

# De Anza College Office of Institutional Research and Planning

**Date:** 5/19/2025

**To:** Math Department

**From:** Mallory Newell, Office of Institutional Research and Planning

**Subject:** *STEM Calculus Pathway Completion – Fall 23 to Winter 25*

---

## Introduction

At De Anza the STEM pathway usually begins with Precalculus 1 and 2 (MATH31 and MATH32) then students go on to complete the Calculus series which includes Calculus 1 (MATH1A) and Calculus 2 (MATH1B), Calculus 3 (MATH1C), Calculus 4 (MATH1D), Differential Equations (MATH2A) and Linear Algebra (MATH2B). Each course is 5 units. De Anza offers additional support through the Math Performance Success (MPS) program for Precalculus 1 and 2 (MATH31 and MATH32), Calculus 1 (MATH1A) and Calculus 2 (MATH1B). These courses are 5 units each, the same as traditional courses. Corequisite support courses are also offered with an additional 2.5-unit corequisite required. Based upon multiple measures placement using high school transcript information or guided self-placement, students can enroll directly in Calculus 1 (MATH1A) (see methodology for placement rules) or begin in precalculus (MATH31 or MATH32).

This analysis disaggregates students based on their declared major upon first enrollment in a math class. Students were grouped as STEM majors requiring completion of MATH1A and MATH1B and All Other Majors (see methodology section for a list of STEM majors). Based on articulation agreements, associate degrees for transfer (ADT) requiring completion of Calculus 1 require completion of both MATH1A and MATH1B for quarter schools (see methodology for list).

This analysis tracked students whose first enrollment in math was fall 2022 through spring 2023 to determine whether they completed MATH1A or MATH1B within one and two years (by winter 2025). Success includes A, B, C, and P grades including +/- grades. Courses include their corresponding honors sections. Students were included based on their first math course enrolled at De Anza. Results are disaggregated by course modality (face to face, online, hybrid) based on the course section number (Z, Y) as well as MPS (includes MP) and Corequisite (includes Q). Modality, MPS and Corequisite is based on the course characteristics of the first math course enrolled. Results are provided for STEM majors (see methodology) and All Other major, based on students' declared major as of first math course enrollment. Finally, results are disaggregated by a students self-reported highest high school math course taken and course grade.

Per AB 1705, STEM math pathways will need to be evaluated against the three standards of the law. The state Chancellor's Office has provided an evaluation template for colleges to use to evaluate transfer level preparatory courses prior to the required deadline of July 1, 2027 ([AB 1705 STEM Calculus Pathway Evaluation Template](#)). To support college's evaluation of AB 1705 standards, the state Chancellor's Office also provided an analysis of De Anza's STEM pathway disaggregated by high school preparation, this report can be accessed [here](#).

A follow up report will track: MPS sections vs. Non-MPS (face-to-face sections), students enrolled in only one instructional modality across all their course enrollments, students who were placed via Guided Self Placement compared to those placed via high school transcripts, "lowest placement students" as required by the state chancellor's office for validation in 2027. An additional analysis will explore students who successfully complete MATH1A but do not go on to complete MATH1B (i.e., did they change majors, drop out of De Anza, take longer than two years to complete, etc.).

## MATH1A and MATH1B Completion

**Table 1. Completion of MATH1A by First Course Enrollment, All Sections**

First Course Enrolled	One-Year Completion of MATH1A						Two-Year Completion of MATH1A					
	STEM Major			All Other Majors			STEM Major			All Other Majors		
	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate
MATH31	321	96	30%	521	83	16%	321	144	45%	521	127	24%
MATH32	104	62	60%	145	92	63%	104	70	67%	145	102	70%
MATH1A	460	408	89%	645	559	87%	460	416	90%	645	567	88%

- STEM majors starting in MATH31 had a 30% completion rate of MATH1A in one year which increased to 45% in two years compared to 16% for All Other Majors in one year and 24% in two years.
- STEM majors starting in MATH32 had a 60% completion rate of MATH1A in one year which increased to 67% in two years compared to 63% for All Other Majors in one year and 70% in two years.
- STEM students starting in MATH1A had an 89% completion rate of MATH1A in one year which increased to 90% in two years compared to 87% for All Other Majors in one year and 88% in two years.

