 repeaters, which would imply a class size of $1401/0.4 = 3503$ students, compared with an actual class size of 4023 (i.e. the number of seniors in 2017-18).

Either the numbers are incorrect, or the percentages are wrong, or both are wrong.

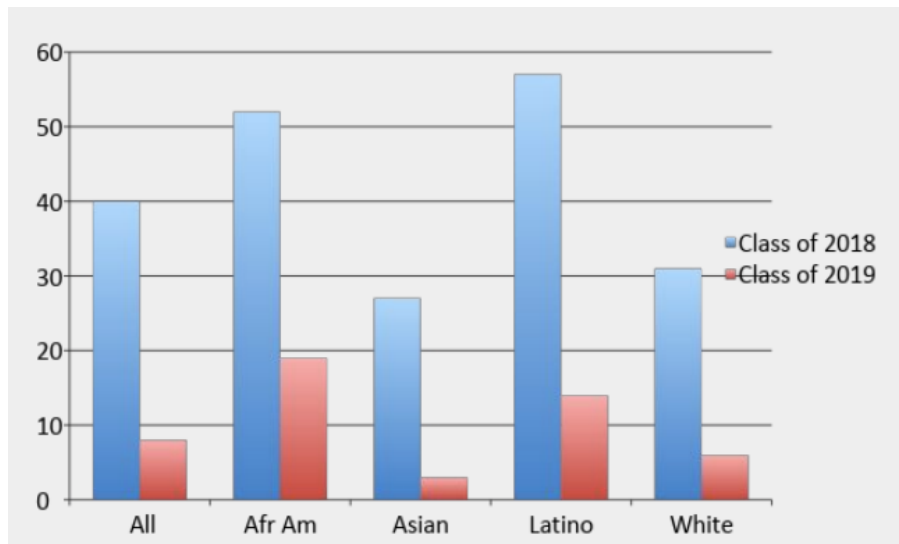
Despite inconsistent numbers and percentages, Alan Schoenfeld and Jo Boaler, the two prominent academics who are major proponents of the new course sequence, wrote in an [op-ed](#) in the San Francisco Chronicle celebrating the program’s success, “the share of students needing to repeat Algebra 1 in high school — the classic pathway to dropping out of math — has declined from 40 percent in 2017 to only 8 percent in 2018.”² This claim was later amplified by the National Council of Teachers of

¹ Source: SFUSD enrollment numbers as reported to the California Department of Education

² Presumably, by “2017” they meant to say “Class of 2018” and by “2018” they meant to say “Class of 2019”.

Mathematics (NCTM), which included this as a [case study](#) in its book, [Catalyzing Change in High School Mathematics](#).

In the October 2018 [report to the Board's Curriculum Committee](#), the Math department repeated the headline numbers (“we have cut from 40% to 8% Algebra 1 repeat rates”) and added a chart to explain the ethnic breakdown.



The percentages for the various ethnicities have changed. Unlike the earlier reported numbers, that showed the number of African Americans repeating Algebra 1 falling from 50% to 9%, this graph now shows it falling from about 51% to 19%. For Latinos, what had been 53% and 10% is now about 58% and 13%. No explanation is given as to why the reported percentages changed.

No new presentations are available from the SFUSD Math department dated after October 2018, although staff continue to make high-profile presentations around the country about the claimed success of SFUSD’s new math curriculum. In all of these presentations, SFUSD math department continue to claim that the Algebra 1 repeat rates have dropped from 40% to 8%, despite inconsistent reported data.

Analysis:

In response to a California Public Records Act (CPRA) request, SFUSD provided Algebra 1 enrollment data but not pass rates for the Class of 2018 and 2019.

**Matched Students Algebra Enrollment for 2-years
Based on Students in Grade 12 2017-18****

SY 2014-15			
SY 2013-14	Enrolled	Not Enrolled	Grand Total
Enrolled	649	1712	2361
Not Enrolled	514	252	766
Grand Total	1163	1964	3127

**Matched Students Algebra Enrollment for 2-years
Based on Students in Grade 12 2018-19****

SY 2015-16			
SY 2014-15	Enrolled	Not Enrolled	Grand Total
Enrolled	10	71	81
Not Enrolled	2957	49	3006
Grand Total	2967	120	3087

**Matched Students Algebra Enrollment for 2-years
Based on Students in Grade 12 2017-18****

SY 2015-16			
SY 2014-15	Enrolled	Not Enrolled	Grand Total
Enrolled	70	1093	1163
Not Enrolled	553	1411	1964
Grand Total	623	2504	3127

**Matched Students Algebra Enrollment for 2-years
Based on Students in Grade 12 2018-19****

SY 2016-17			
SY 2015-16	Enrolled	Not Enrolled	Grand Total
Enrolled	18	2949	2967
Not Enrolled	35	85	120
Grand Total	53	3034	3087

There are several inconsistencies and gaps in the data:

