

Science Report

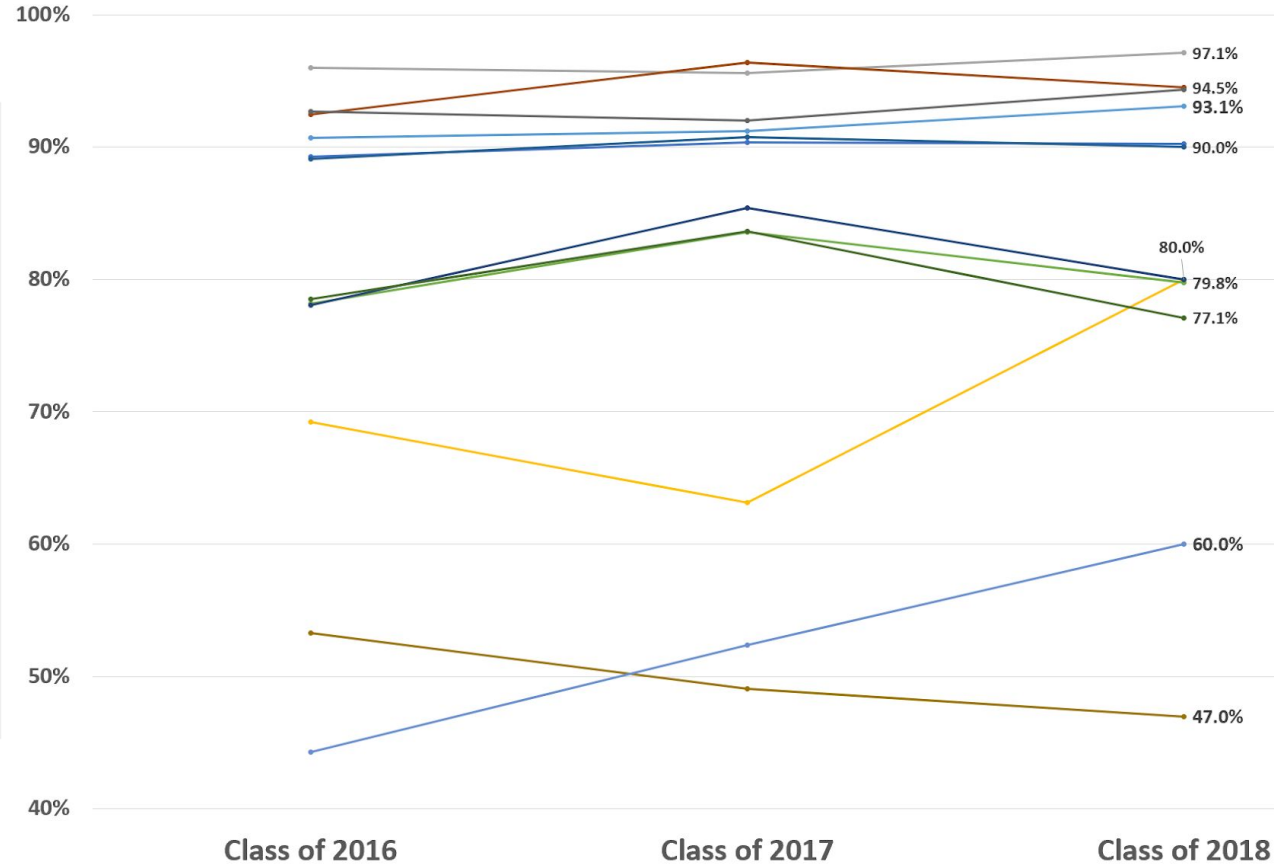
Spring 2019



Achievement Data - Met “D” Requirement San Mateo Union High School District

Cohort Counts, (% Met A-G Science Req. D)	Class of 2016	Class of 2017	Class of 2018
SMUHSD (Comprehensive sites only)	1795 (89.2%)	1803 (90.3%)	1993 (90.3%)
American Indian or Alaskan Native	3 (100.0%)	3 (100.0%)	1 (0.0%)
Asian	471 (96.0%)	410 (95.6%)	487 (97.1%)
Black or African American	13 (69.2%)	19 (63.2%)	20 (80.0%)
Filipino	97 (90.7%)	91 (91.2%)	101 (93.1%)
Latino	453 (78.1%)	505 (83.6%)	578 (79.8%)
Pacific Islander	41 (78.0%)	48 (85.4%)	40 (80.0%)
Two or More Races	185 (92.4%)	166 (96.4%)	164 (94.5%)
White	532 (92.7%)	561 (92.0%)	602 (94.4%)
EL in Mainstream	92 (53.3%)	53 (49.1%)	83 (47.0%)
RFEP	441 (89.1%)	486 (90.7%)	541 (90.0%)
Economically Disadvantaged	242 (78.5%)	287 (83.6%)	485 (77.1%)
Students with Disabilities	140 (44.3%)	149 (52.3%)	150 (60.0%)

SMUHSD A-G Science Requirement D - % Met by Graduating Class



SMUHSD (Comprehensive sites only)