**Table 2. Completion of MATH1B by First Course Enrollment, All Sections**

First Course Enrolled	One-Year Completion of MATH1B						Two-Year Completion of MATH1B					
	STEM Major			All Other Majors			STEM Major			All Other Majors		
	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate
MATH31	321	29	9%	521	19	4%	321	102	32%	521	72	14%
MATH32	104	42	40%	145	63	43%	104	63	61%	145	84	58%
MATH1A	460	276	60%	645	274	42%	460	313	68%	645	324	50%

- STEM majors starting in MATH31 had a 9% completion rate of MATH1B in one year which increased to 32% in two years compared to 4% for All Other Majors in one year and 14% in two years.
- STEM majors starting in MATH32 had a 40% completion rate of MATH1B in one year which increased to 61% in two years compared to 43% for All Other Majors in one year and 58% in two years.
- STEM students starting in MATH1A had a 60% completion rate of MATH1B in one year which increased to 68% in two years compared to 42% for All Other Majors in one year and 50% in two years.

**Table 3. Completion of MATH1A by First Course Enrollment, by MPS Sections**

First Course Enrolled	One-Year Completion of MATH1A						Two-Year Completion of MATH1A					
	STEM Major			All Other Majors			STEM Major			All Other Majors		
	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate
MATH31	49	11	22%	68	12	18%	49	15	31%	68	16	24%
MATH32	9	9	100%	15	12	80%	9	9	100%	15	12	80%
MATH1A	8	7	88%	20	18	90%	8	7	88%	20	18	90%

Note: First course enrollment was an MPS section.

- STEM majors starting in MATH31.MPS had a 22% completion rate of MATH1A in one year which increased to 31% in two years compared to 18% for All Other Majors in one year and 24% in two years.
- STEM majors starting in MATH32.MPS had a 100% completion rate of MATH1A in one year. All Other Majors had an 80% completion rate in one year. No other completions were gained when given an additional year, and for this reason, the data for two-year completion is the same as the one-year completion.
- STEM students starting in MATH1A.MPS had an 88% completion rate of MATH1A in one compared to 90% for All Other Majors in one year. A second year did not garner additional completions of MATH1B.

**Table 4. Completion of MATH1B by First Course Enrollment, MPS Sections**

First Course Enrolled	One-Year Completion of MATH1B						Two-Year Completion of MATH1B					
	STEM Major			All Other Majors			STEM Major			All Other Majors		
	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate
MATH31	49	4	8%	68	4	6%	49	10	20%	68	10	15%
MATH32	9	6	67%	15	6	40%	9	8	89%	15	9	60%
MATH1A	8	5	63%	20	11	55%	8	5	63%	20	12	60%

Note: First course enrollment was an MPS section. Cohorts with sample sizes below 10 are not discussed in the narrative.

STEM majors starting in MATH31.MPS had an 8% completion rate of MATH1B in one year which increased to 20% in two years compared to 6% for All Other Majors in one year and 15% in two years.

**Table 5. Completion of MATH1A by First Course Enrollment, Corequisite Sections (Q)**

First Course Enrolled	One-Year Completion of MATH1A						Two-Year Completion of MATH1A					
	STEM Major			All Other Majors			STEM Major			All Other Majors		
	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate
MATH31	48	12	25%	56	11	20%	48	21	44%	56	14	25%
MATH32	18	7	39%	14	8	57%	18	10	56%	14	8	57%

Note: First course enrollment was a corequisite (Q) section. MATH1A with corequisite support was not offered.

- STEM majors starting in MATH31.Q had a 25% completion rate of MATH1A in one year which increased to 44% in two years compared to 20% for All Other Majors in one year and 25% in two years.
- STEM majors starting in MATH32.Q had a 39% completion rate of MATH1A in one year which increased to 56% in two years. All Other Majors had a one-year completion rate of 57% in one and two years.

**Table 6. Completion of MATH1B by First Course Enrollment, Corequisite Sections (Q)**

First Course Enrolled	One-Year Completion of MATH1B						Two-Year Completion of MATH1B					
	STEM Major			All Other Majors			STEM Major			All Other Majors		
	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate
MATH31	48	4	8%	56	1	2%	48	14	29%	56	6	11%
MATH32	18	6	33%	14	6	43%	18	8	44%	14	7	50%

- STEM majors starting in MATH31.Q had an 8% completion rate of MATH1B in one year which increased to 29% in two years compared to 2% for All Other Majors in one year and 11% in two years.
- STEM majors starting in MATH32.Q had a 33% completion rate of MATH1B in one year which increased to 44% in two years compared to 43% for All Other Majors in one year and 50% in two years.