- The total numbers of students cited in the Class of 2018 and 2019 are inaccurate. Publicly available data states that both classes are over 4,000 students but the data provided above cites the Class of 2018 are 3127 students total and the Class of 2019 are 3087 students total.
- For the Class of 2018, there are 649 students forced to retake Algebra I in both school year 2013-14 (their 8th grade year) and school year 2014-15 (their 9th grade year). We also find 70 students who took Algebra 1 in school year 2014-15 and school year 2015-16 (their 10th grade year). Some of those 70 would also have taken Algebra in 8th grade. That gives us an upper bound of $649 + 70 = 719$ -- an upper bound on the total universe of possible Algebra 1 repeaters according to the data in SFUSD's presentation. That's 23% of 3127.
- For the class of 2019, the upper bound on the number of repeaters are 10 (enrolled in both SY 2014-15 and SY 2015-16) plus 18 (enrolled in both SY 2015-16 and SY 2016-17). This totals 28 repeaters, or about 1% of 3087.
- In short, this inconsistency in their numbers calls into question whether or not SFUSD's reported data and subsequent claims and conclusions can be trusted. Whatever the actual numbers are, the repeat rate numbers quoted by SFUSD in their claims of success cannot be replicated using the actual data SFUSD produced in response to a CPRA request.

Starting in 2020, the Math department began using [new slides](#) to talk about the drop in Algebra I repeat rates. These new slides include the following speaker notes for slide 3 of 15:

"Previously, all³ students in 8th grade were placed in Algebra 1. In SFUSD, continuing to 9th grade geometry was a result of a student's grade in Algebra 1 AND scoring proficient on the California state exam. If students did not meet this criteria, they had to repeat Algebra 1 in 9th grade. Often, students had to retake Algebra 1 multiple times. The drop

³ "all" is an exaggeration. The last year with 8th grade algebra was 2013-14. CDE course enrollment data shows 3262 8th graders taking Algebra that year and 469 taking other courses. If we assume that every 8th grader took exactly 1 math course, that would put the percentage taking Algebra at 87%.

from 40% of students repeating Algebra 1 to 8% of students repeating Algebra 1, we saw as a one-time major drop due to both the change in course sequence and the change in placement policy.”

When California switched over in 2015, from the old CST standardized test system to the current Smarter Balanced test system (SBAC) still in use today, it appears that SFUSD changed its “placement policy” (i.e. the rules for who would need to repeat) and dropped the exit test requirements. Students could now progress to the next course in the sequence without passing a proficiency test, provided that they do not fail their Algebra 1 course. Given the elimination of the proficiency test, the decreased repeat rate could be attributed to this change alone. This is further explored in the data provided by SFUSD in response to the same CPRA request that produced the enrollment figures above.

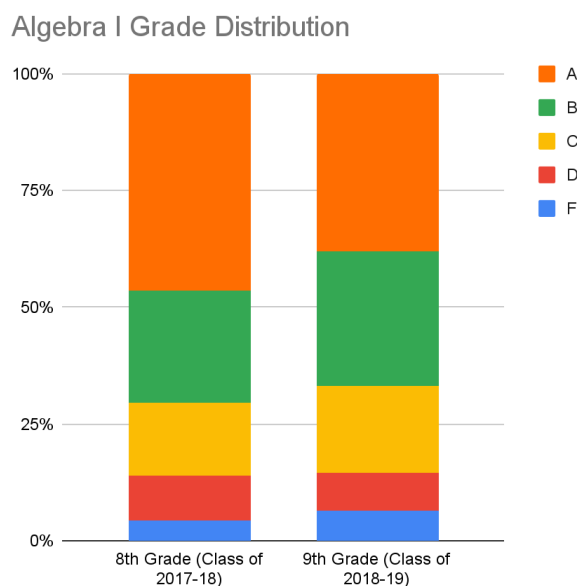
Algebra Enrollment and Grade Distribution (Duplicated Students)

Based on Students in Grade 12 in 2017-18 or 2018-19**

Enrollment Algebra

	LetterGrade	Sch Year			
		2013-14	2014-15	2015-16	2016-17
2017-18	F	100	124	80	
	D	229	130	77	
	C	370	304	176	
	B	568	295	151	
	A	1092	293	138	
2017-18 Total		2359	1146	622	
2018-19	F		*	195	*
	D		*	239	*
	C		26	547	17
	B		18	856	13
	A		25	1120	10
2018-19 Total			78	2957	52

Within the final course grades, the class of 2017-18 (last to take Algebra 1 in 8th grade), 649 students were required to repeat the course in 9th grade. But only 100 of them had received a F in the class. Evidently, the vast majority of those who had to repeat did so because they failed the proficiency test -- not because they failed their Algebra 1 class. Even if the course sequence had not been changed, SFUSD admits in their own speaker notes that the elimination of the proficiency test as a requirement for progressing must be considered a major factor in the drop of the repeat rate. The grade distribution is provided below:



Based on the grade distribution, 8th grade Algebra 1 students received more As and fewer Fs than the 9th grade Algebra 1 students. Their overall Algebra I GPA was 2.98 compared with 2.83 for the 9th graders. This grade distribution data directly contradict SFUSD’s claims of greater student comprehension and mastery of Algebra.

FACT CHECKING: SFUSD GOAL TWO

SFUSD Stated Goal:

By 6/2018, we will increase the number of students who take and pass 4th year math courses (post Algebra 2 courses) with a C or better by 10%.