Asian

Black or African American

Filipino

Latino

Pacific Islander

Two or More Races

White

EL in Mainstream

RFP

Economically Disadvantaged

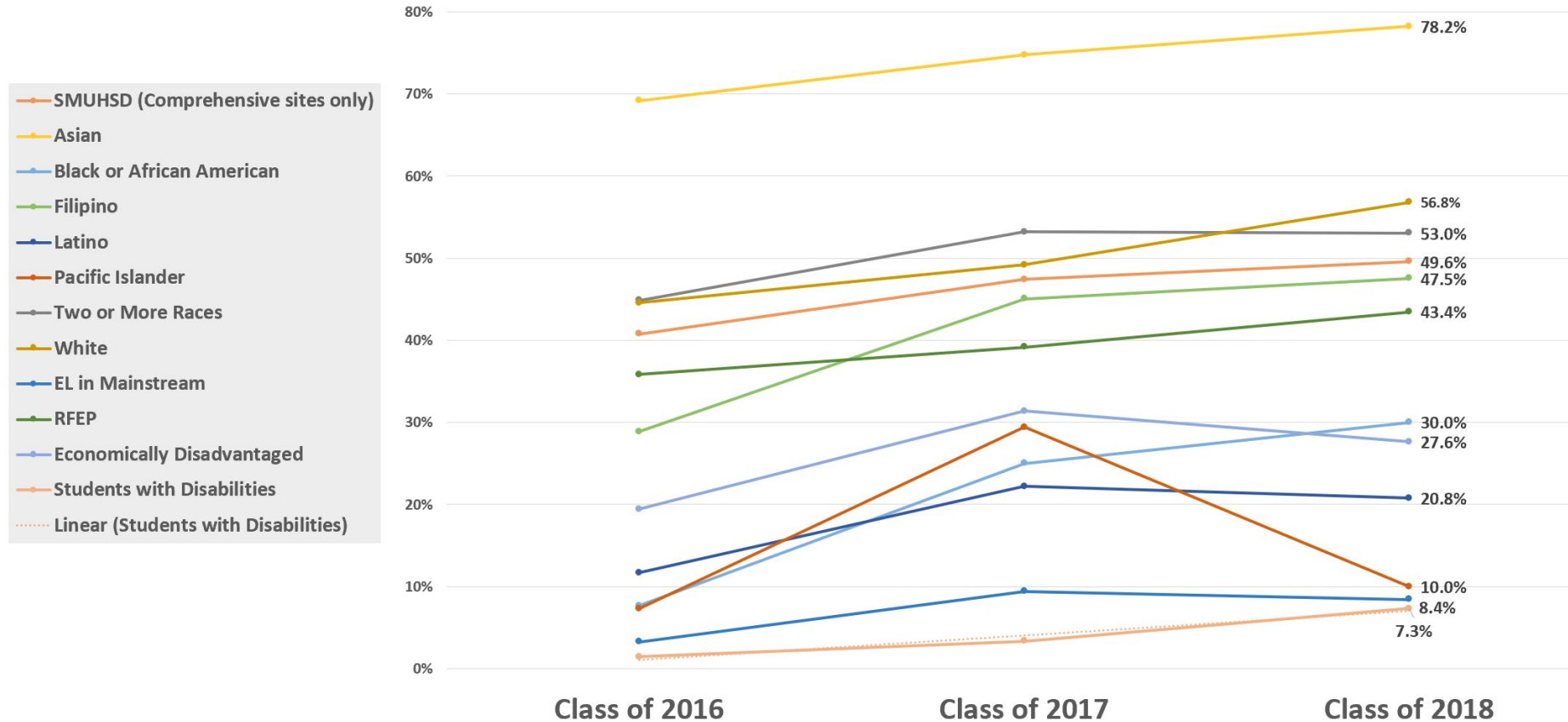
Students with Disabilities

AP/IB Enrollment Percentages by Cohort

San Mateo Union High School District

Cohort Counts, (% of Students Enrolled in an AP/IB Course)	Class of 2016	Class of 2017	Class of 2018
SMUHSD (Comprehensive sites only)	1795 (40.8%)	1803 (47.4%)	1993 (49.6%)
American Indian or Alaskan Native	3 (33.3%)	3 (50.0%)	1 (0.0%)
Asian	471 (69.2%)	410 (74.8%)	487 (78.2%)
Black or African American	13 (7.7%)	19 (25.0%)	20 (30.0%)
Filipino	97 (28.9%)	91 (45.1%)	101 (47.5%)
Latino	453 (11.7%)	505 (22.2%)	578 (20.8%)
Pacific Islander	41 (7.3%)	48 (29.4%)	40 (10.0%)
Two or More Races	185 (44.9%)	166 (53.2%)	164 (53.0%)
White	532 (44.5%)	561 (49.2%)	602 (56.8%)
EL in Mainstream	92 (3.3%)	53 (9.4%)	83 (8.4%)
RFEP	441 (35.8%)	486 (39.1%)	541 (43.4%)
Economically Disadvantaged	242 (19.4%)	287 (31.4%)	485 (27.6%)
Students with Disabilities	140 (1.4%)	149 (3.4%)	150 (7.3%)

SMUHSD - AP/IB Science Class Enrollment - % Met by Graduating Class



NGSS PD Timeline (All district teachers)

2014 - 6 hour NGSS Appendices, hard copies of PEs, early innovators get to work

2015 - 12 hour DCIs Tool A, breakout sessions with ESS focus, all teachers offered full reimbursements for outside NGSS PD such as CSTA Rollouts (this continues today)

2016 - 12 hour Summer Institute with AMS, early innovators lead and join CLE teams

2017 - 18 hour Summer Institute with Phenomenon First, SEP focus on modeling

2018 - 12 hour Summer Institute with SEP focus on QFT, RAD, tipping point reached

2019 - 6+12 hour NGSS Essentials (for 10 new-to-district teachers), and Equity with Scientist Spotlights with CCCs and CM, CCCR, CLEs 1 & 2

2020 - Instructional Resource Pilot/Rollout TBD

Common Learning Experiences Encourage Lifelong Learning

Physics in the Universe
The Living Earth
Chemistry in the Earth System

CLEs are **district made** in teams, piloted, revised, reviewed, and revised again.
Materials are provided to each teacher/site as determined by those on the team.
Portions of district **PD days** are devoted to student work and the next CLE.
CLEs are available to all science teachers through the **CD Team CANVAS Course**.

“Students who reported **participating in more “science learning practices”** in the classroom reported more **recognition as a scientist** from teachers and classmates, and in turn reported more **positive outcomes.**” -Christy Starr, rg SMUHSD pstem survey results

Scientist Spotlight Homework Assignments Shift Students’ Stereotypes of Scientists and Enhance Science Identity in a Diverse Introductory Science Class

Jeffrey N. Schinske,^{1*} Heather Perkins,[‡] Amanda Snyder,[†] and Mary Wyer[‡]

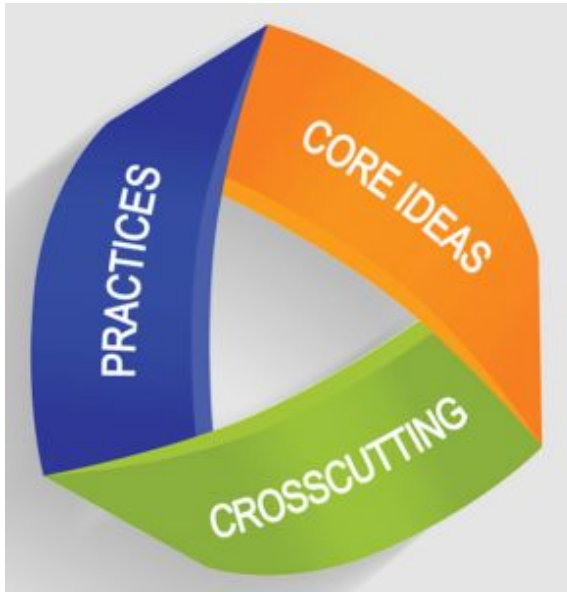
¹Biology Department, De Anza College, Cupertino, CA 95014; [†]Psychology Department, North Carolina State University, Raleigh, NC 27695

Common Learning Experiences were implemented last year, and are being built by teams of teachers.

Physics in the Universe	The Living Earth	Chemistry in the Earth System
<u>How much sunlight gets to Earth?</u> <u>Inverse Square Law with Light</u>	<u>Do We Taste the Same? Genetic Mutations and Variation!</u>	<u>Heat Exchange: All Reactions Release or Store Internal Energy</u>
<u>One fish, Two fish, Red shift, Blue shift... Expansion of the Universe</u>	<u>Quantitative Model of Carbon Cycle</u>	<u>We are Star Stuff: Examining Star Spectra for Evidence of Familiar Elements</u>

All Standards, All Students: Equity Focus

Physics in the Universe
The Living Earth
Chemistry in the Earth System



All standards all students. We chose the 3 course model, that takes 3 years.

We estimate that 60% of our seniors complete the 3 course model by graduation, we still have work on ensuring ALL students have access to the standards.

Instructional Materials

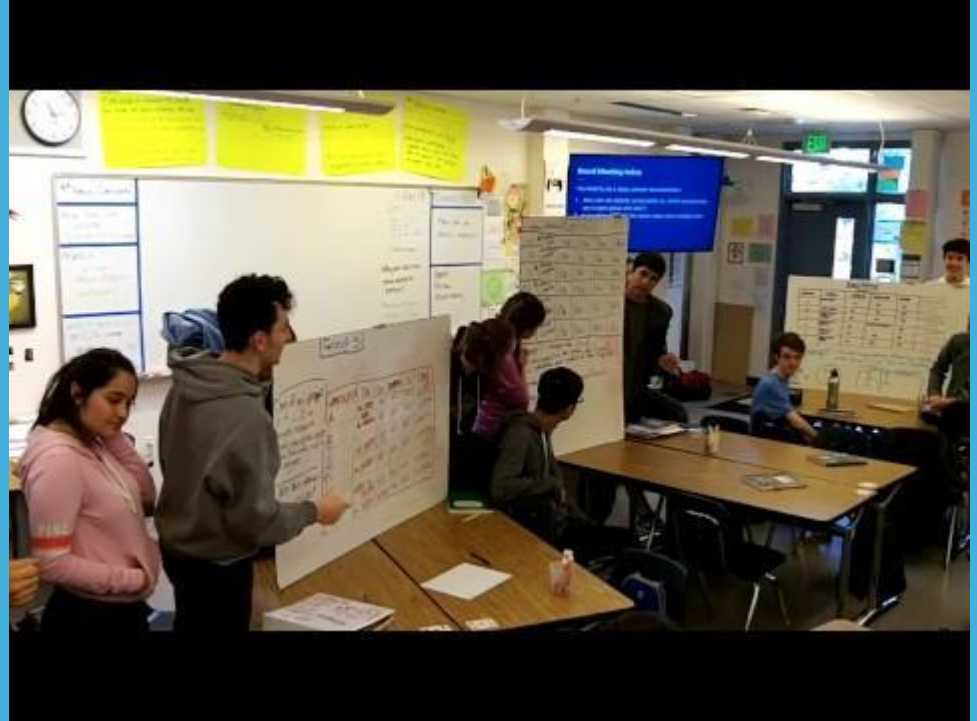
Physics in the Universe
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The intention of the rollout of the NGSS standards was to ensure that teachers were grounded in the standards before new instructional materials were chosen. Secondly, during the transition period, teachers would continue to use previous materials in support of the needs of students.