**Completion of MATH1A and MATH1B by Starting Course and Ethnicity<sup>1</sup>**

**Table 7. Completion of MATH1A by First Course Enrollment in MATH31, by Ethnicity**

Ethnicity	One-Year Completion of MATH1A						Two-Year Completion of MATH1A					
	STEM Major			All Other Majors			STEM Major			All Other Majors		
	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate
Asian	137	49	36%	158	30	19%	137	77	56%	158	45	28%
Black	15	2	13%	14	1	7%	15	4	27%	14	3	21%
Filipinx	31	8	26%	36	1	3%	31	13	42%	36	3	8%
Latinx	74	15	20%	161	8	5%	74	19	26%	161	17	11%
Native American				1	1	100%				1	1	100%
Pacific Islander	2	1	50%	7	3	43%	2	1	50%	7	3	43%
White	50	17	34%	99	16	16%	50	24	48%	99	25	25%
Decline to State	12	4	33%	45	23	51%	12	6	50%	45	30	67%
Total	321	96	30%	521	83	16%	321	144	45%	521	127	24%

- STEM majors starting in MATH31 who identify as Asian successfully completed MATH1A at a rate of 56% in two years followed by 50% for Decline to State. Compared to 26% for Latinx and 27% for Black STEM majors completing MATH1A in two years.
- This represents a 29-percentage point difference between Asian and Black STEM students in two years and a 30-percentage point difference between Asian and Latinx students in two years who are STEM majors.

<sup>1</sup> Student groups with less than 10 are not discussed in the results sections.

**Table 8. Completion of MATH1B by First Course Enrollment in MATH31, by Ethnicity**

Ethnicity	One-Year Completion of MATH1B						Two-Year Completion of MATH1B					
	STEM Major			All Other Majors			STEM Major			All Other Majors		
	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate
Asian	137	17	12%	158	6	4%	137	52	38%	158	26	16%
Black	15	0	0%	14	0	0%	15	3	20%	14	2	14%
Filipinx	31	1	3%	36	0	0%	31	9	29%	36	1	3%
Latinx	74	1	1%	161	2	1%	74	13	18%	161	8	5%
Native American				1	1	100%				1	1	100%
Pacific Islander	2	1	50%	7	1	14%	2	1	50%	7	2	29%
White	50	7	14%	99	1	1%	50	18	36%	99	12	12%
Decline to State	12	2	17%	45	8	18%	12	6	50%	45	20	44%
Total	321	29	9%	521	19	4%	321	102	32%	521	72	14%

- STEM majors starting in MATH31 who identify as Decline to State successfully completed MATH1B at a rate of 50% in two years followed by 38% for Asian and 36% for white. Compared to 18% for Latinx and 20% for Black STEM majors completing MATH1B in two years.
- This represents a 20-percentage point difference between Asian and Latinx students in two years and an 18-percentage point difference between Asian and Black students in two years who are STEM majors.

**Table 9. Completion of MATH1A by First Course Enrollment in MATH32, by Ethnicity**

Ethnicity	One-Year Completion of MATH1A						Two-Year Completion of MATH1A					
	STEM Major			All Other Majors			STEM Major			All Other Majors		
	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate
Asian	44	33	75%	63	47	75%	44	36	82%	63	48	76%
Black	2	0	0%	3	1	33%	2	0	0%	3	1	33%
Filipinx	6	1	17%	1	1	100%	6	2	33%	1	1	100%
Latinx	18	7	39%	15	4	27%	18	8	44%	15	8	53%
Native American	2	1	50%				2	1	50%			
Pacific Islander												
White	19	11	58%	19	4	21%	19	13	68%	19	6	32%
Decline to State	13	9	69%	44	35	80%	13	10	77%	44	38	86%
Total	104	62	60%	145	92	63%	104	70	67%	145	102	70%

- STEM majors starting in MATH32 who identify as Asian successfully complete MATH1A at a rate of 82% in two years followed by 77% for Decline to State and 68% for white. Compared to 44% for Latinx STEM majors completing MATH1A in two years.
- This represents a 38-percentage point difference between Asian and Latinx STEM students in two years who are STEM majors.