Claims:

In a November 2018 [presentation](#) to the California School Boards Association, the Math department presented “SFUSD GROWTH IN ADVANCED MATH COURSES (COURSES BEYOND ALGEBRA 2)” and claimed that in 2017-18, 456 more students were taking courses beyond Algebra 2 than had taken them in the year before (2016-17). This was reported as being an increase of 10.4% over the prior year. The San Francisco Chronicle also [reported a similar claim in January 2019](#).

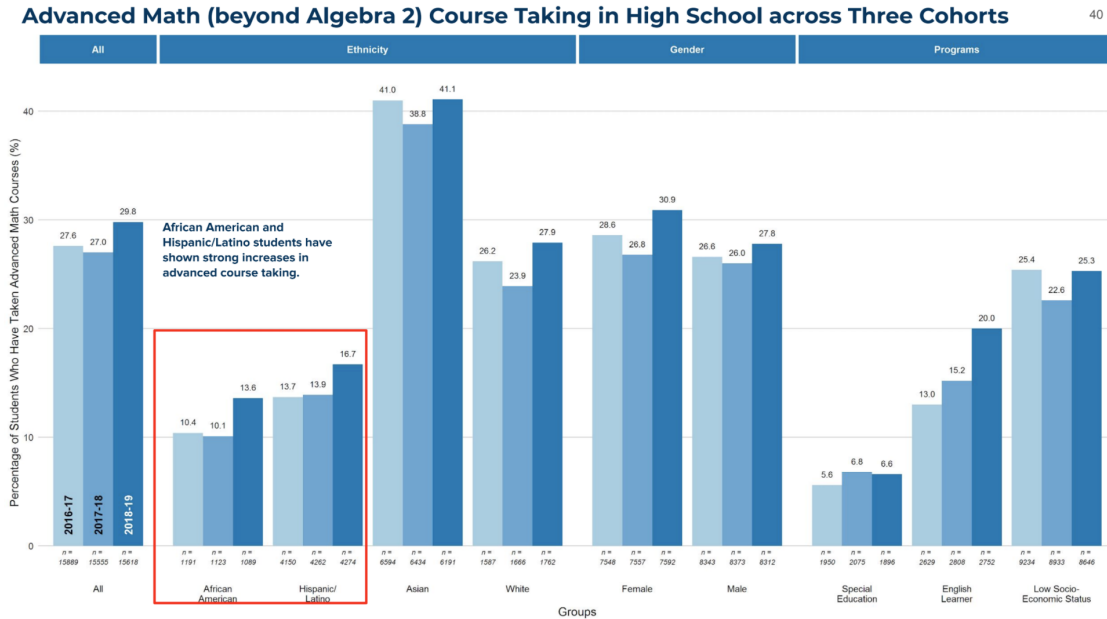
Facts:

- The increase in enrollment in advanced math is due to SFUSD’s consideration of its own compression course as being an advanced math course -- a designation which was rejected by the University of California (UC) because the course lacks adequate precalculus content.
- SFUSD only provides compression class enrollment but not pass rates.

Timeline:

In the October 2018 [Board presentation](#), the Math department claimed that, “we have more students enrolled in 4th year math courses but will not yet see grades and scores until the graduating class of 2019”.

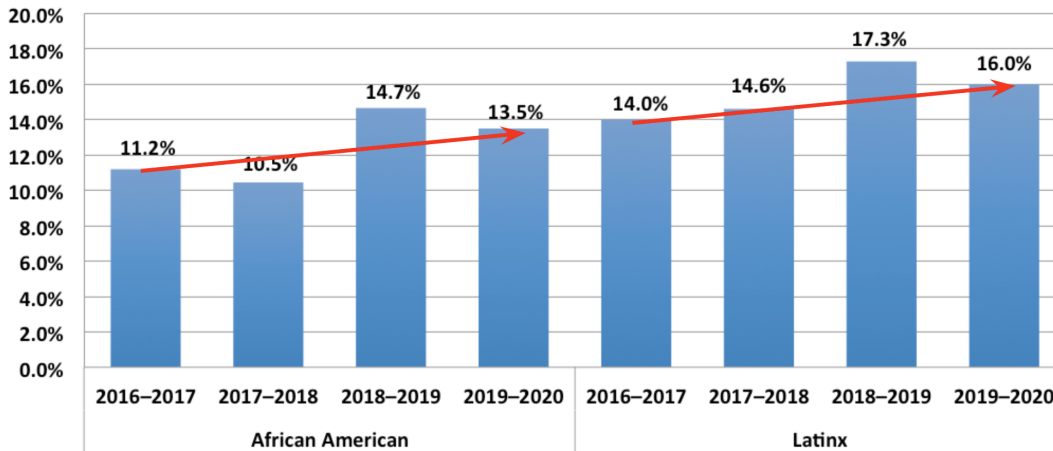
In a November 2019 presentation to the California Mathematics Council (CMC), they provided this detailed chart:



In July 2020 presentation to the Leadership Conference of the National Council of Teachers of Mathematics, SFUSD provided the following data for 2019-2020 albeit only for two subgroups⁴:

⁴ The slide is showing “the percentage of African American students enrolled in advanced math classes out of all African American high school students enrolled that year”. Suppose 100% of African American students took an advanced math class in 12th grade after taking Algebra 1, Geometry, and Algebra 2 in the prior grades. That would be shown on this graph as 25% participation, not 100%.