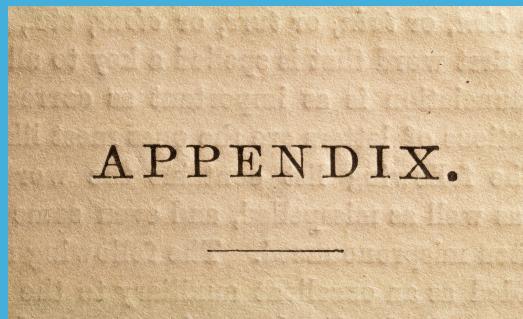
Ideas in discussion:

- *Teacher collaborative creation of Common Canvas Courses*
- *Development of consumable workbooks*
- *Sets of data books, readers, workbooks, textbooks like Biozone, digital resources like Stemsopes, and use of other digital tools like Newsela*

What the new science classroom looks like....







Appendix

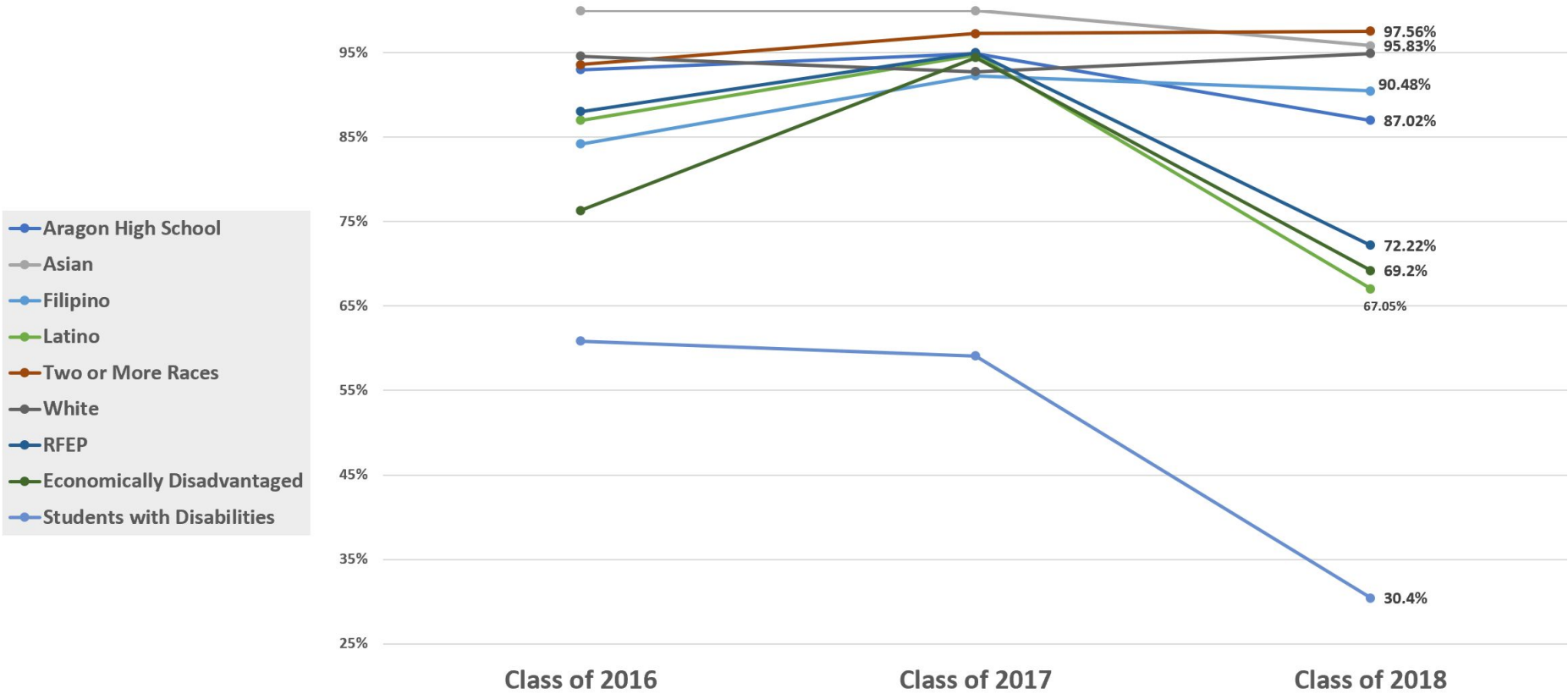


Achievement Data - A-G Pass Rates

Aragon

Cohort Counts, (% Met A-G Science Req. D)	Class of 2016	Class of 2017	Class of 2018
Aragon High School	343 (93.0%)	333 (94.9%)	362 (87.0%)
American Indian or Alaskan Native	(0.0%)	2 (100.0%)	(0.0%)
Asian	94 (100.0%)	75 (100.0%)	96 (95.8%)
Black or African American	2 (100.0%)	5 (100.0%)	5 (60.0%)
Filipino	19 (84.2%)	13 (92.3%)	21 (90.5%)
Latino	77 (87.0%)	95 (94.7%)	88 (67.0%)
Pacific Islander	11 (72.7%)	9 (66.7%)	12 (66.7%)
Two or More Races	47 (93.6%)	37 (97.3%)	41 (97.6%)
White	93 (94.6%)	97 (92.8%)	99 (94.9%)
EL in Mainstream	10 (60.0%)	1 (100.0%)	9 (22.2%)
RFEP	67 (88.1%)	80 (95.0%)	72 (72.2%)
Economically Disadvantaged	38 (76.3%)	54 (94.4%)	78 (69.2%)
Students with Disabilities	23 (60.9%)	22 (59.1%)	23 (30.4%)