**Table 10. Completion of MATH1B by First Course Enrollment in MATH32, by Ethnicity**

Ethnicity	One-Year Completion of MATH1B						Two-Year Completion of MATH1B					
	STEM Major			All Other Majors			STEM Major			All Other Majors		
	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate
Asian	44	23	52%	63	34	54%	44	35	80%	63	41	65%
Black	2	0	0%	3	1	33%	2	0	0%	3	1	33%
Filipinx	6	0	0%	1	0	0%	6	1	17%	1	1	100%
Latinx	18	4	22%	15	2	13%	18	7	39%	15	4	27%
Native American	2	0	0%				2	0	0%			
Pacific Islander												
White	19	8	42%	19	2	11%	19	11	58%	19	3	16%
Decline to State	13	7	54%	44	24	55%	13	9	69%	44	34	77%
Total	104	42	40%	145	63	43%	104	63	61%	145	84	58%

- STEM majors starting in MATH32 who identify as Asian successfully complete MATH1B at a rate of 80% in two years followed by 69% for Decline to State and 58% for white. Compared to 39% for Latinx STEM majors completing MATH1B in two years.
- This represents a 41-percentage point difference between Asian and Latinx students in two years who are STEM majors.

**Table 11. Completion of MATH1A by First Course Enrollment in MATH1A, by Ethnicity**

Ethnicity	One-Year Completion of MATH1A						Two-Year Completion of MATH1A					
	STEM Major			All Other Majors			STEM Major			All Other Majors		
	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate
Asian	268	245	91%	352	316	90%	268	250	93%	352	320	91%
Black	6	5	83%	8	4	50%	6	5	83%	8	4	50%
Filipinx	28	24	86%	32	28	88%	28	24	86%	32	29	91%
Latinx	57	42	74%	88	65	74%	57	45	79%	88	67	76%
Native American				1	1	100%				1	1	100%
Pacific Islander	2	2	100%	6	5	83%	2	2	100%	6	5	83%
White	66	59	89%	67	51	76%	66	59	89%	67	52	78%
Decline to State	33	31	94%	91	89	98%	33	31	94%	91	89	98%
Total	460	408	89%	645	559	87%	460	416	90%	645	567	88%

- STEM majors starting in MATH1A who identify as Decline to State successfully completed MATH1A at a rate of 94% in two years followed by 93% for Asian and 89% for white. Compared to 79% for Latinx STEM majors completing MATH1A in two years.
- This represents a 14-percentage point difference between Asian and Latinx STEM students in two years.

**Table 12. Completion of MATH1A by First Course Enrollment in MATH1B, by Ethnicity**

Ethnicity	One-Year Completion of MATH1B						Two-Year Completion of MATH1B					
	STEM Major			All Other Majors			STEM Major			All Other Majors		
	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate
Asian	268	170	63%	352	169	48%	268	193	72%	352	199	57%
Black	6	2	33%	8	2	25%	6	3	50%	8	3	38%
Filipinx	28	13	46%	32	10	31%	28	18	64%	32	13	41%
Latinx	57	27	47%	88	19	22%	57	31	54%	88	24	27%
Native American				1	1	100%				1	1	100%
Pacific Islander	2	0		6	2	33%	2	0		6	2	33%
White	66	38	58%	67	23	34%	66	42	64%	67	27	40%
Decline to State	33	26	79%	91	48	53%	33	26	79%	91	55	60%
Total	460	276	60%	645	274	42%	460	313	68%	645	324	50%

- STEM majors starting in MATH1A who identify as Decline to State successfully completed MATH1B at a rate of 79% in two years followed by 72% for Asian. Compared to 54% for Latinx STEM majors completing MATH1B in two years.
- This represents an 18-percentage point difference between Asian and Latinx students in two years who are STEM majors.