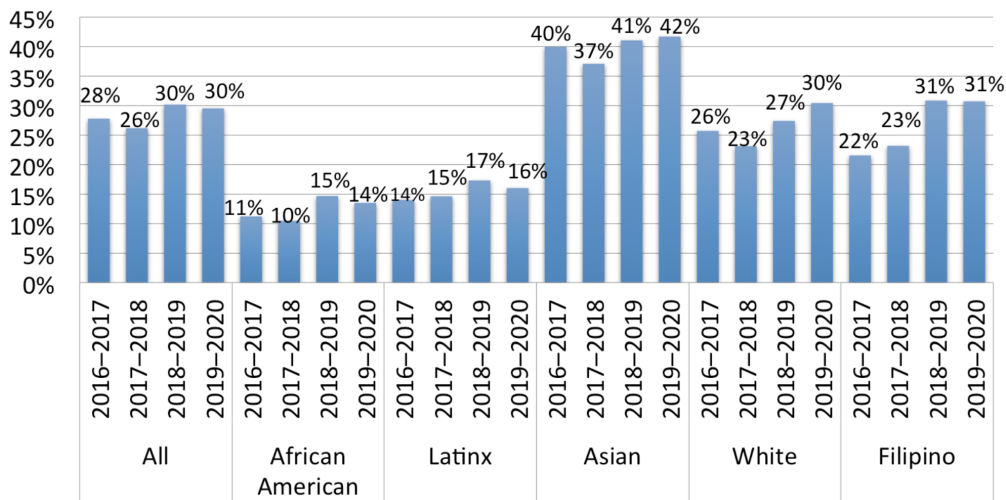
Percent of those in Advanced Math Courses (Beyond Alg 2) within the Total HS Enrollment of an Ethnic/Racial Group



In the Speaker Notes, SFUSD clarify that “Advanced courses here are defined by above Algebra 2 since taking 3 courses including Algebra 2 is our district’s graduation requirement” (sic).

Finally, in their May 2021 presentation to the Mathematics for Equity Conference, the Math department provided the following breakout for 2019-2010, citing advanced math course enrollments across a range of racial/ethnic groups:

Percent of those in Advanced Math Courses (Beyond Alg 2) within the Total HS Enrollment of an Ethnic Group



Analysis:

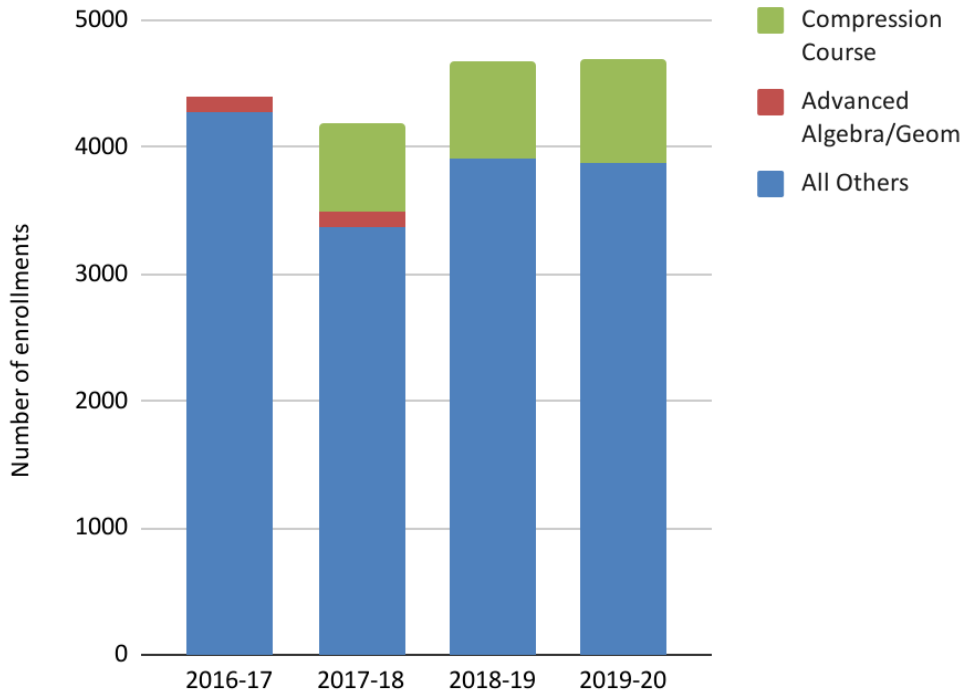
When SFUSD first implemented its new course sequence, its Math department needed to create a way for students to reach Calculus within the required course sequence. Rather than accept earlier acceleration, they created a new “compression course,” combining Algebra 2 and Precalculus in a single year-long course. But when they submitted it for approval by the University of California (UC) as an “Advanced Math” course in the A-G system, the UC rejected this designation. Their reasoning was twofold: (1) since the compression course includes Algebra 2 coursework, it cannot be said to follow Algebra 2; and (2) since the compression course lacks [many of the advanced math topics and competencies the UC and CSUs expect from a full-year Precalculus course](#), the compression course does not provide the equivalent of a full-year, post-Algebra 2 Precalculus course.