Aragon A-G Science Requirement D - % Met by Graduating Class

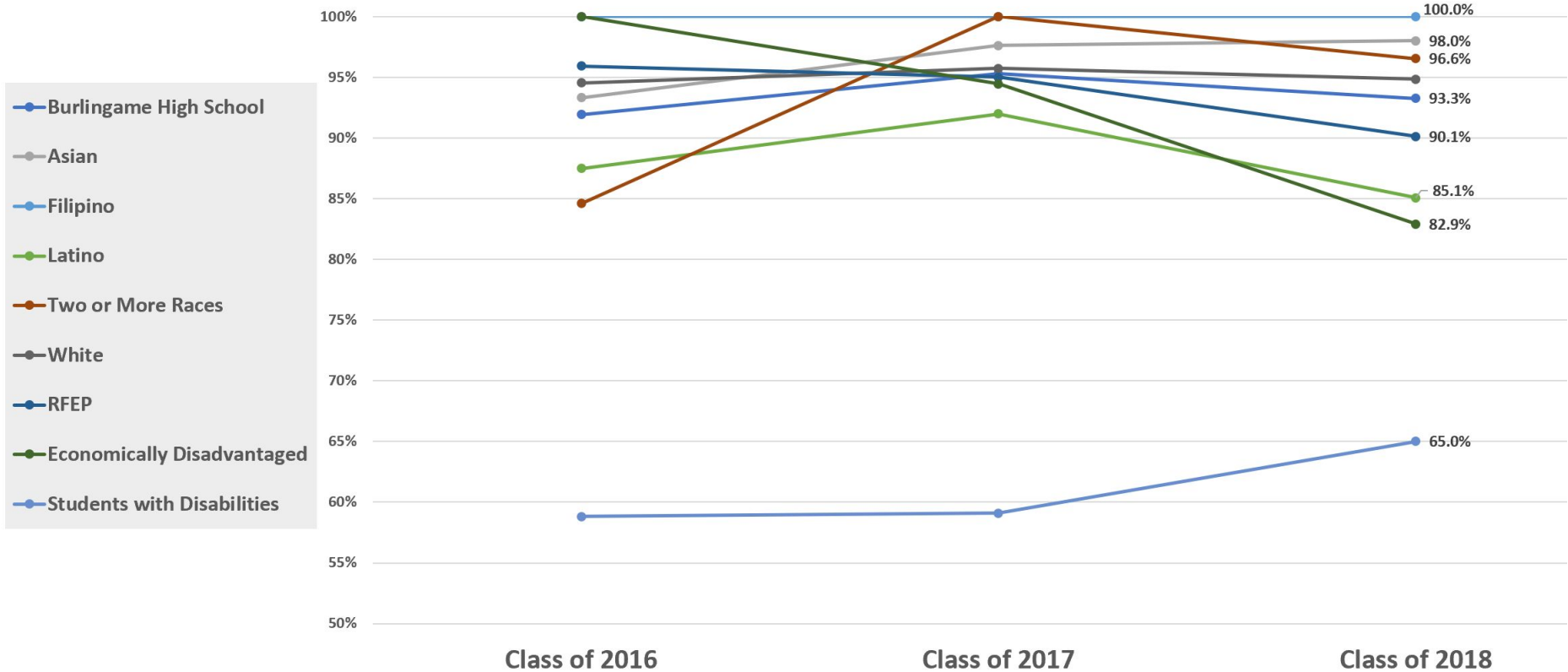


Achievement Data - A-G Pass Rates

Burlingame

Cohort Counts, (% Met A-G Science Req. D)	Class of 2016	Class of 2017	Class of 2018
Burlingame High School	298 (91.9%)	297 (95.3%)	327 (93.3%)
American Indian or Alaskan Native	(0.0%)	1 (100.0%)	1 (0.0%)
Asian	45 (93.3%)	42 (97.6%)	50 (98.0%)
Black or African American	3 (66.7%)	2 (50.0%)	(0.0%)
Filipino	6 (100.0%)	7 (100.0%)	5 (100.0%)
Latino	48 (87.5%)	50 (92.0%)	67 (85.1%)
Pacific Islander	5 (80.0%)	3 (66.7%)	n/a
Two or More Races	26 (84.6%)	28 (100.0%)	29 (96.6%)
White	165 (94.5%)	164 (95.7%)	175 (94.9%)
EL in Mainstream	6 (83.3%)	4 (25.0%)	4 (50.0%)
RFEP	49 (95.9%)	60 (95.0%)	71 (90.1%)
Economically Disadvantaged	10 (100.0%)	18 (94.4%)	41 (82.9%)
Students with Disabilities	17 (58.8%)	13 (59.1%)	20 (65.0%)

Burlingame A-G Science Requirement D - % Met by Graduating Class

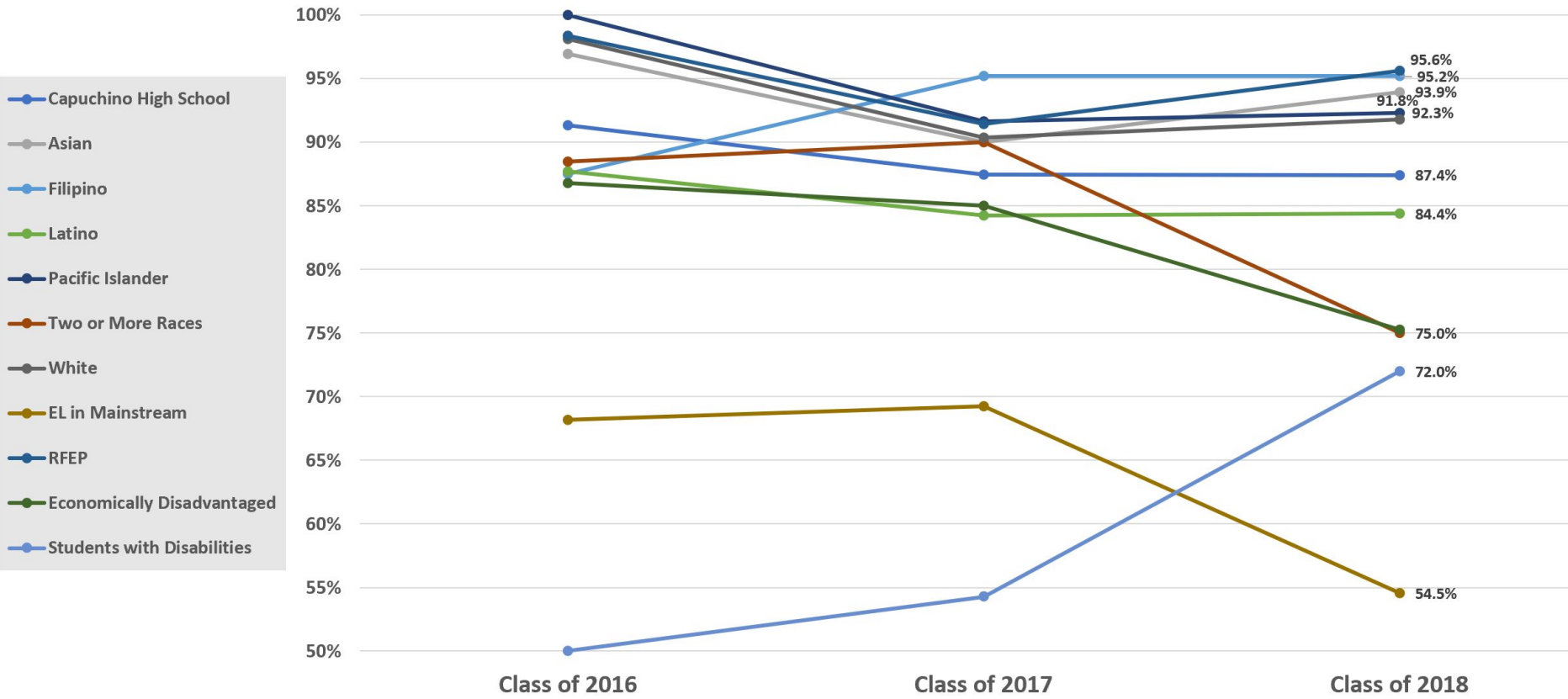


Achievement Data - A-G Pass Rates

Capuchino

Cohort Counts, (% Met A-G Science Req. D)	Class of 2016	Class of 2017	Class of 2018
Capuchino High School	254 (91.3%)	247 (87.4%)	286 (87.4%)
American Indian or Alaskan Native	n/a	n/a	n/a
Asian	33 (97.0%)	30 (90.0%)	33 (93.9%)
Black or African American	2 (50.0%)	4 (50.0%)	1 (0.0%)
Filipino	24 (87.5%)	21 (95.2%)	21 (95.2%)
Latino	106 (87.7%)	108 (84.3%)	141 (84.4%)
Pacific Islander	9 (100.0%)	12 (91.7%)	13 (92.3%)
Two or More Races	26 (88.5%)	20 (90.0%)	16 (75.0%)
White	54 (98.1%)	52 (90.4%)	61 (91.8%)
EL in Mainstream	22 (68.2%)	13 (69.2%)	22 (54.5%)
RFEP	61 (98.4%)	70 (91.4%)	91 (95.6%)
Economically Disadvantaged	53 (86.8%)	60 (85.0%)	101 (75.2%)
Students with Disabilities	20 (50.0%)	35 (54.3%)	25 (72.0%)

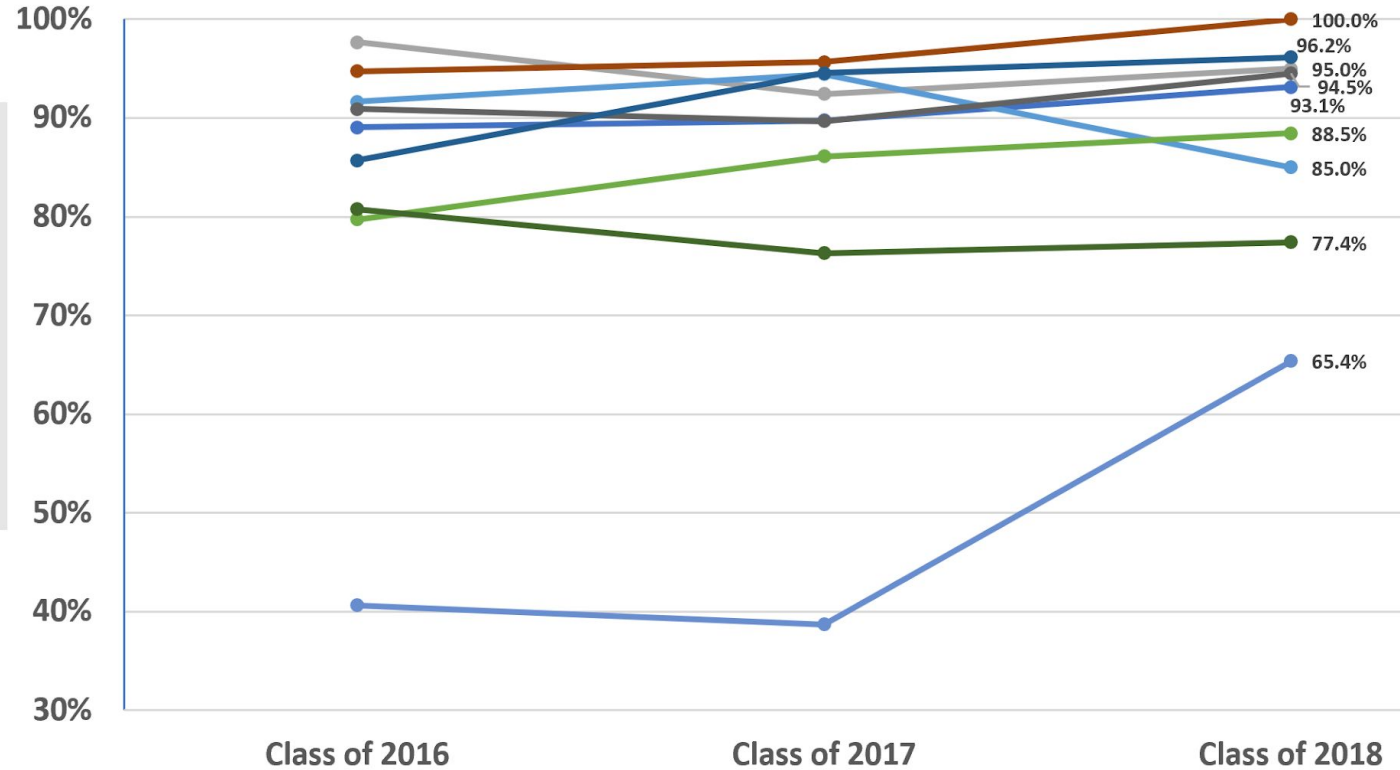
Capuchino A-G Science Requirement D - % Met by Graduating Class



Achievement Data - A-G Pass Rates Hillsdale

Cohort Counts, (% Met A-G Science Req. D)	Class of 2016	Class of 2017	Class of 2018
Hillsdale High School	302 (89.1%)	303 (89.8%)	335 (93.1%)
American Indian or Alaskan Native	1 (100.0%)	(0.0%)	(0.0%)
Asian	43 (97.7%)	53 (92.5%)	60 (95.0%)
Black or African American	4 (75.0%)	4 (50.0%)	6 (100.0%)
Filipino	12 (91.7%)	18 (94.4%)	20 (85.0%)
Latino	79 (79.7%)	72 (86.1%)	78 (88.5%)
Pacific Islander	4 (75.0%)	7 (100.0%)	1 (100.0%)
Two or More Races	38 (94.7%)	23 (95.7%)	24 (100.0%)
White	121 (90.9%)	126 (89.7%)	146 (94.5%)
EL in Mainstream	17 (70.6%)	11 (36.4%)	12 (50.0%)
RFEP	49 (85.7%)	55 (94.5%)	52 (96.2%)
Economically Disadvantaged	26 (80.8%)	38 (76.3%)	62 (77.4%)
Students with Disabilities	32 (40.6%)	31 (38.7%)	26 (65.4%)

Hillsdale A-G Science Requirement D - % Met by Graduating Class

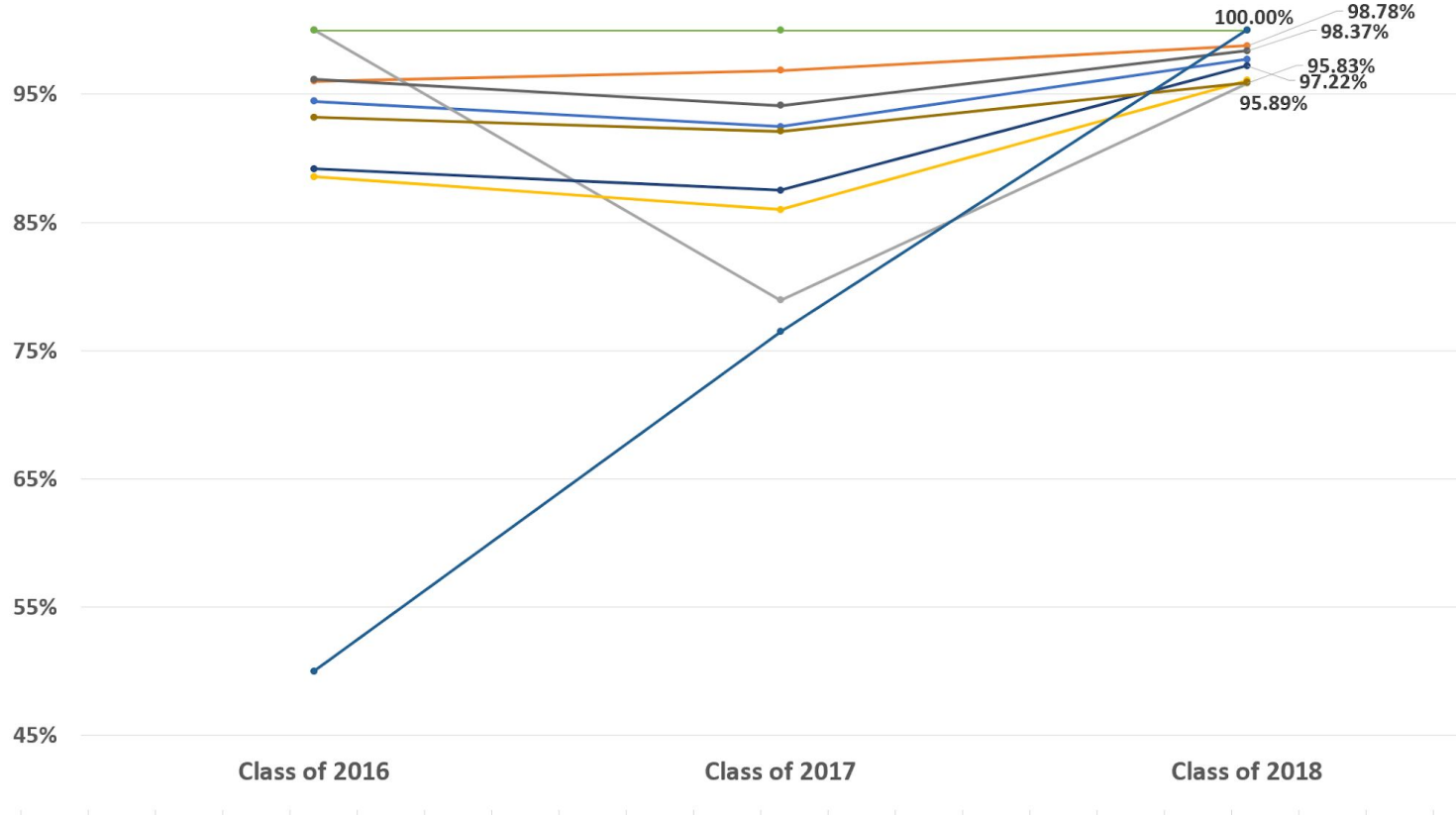
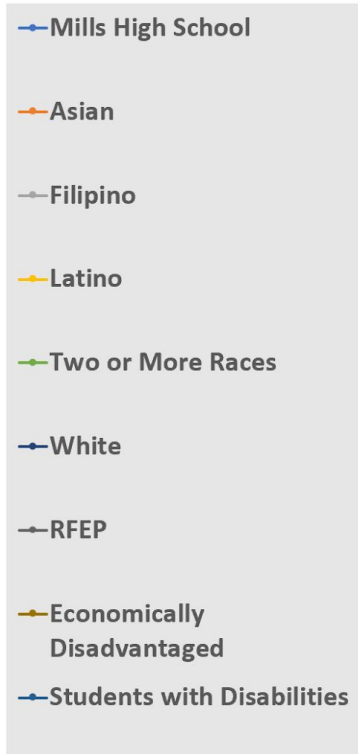


Achievement Data - A-G Pass Rates

Mills

Cohort Counts, (% Met A-G Science Req. D)	Class of 2016	Class of 2017	Class of 2018
Mills High School	271 (94.1%)	281 (93.2%)	313 (95.2%)
American Indian or Alaskan Native	1 (100.0%)	(0.0%)	(0.0%)
Asian	152 (95.4%)	129 (96.1%)	165 (98.2%)
Black or African American	(0.0%)	(0.0%)	2 (100.0%)
Filipino	18 (100.0%)	19 (78.9%)	24 (95.8%)
Latino	35 (88.6%)	51 (88.2%)	56 (87.5%)
Pacific Islander	3 (66.7%)	8 (100.0%)	7 (85.7%)
Two or More Races	25 (100.0%)	27 (100.0%)	23 (91.3%)
White	37 (89.2%)	47 (91.5%)	36 (97.2%)
EL in Mainstream	3 (66.7%)	7 (71.4%)	8 (50.0%)
RFEP	123 (96.1%)	103 (93.2%)	125 (96.8%)
Economically Disadvantaged	44 (93.2%)	37 (94.6%)	74 (89.2%)
Students with Disabilities	12 (50.0%)	22 (77.3%)	19 (63.2%)