It is problematic that SFUSD continues to claim increased enrollment in advanced math classes by counting the compression course despite the fact of UC-rejection and rejecting all requests for access to pass rates.

The graph below shows SFUSD enrollment in advanced math courses between 2016 and 2020; however, the breakdown by course type makes it clear that the claim of a 10% increase in enrollment depends entirely on counting the compression course as advanced math -- a classification which is not supported by UC standards.

Enrollment in Advanced Math classes

All SFUSD Comprehensive high schools



FACT CHECKING: SFUSD GOAL THREE

SFUSD Stated Goal:

By 6/2018, we will increase the number of Latino and African American students who take and pass Advanced Placement math courses by 20%.

Claims:

In a November 2018 [presentation](#) to the California School Boards Association, SFUSD states that (a) “AP Math enrollment has also increased over a two-year period from 2016-17 to 2018-19,”; (b) that “AP Statistics enrollment has increased 48.4%”; and (c) that Latino AP Math enrollment increased 27% over the same period.

Facts:

- It is unknown whether or not SFUSD met its pass metric because SFUSD has refused to publish data on pass rates for AP Math tests.

- Fewer students are taking AP Calculus and, of these, fewer are taking the more challenging Calculus BC course. Enrollment in AP Statistics has increased. Statistics’s prerequisite is Algebra 2 while Calculus requires Precalculus.

Timeline:

In a February 2019 [presentation](#) to the Assessment Conference for Math Educators SFUSD used the same numbers for AP Math and AP Statistics enrollment growth but updated data to include AP Calculus which declined 12.9% over a two-year period.

In a May 2021 presentation to a Mathematics for Equity conference, SFUSD provided updated numbers for both AP Calculus and AP Stats enrollments.

Enrollment in AP Mathematics

	Total AP Calc Students	Total AP Stats Students	Total AP Math Enrollment
2016–2017	1137	504	1641
2017–2018	1145	528	1673
2018–2019	950	705	1655
2019–2020	1028	737	1765
2020–2021	1085	734	1819

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Enrollment in AP Mathematics

All AP	African American 6.9%	Latinx 28.30%	Chinese Asian: 38.9%	White 11.5%	Total AP Math
2016–2017	1.28% 21	7.07% 116	58.93% 967	9.20% 151	1641
2017–2018	32	131	969	165	1673
2018–2019	19	142	896	179	1655
2019–2020	31	139	950	219	1765
2020–2021	1.32% 24	8.85% 161	53.00% 964	12.04% 219	1819

Red: % of a racial/ethnic group compared to the total of all AP Math students
 Blue: % of a racial/ethnic group compared to the total HS population in 2019–2020



Analysis:

Of the two-part metrics (enrollment and pass rates), pass rates cannot be determined because SFUSD has never made the data public although they continue to repeat claims of success.

On the enrollment metric, it remains unclear. Enrollment figures were collected through three sources and each provides different numbers:

- 1) the CDE’s summary numbers, which it obtains directly from SFUSD;
- 2) SFUSD Math department’s own presentations of its results;
- 3) an SFUSD response to a California Public Records Act (CPRA) request.

Source	2016-17	2017-18	2018-19	2019-20
CDE	1666	1714	1691	N/A
CPRA request	1615	1653	1671	1745
Math department presentation	1641	1673	1655	1765

Given that the three sets of underlying numbers vary so widely, firm conclusions cannot be identified; however the following general conclusions appear reasonable:

- Enrollment numbers for AP Calculus BC -- the AP Calculus course that covers three full semesters of college calculus -- have been on the decline across the district. This decline in district-wide enrollments appears to have accelerated with the new course sequence, and the numbers are now lower than ever.
- Enrollment in AP Calculus AB (covering two semesters of college calculus) was previously rising, but AB Calculus enrollment numbers have now fallen back to their lowest levels since 2012-13.
- AP Statistics enrollments, which previously hovered in the 500-600 range, have jumped to over 700 under the new course sequence.

ADDITIONAL CLAIMS

Math Validation Test

In line with all other California School Districts, since 2016 SFUSD has been required by law to have a Mathematics Placement Policy for incoming 9th graders. SFUSD’s [Math Placement Policy](#) holds that the only students permitted to place out of Algebra I in 9th grade must meet two criteria:

- (1) Students must have taken and passed a UC-approved Algebra I class at an accredited school
- (2) Students need to pass the district’s own Math Validation Test (MVT) to prove their mastery of all Algebra 1 material.

Both hurdles are key. Free resources such as Khan Academy or self-study are not UC-approved, so third-party providers are necessary. The only two pathways for eligibility for the Math Validation test are:

- Attend a private middle school where Algebra I is offered
- Pay out-of-pocket for a UC-approved online class at an accredited online school such as Apex Learning, which offers an approved Algebra 1 class that costs \$700, out of pocket

For these reasons, the only students who are even eligible to take the MVT tend to be privileged. No such solutions are available for motivated, well-prepared less privileged students whose families cannot afford these for-pay options.