Mills A-G Science Requirement D - % Met by Graduating Class

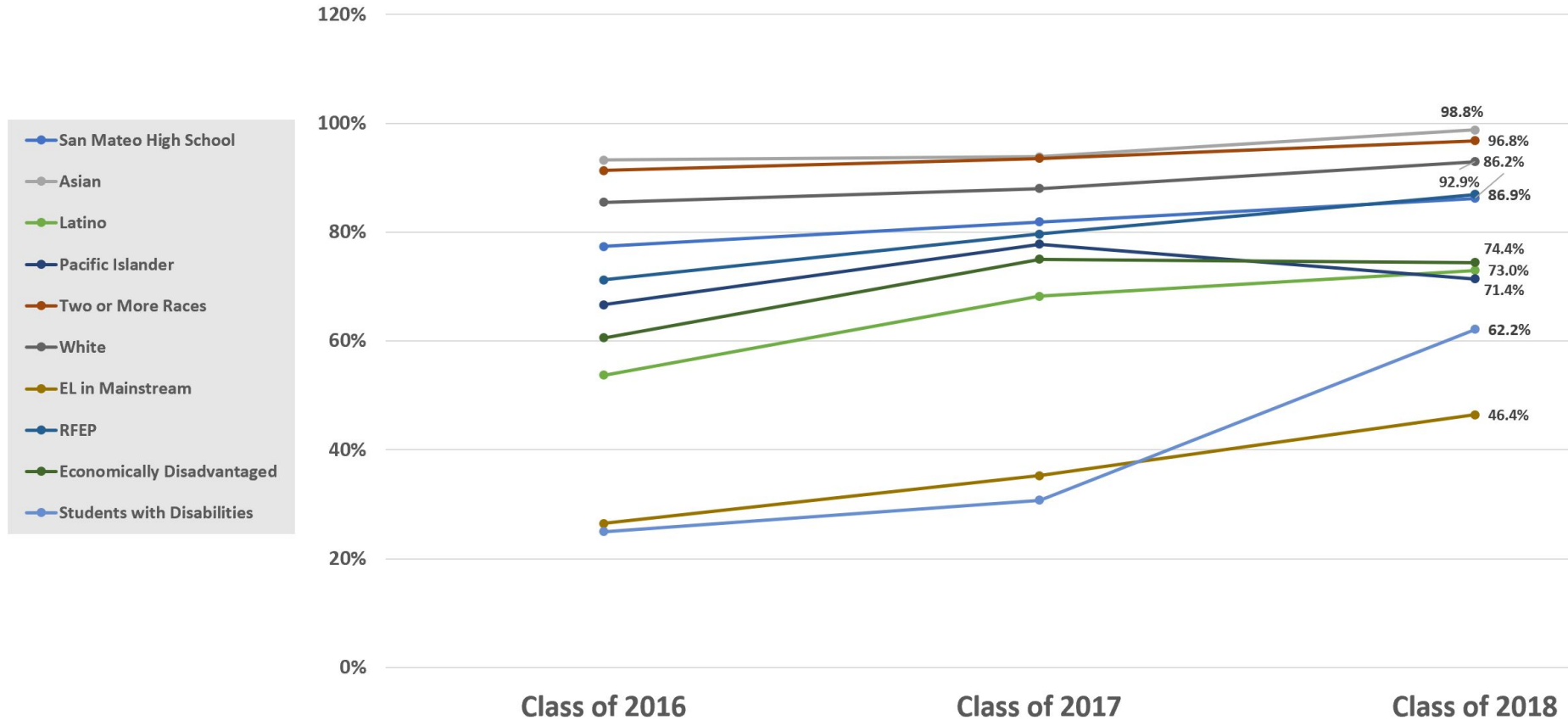


Achievement Data - A-G Pass Rates

San Mateo

Cohort Counts, (% Met A-G Science Req. D)	Class of 2016	Class of 2017	Class of 2018
San Mateo High School	327 (77.4%)	342 (81.9%)	370 (86.2%)
American Indian or Alaskan Native	1 (100.0%)	(0.0%)	(0.0%)
Asian	104 (93.3%)	81 (93.8%)	83 (98.8%)
Black or African American	2 (50.0%)	4 (50.0%)	6 (83.3%)
Filipino	18 (88.9%)	13 (92.3%)	10 (100.0%)
Latino	108 (53.7%)	129 (68.2%)	148 (73.0%)
Pacific Islander	9 (66.7%)	9 (77.8%)	7 (71.4%)
Two or More Races	23 (91.3%)	31 (93.5%)	31 (96.8%)
White	62 (85.5%)	75 (88.0%)	85 (92.9%)
EL in Mainstream	34 (26.5%)	17 (35.3%)	28 (46.4%)
RFEP	87 (71.3%)	118 (79.7%)	130 (86.9%)
Economically Disadvantaged	71 (60.6%)	80 (75.0%)	129 (74.4%)
Students with Disabilities	36 (25.0%)	26 (30.8%)	37 (62.2%)

San Mateo A-G Science Requirement D - % Met by Graduating Class

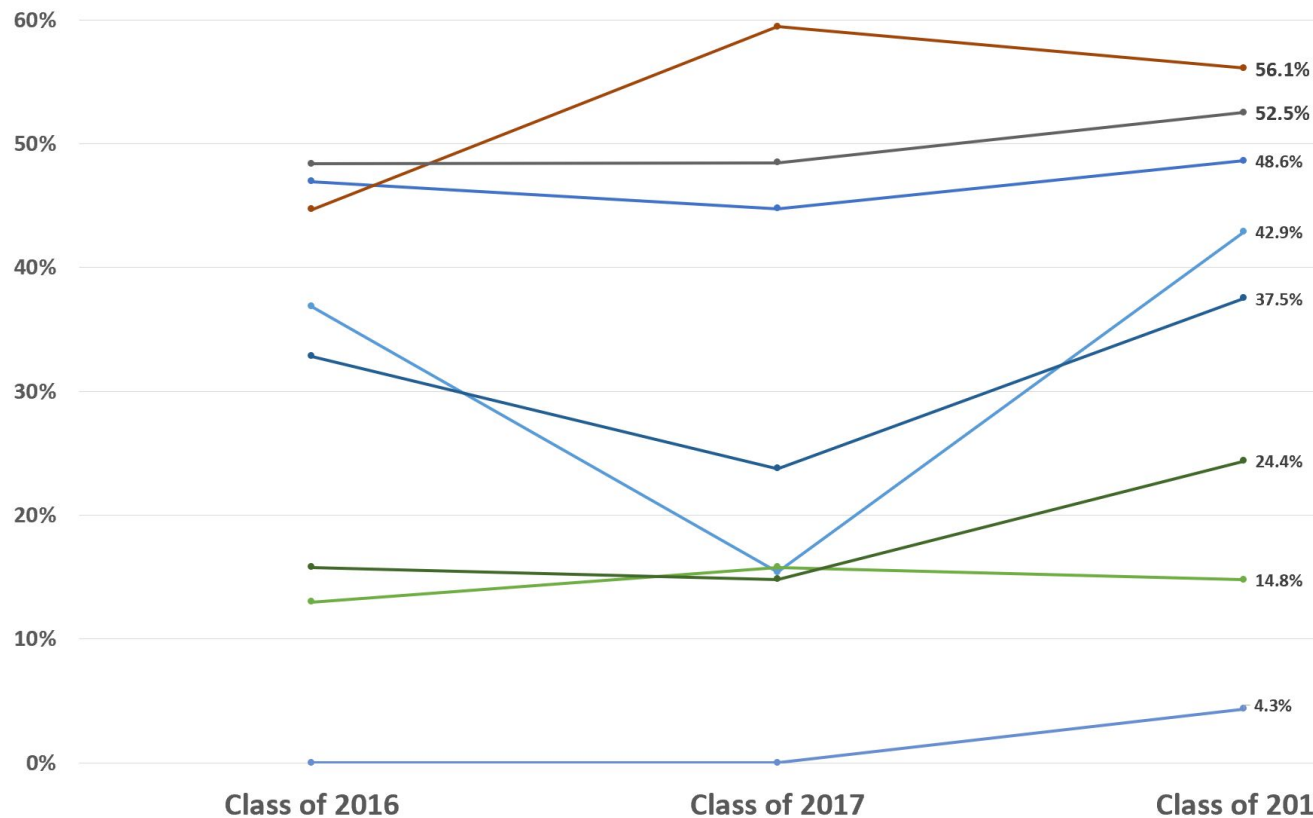


AP/IB Enrollment Percentages by Cohort

Aragon

Cohort Counts, (% of Students Enrolled in an AP/IB Course)	Class of 2016	Class of 2017	Class of 2018
Aragon High School	343 (46.9%)	333 (44.7%)	362 (48.6%)
American Indian or Alaskan Native	(0.0%)	2 (50.0%)	(0.0%)
Asian	94 (79.8%)	75 (81.3%)	96 (80.2%)
Black or African American	2 (0.0%)	5 (20.0%)	5 (20.0%)
Filipino	19 (36.8%)	13 (15.4%)	21 (42.9%)
Latino	77 (13.0%)	95 (15.8%)	88 (14.8%)
Pacific Islander	11 (27.3%)	9 (0.0%)	12 (8.3%)
Two or More Races	47 (44.7%)	37 (59.5%)	41 (56.1%)
White	93 (48.4%)	97 (48.5%)	99 (52.5%)
EL in Mainstream	10 (0.0%)	1 (0.0%)	9 (0.0%)
RFEP	67 (32.8%)	80 (23.8%)	72 (37.5%)
Economically Disadvantaged	38 (15.8%)	54 (14.8%)	78 (24.4%)
Students with Disabilities	23 (0.0%)	22 (0.0%)	23 (4.3%)

Aragon - AP Science Class Enrollment - % Met by Graduating Class

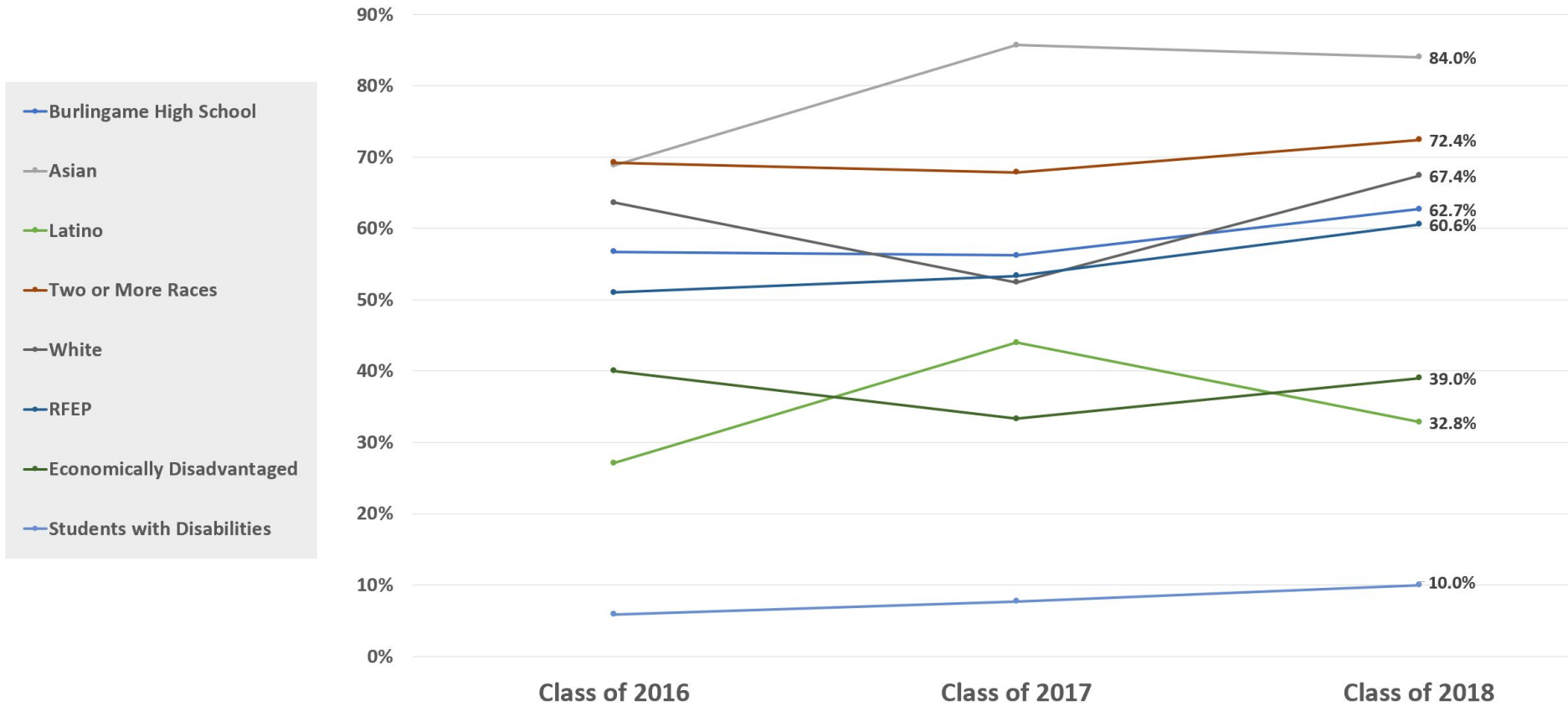


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American Indian or Alaskan Native	n/a	1 (100.0%)	1 (0.0%)
Asian	45 (68.9%)	42 (85.7%)	50 (84.0%)
Black or African American	3 (0.0%)	2 (0.0%)	n/a
Filipino	6 (33.3%)	7 (42.9%)	5 (40.0%)
Latino	48 (27.1%)	50 (44.0%)	67 (32.8%)
Pacific Islander	5 (0.0%)	3 (0.0%)	n/a
Two or More Races	26 (69.2%)	28 (67.9%)	29 (72.4%)
White	165 (63.6%)	164 (52.4%)	175 (67.4%)
EL in Mainstream	6 (0.0%)	4 (25.0%)	4 (25.0%)
RFEP	49 (51.0%)	60 (53.3%)	71 (60.6%)
Economically Disadvantaged	10 (40.0%)	18 (33.3%)	41 (39.0%)
Students with Disabilities	17 (5.9%)	13 (7.7%)	20 (10.0%)