Acceleration Options

Under the prior course sequence, students were expected to complete Algebra 2 by the end of 10th grade. The main benefit promoted for the new course sequence was the observation that too few Latinx and African American students were completing Algebra 2 by 10th grade and passing the associated standardized tests.

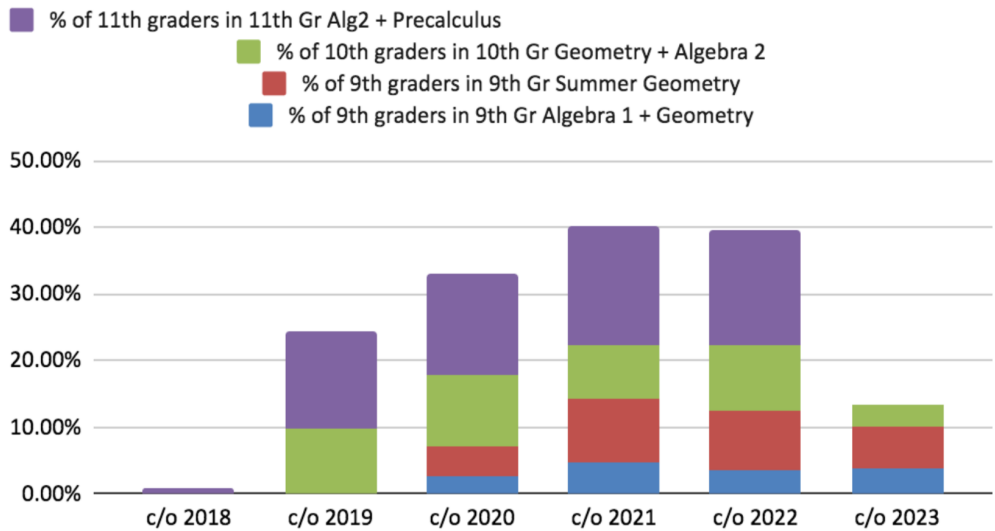
The [original proposal](#) for the new course framework envisioned no opportunities for acceleration. All students would simply take Algebra 1 in 9th grade and Geometry in 10th grade. The only decision point was to be in 11th grade, when students could choose to take either Algebra 2 or the compression course. No students would complete Algebra 2 by the end of 10th grade. The [acceleration options were figured out and shared by students and families](#) in response to push back from frustrated parents and students. There are now five⁵ main acceleration options:

1. Double up on Grade 8 Math and Algebra 1 in 8th grade, and then pass the MVT
2. Double up on Algebra 1 and Geometry in 9th grade
3. Take Geometry during summer school between 9th and 10th grades
4. Double up on Geometry and Algebra 2 in 10th grade.
5. Take the compression course in 11th grade

SFUSD has provided occasional updates on the number of students enrolled in various acceleration options. Most recently, in April 2021, they published this chart:

⁵ SFUSD doesn't include the MVT in its list of acceleration options but the increasing number of test takers indicates that parents see it as an alternative way to get to Calculus.

% Students Enrolled in Acceleration Option



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Current 10th graders



Under the new course sequence, issues of equity and access have worsened. Of the students who completed Algebra 2 by the end of 10th grade under the old course sequence, only 13.8% were Latinx and only 3.9% were African American. Under the new course sequence, those numbers had fallen to 6.2% and 1.3% respectively.

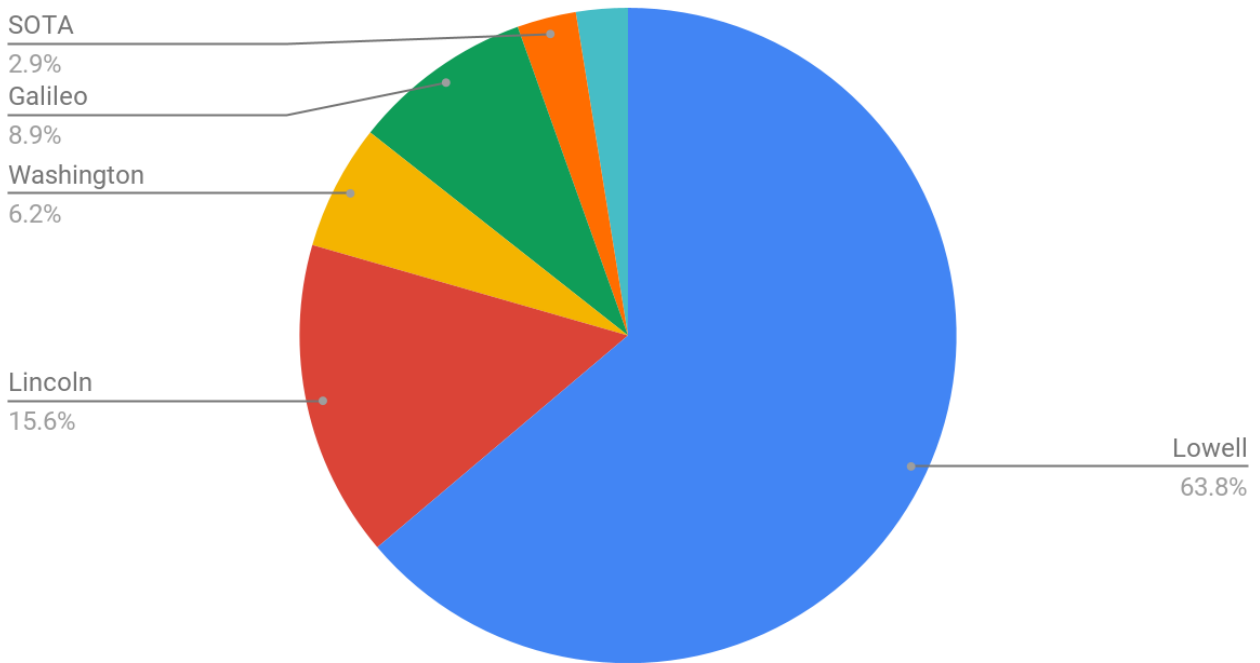
This drop appears related to decreases in funding. SFUSD tolerates acceleration but does not encourage it. Funding for acceleration options are not provided by SFUSD and are left to the responsibility of three main entities:

- Individual parents who pay for an online course that lets the student qualify to take the MVT
- The Board of Supervisors who [pay](#) for Summer School Geometry as a limited lottery system
- The school PTSAs who fundraise to offer additional math courses during the school year so students can double-up on math and avoid the compression course

The graph below provides a summary of high schools with acceleration options by doubling-up math courses⁶:

⁶ Everyone who accelerates takes Algebra 2 in 10th grade. The course enrollment records tell us the number of 10th graders from each school who took Algebra 2 or the compression course in 2018-19. If we subtract from those the number who took Summer School Geometry in 2018 and the number who passed the MVT in 2017, the remainder must have taken one of the doubling up options.

Where Students Doubled Up in 9th or 10th Grade (2018-19)



CONCLUSION

SFUSD claims of success do not bear out on close examination.

- In spite of setting goals for both enrollment and pass rates, SFUSD has failed to provide anything beyond data on enrollments and habitually refuse California Public Records Act requests for access to data.
- SFUSD offers no evidence on whether students' standardized test scores and AP Math scores have increased or decreased under its new program.
- SFUSD has produced no evidence about the efficacy of its compression course -- the controversial linchpin of its course sequence -- which purports to compress Algebra 2 and selected topics from Precalculus into a meaningful one-year calculus preparation course.

SFUSD's implementation of its new course sequence has introduced new inequities for historically excluded students.

- SFUSD does not fund any of the acceleration options that are permitted in the new course sequence, leading Latinx and African American students to comprise a smaller portion of those students able to complete Algebra 2 by the end of 10th grade than they did under the old course sequence.

- Latinx and African American students preparing to take Calculus in their 12th grade year are disproportionately reliant on a compression course which many of SFUSD's own educators believe provides inadequate preparation for AP Calculus.
- SFUSD's Math Validation Test, its must-pass test for pre-qualified 9th grade students to place out of the SFUSD Algebra 1 course, uses an extreme standard of mastery and is only made available to students who either come from private middle schools or whose parents can afford to pay for an accredited online CCSSM Algebra 1 class. This is borne out by the extremely low MVT pass rates.

SFUSD is not a reliable reporter of its own education results.

- SFUSD provides inaccurate and inconsistent enrollment numbers
- SFUSD has only recently acknowledged that eliminating a standardized test as an exit exam played a role in lowering Algebra 1 repeat rates.
- SFUSD routinely inflates its advanced math enrollment numbers in its public presentations and uses its own definition of advanced math rather than adhering to the UC's generally accepted standard.
- SFUSD goals are more about enrollment, which doesn't constitute achievement, in advanced math classes, and non-repeat rates, which as we've seen, does not imply mastery. SBAC scores show that the overall performance declined under the new policy, and the achievement gap in SFUSD is worse than in the state of California as a whole.

Appendix

Reconciling Data on Advanced Math courses

The California Department of Education has published [detailed course enrollment data](#) up to 2018-19. This data set shows the enrollment in all courses offered in all public schools in California and breaks the enrollment figures down by grade, ethnicity, gender, socioeconomic status etc. This is an extraordinarily valuable dataset because it enables comparisons across districts and across time. Courses are identified using code numbers which means some nuance can be lost. For example, Precalculus and precalculus honors are both coded as 2414.

In response to a CPRA request, SFUSD has separately published enrollment data for what it considers advanced math courses only for the years 2016-17 to 2019-20. Both datasets can tell you the number of Hispanic/Latino students taking AP Statistics at Balboa in 2018-19 or the number of 11th graders taking AP Statistics at Balboa in 2018-19. But only the CDE dataset can tell you the number of Hispanic/Latino 11th graders taking AP Statistics at Balboa in 2018-19.

We compared the two sets of enrollment numbers for the subjects and years where they overlap. They often disagreed. This is not necessarily a sign of deliberate deception. The CDE data is a snapshot as of the first Wednesday in October, long after student schedules are supposed to be finalized. The CPRA data was produced later and some differences are probably due to students transferring in or out mid-year or dropping out of school entirely. (Harder to explain is why the AP Math enrollment numbers for years long past should be different in SFUSD presentations and the CPRA dataset. We speculate that it may be due to inconsistent treatment of students moving in and out of the district or between schools.)

Most of the differences we identified between the CDE and CPRA datasets are minor but some indicate underlying issues:

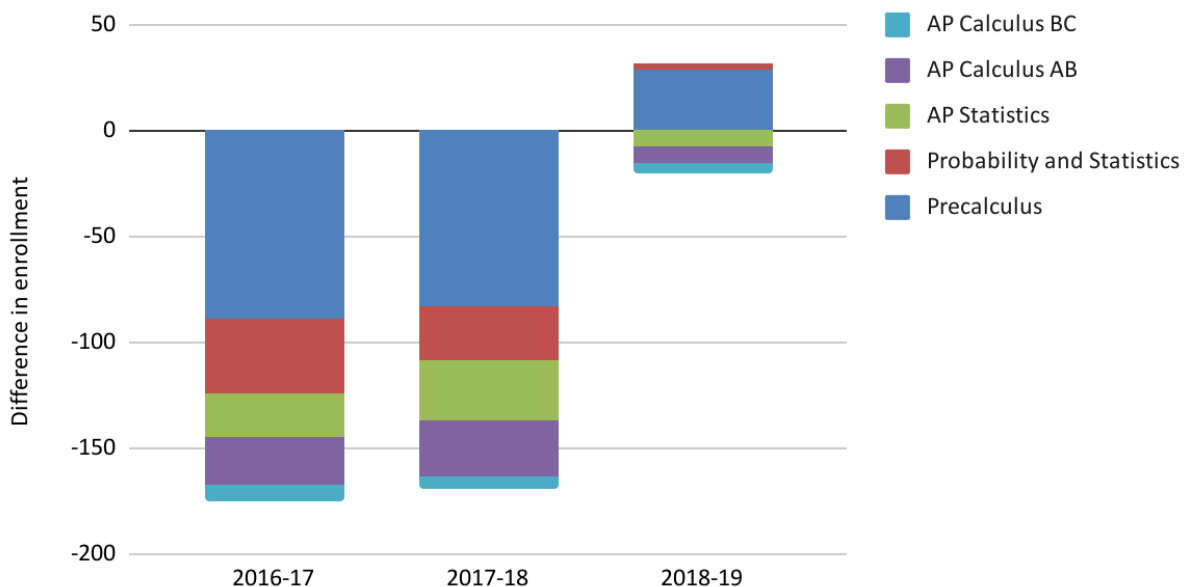
- The CPRA request spreadsheet shows Academy to have had 35 students taking Precalculus in 2016-17. The CDE data shows 0 in that year. The CPRA spreadsheet is surely correct because Academy had students taking AP Calculus in 2017-18 and those students would have needed to take Precalculus the year before.
- The CPRA spreadsheet does not classify as Advanced certain classes that it should. Under the old course sequence, some schools (Galileo, Mission, Wallenberg, Washington) offered courses that were given the code 2417 which is used for “Adv algebra/adv geometry/symbolic logic/theory”. The compression course uses course code 2408 (‘intermediate algebra and trigonometry’). These were post-Algebra 2 classes and should be included in any list of advanced courses. Some were early models for the compression course.

- The CPRA spreadsheet classifies as Advanced a course at Burton that appears in the CDE data using course code 2498 ('Other mathematics course'). It is impossible to look at the CDE data and see which 2498 courses are at an advanced level and which are not. We accept that the CPRA classification is probably correct.
- The CPRA spreadsheet includes in its list of advanced math classes the Probability and Statistics class offered at Downtown HS, one of the district's two continuation high schools i.e. schools intended for students at risk of not graduating. In the data, it published on Algebra I grades and repeat rates, SFUSD limits its analysis to the 14 comprehensive high schools and does not include the continuation high schools. For the three years of overlap, the CPRAC spreadsheet and the CDE data differ wildly on the number of enrollees (15, 44, 43 vs. 63, 23, 23) and both sets of numbers seem to be higher than the number of students taking Algebra 2 at Downtown. That shouldn't be possible given SFUSD's definition of advanced as something taken after Algebra 2. For these reasons, we have excluded the Downtown data for all years and focused on the 14 comprehensive high schools.

Having made those corrections, the differences between the two sets of data are shown below:

Reconciling CDE and SFUSD enrollment data

SFUSD data minus CDE data



Three observations:

1. The SFUSD numbers are generally lower for most subjects in most years. The difference is also concentrated in grade 12 (the precalculus numbers for grade 11 match almost exactly and the other advanced classes are mainly taken by seniors). The CDE numbers are collected on the first

Wednesday in October every year even if it takes them months to publish them. That is well after the deadline by which students can drop classes. The CPRA numbers are dated 13 Feb 2020. Perhaps they represent the numbers as of the end of the school year and seniors are dropping out after the deadline.

2. The magnitude of the difference is much lower across all subjects in 2018-19. We have no idea why.
3. The SFUSD numbers are higher than the CDE numbers for Precalculus in 2018-19. We have no theory for why things changed that year. It is not specific to one school.

Source Documents

- [CPRA Request Responses](#)
- [CPRA Received Raw Data](#)
- [Analysis](#)