Burlingame - AP Science Class Enrollment - % Met by Graduating Class

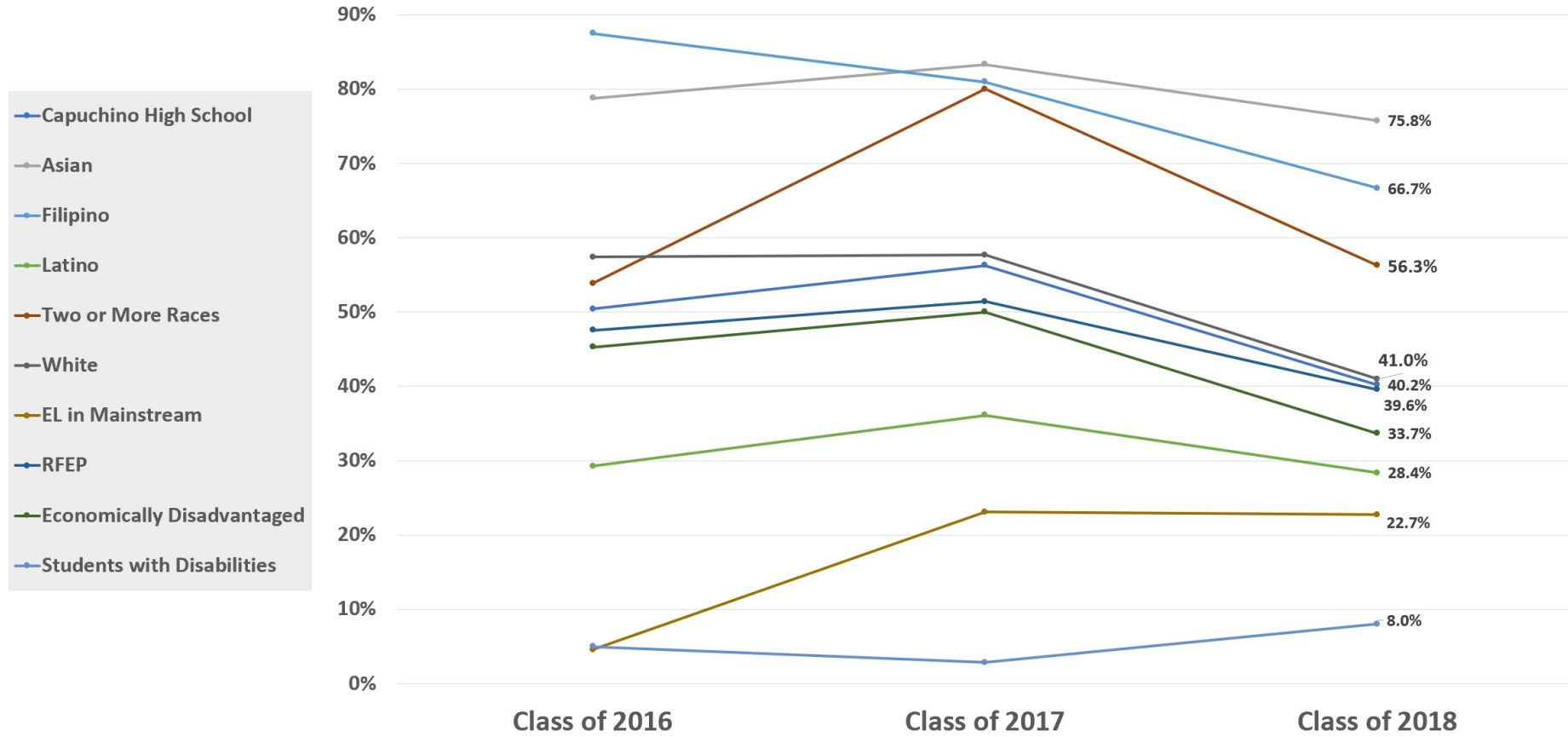


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Pacific Islander	9 (55.6%)	12 (75.0%)	13 (15.4%)
Two or More Races	26 (53.8%)	20 (80.0%)	16 (56.3%)
White	54 (57.4%)	52 (57.7%)	61 (41.0%)
EL in Mainstream	22 (4.5%)	13 (23.1%)	22 (22.7%)
RFEP	61 (47.5%)	70 (51.4%)	91 (39.6%)
Economically Disadvantaged	53 (45.3%)	60 (50.0%)	101 (33.7%)
Students with Disabilities	20 (5.0%)	35 (2.9%)	25 (8.0%)

Capuchino - AP/IB Science Class Enrollment - % Met by Graduating Class

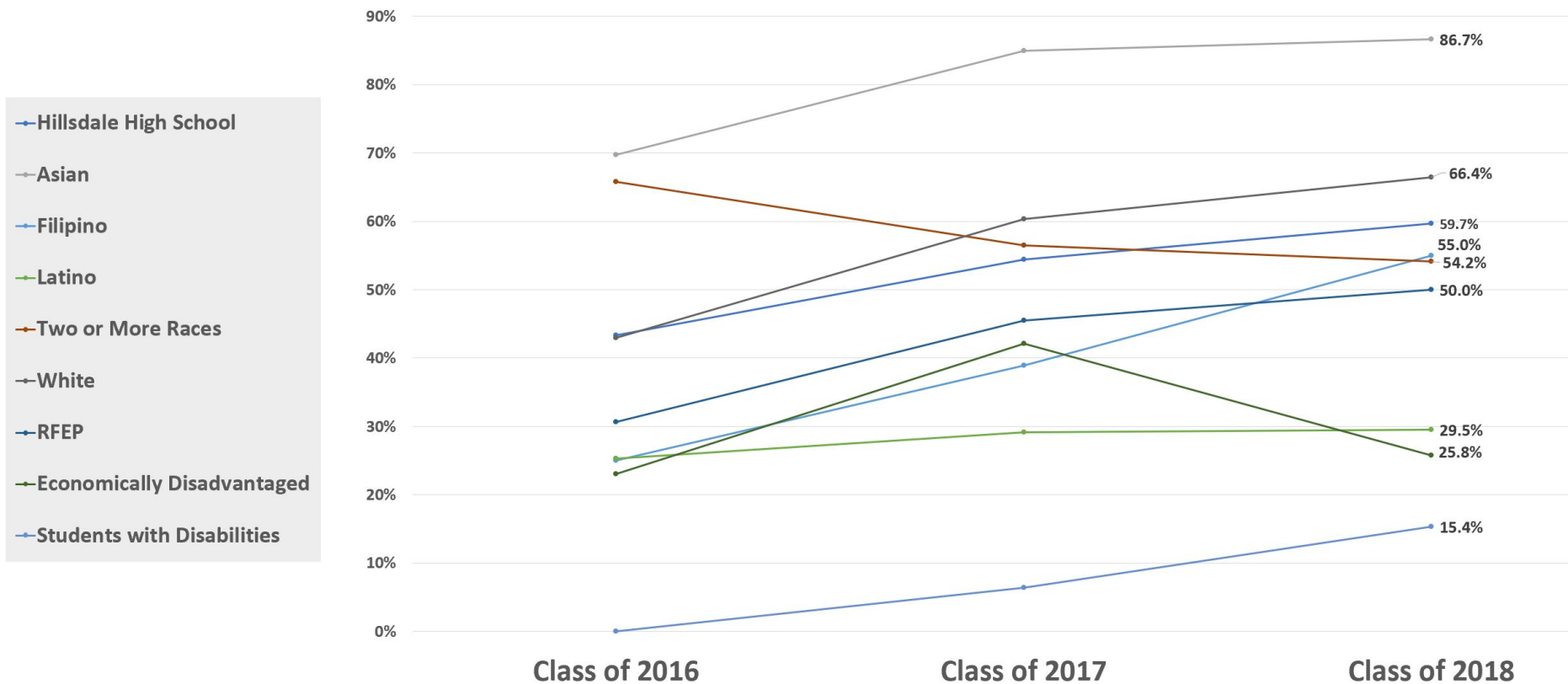


AP/IB Enrollment Percentages by Cohort

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Asian	43 (69.8%)	53 (84.9%)	60 (86.7%)
Black or African American	4 (25.0%)	4 (0.0%)	6 (66.7%)
Filipino	12 (25.0%)	18 (38.9%)	20 (55.0%)
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Hillsdale - AP Science Class Enrollment - % Met by Graduating Class



AP/IB Enrollment Percentages by Cohort

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Asian	152 (75.0%)	129 (61.2%)	165 (78.8%)
Black or African American	(0.0%)	(0.0%)	2 (0.0%)
Filipino	18 (33.3%)	19 (36.8%)	24 (37.5%)
Latino	35 (14.3%)	51 (17.6%)	56 (28.6%)
Pacific Islander	3 (0.0%)	8 (12.5%)	7 (14.3%)
Two or More Races	25 (28.0%)	27 (37.0%)	23 (43.5%)
White	37 (18.9%)	47 (38.3%)	36 (41.7%)
EL in Mainstream	3 (0.0%)	7 (0.0%)	8 (0.0%)
RFEP	123 (55.5%)	103 (49.5%)	125 (60.0%)
Economically Disadvantaged	44 (54.5%)	37 (51.4%)	74 (48.6%)
Students with Disabilities	12 (8.3%)	22 (4.5%)	19 (5.3%)

Mills - AP Science Class Enrollment - % Met by Graduating Class



AP/IB Enrollment Percentages by Cohort

San Mateo

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Filipino	18 (27.8%)	13 (38.5%)	10 (30.0%)
Latino	108 (2.8%)	129 (7.8%)	148 (4.1%)
Pacific Islander	9 (0.0%)	9 (22.2%)	7 (0.0%)
Two or More Races	23 (34.8%)	31 (35.5%)	31 (35.5%)
White	62 (38.7%)	75 (26.7%)	85 (41.2%)
EL in Mainstream	34 (2.9%)	17 (5.9%)	28 (0.0%)
RFEP	87 (19.5%)	118 (25.4%)	130 (21.5%)
Economically Disadvantaged	71 (7.0%)	80 (13.8%)	129 (10.1%)
Students with Disabilities	36 (0.0%)	26 (0.0%)	37 (2.7%)

San Mateo - AP/IB Science Class Enrollment - % Met by Graduating Class