**MATH1A and MATH1B Completion by Starting Level and Modality<sup>2</sup>**

**Table 13. Completion of MATH1A by First Course Enrollment in MATH31, by Modality**

Modality	One-Year Completion of MATH1A						Two-Year Completion of MATH1A					
	STEM Major			All Other Majors			STEM Major			All Other Majors		
	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate
Face to Face	160	39	24%	207	33	16%	160	61	38%	207	52	25%
Hybrid	77	22	29%	112	16	14%	77	42	55%	112	29	26%
Online	84	35	42%	202	34	17%	84	41	49%	202	46	23%

- One-year completion rates of MATH1A for STEM students starting in MATH31 are highest for students who enrolled in an online section, however, two-year completion rates of MATH1A are highest for those students who started in a hybrid section. A similar pattern exists for All Other Majors.

**Table 14. Completion of MATH1B by First Course Enrollment in MATH31, by Modality**

Modality	One-Year Completion of MATH1B						Two-Year Completion of MATH1B					
	STEM Major			All Other Majors			STEM Major			All Other Majors		
	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate
Face to Face	160	12	8%	207	7	3%	160	43	27%	207	27	13%
Hybrid	77	6	8%	112	3	3%	77	31	40%	112	21	19%
Online	84	11	13%	202	9	4%	84	28	33%	202	24	12%

- One-year completion rates of MATH1B for STEM students starting in MATH31 are highest for students who enrolled in an online section, and again, two-year completion rates of MATH1B are highest for those students who started in a hybrid section. A similar pattern exists for All Other Majors.

<sup>2</sup> Student groups with less than 10 are not discussed in the results sections.

**Table 15. Completion of MATH1A by First Course Enrollment in MATH32, by Modality**

Modality	One-Year Completion of MATH1A						Two-Year Completion of MATH1A					
	STEM Major			All Other Majors			STEM Major			All Other Majors		
	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate
Face to Face	70	40	57%	91	65	71%	70	48	69%	91	70	77%
Hybrid	4	3	75%	6	4	67%	4	3	75%	6	5	83%
Online	30	19	63%	48	23	48%	30	19	63%	48	27	56%

- One-year completion rates of MATH1A for STEM students starting in MATH32 are highest for students who enrolled in an online section. Though two-year completion is highest for students starting in a face-to-face section.

**Table 16. Completion of MATH1B by First Course Enrollment in MATH32, by Modality**

Modality	One-Year Completion of MATH1B						Two-Year Completion of MATH1B					
	STEM Major			All Other Majors			STEM Major			All Other Majors		
	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate
Face to Face	70	28	40%	91	48	53%	70	43	61%	91	60	66%
Hybrid	4	2	50%	6	4	67%	4	3	75%	6	4	67%
Online	30	12	40%	48	11	23%	30	17	57%	48	20	42%

- One-year completion rates of MATH1B for STEM students starting in MATH32 are the same for students who enrolled in a face to face or online section. Though two-year completion is highest for students starting in a face-to-face section.

**Table 17. Completion of MATH1A by First Course Enrollment in MATH1A, by Modality**

Modality	One-Year Completion of MATH1A						Two-Year Completion of MATH1A					
	STEM Major			All Other Majors			STEM Major			All Other Majors		
	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate
Face to Face	146	125	86%	159	140	88%	146	129	88%	159	142	89%
Hybrid	66	52	79%	96	72	75%	66	54	82%	96	77	80%
Online	248	231	93%	390	347	89%	248	233	94%	390	348	89%

- One- and two-year completion rates of MATH1A for STEM students starting in MATH1A are highest for students who started in an online section.

**Table 18. Completion of MATH1B by First Course Enrollment in MATH1A, by Modality**

Modality	One-Year Completion of MATH1B						Two-Year Completion of MATH1B					
	STEM Major			All Other Majors			STEM Major			All Other Majors		
	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate
Face to Face	146	97	66%	159	85	53%	146	104	71%	159	101	64%
Hybrid	66	37	56%	96	31	32%	66	43	65%	96	41	43%
Online	248	142	57%	390	158	41%	248	166	67%	390	182	47%

- One and two-year completion rates of MATH1B for STEM students starting in MATH1A are highest for students who enrolled in a face-to-face section.

## MATH1A and MATH1B Completion by Starting Level and High School Math

This section provides disaggregated outcomes by a student’s highest math course completed in high school. High school information is self-reported data from the CCCApply application. Based on De Anza’s current placement model, students who passed precalculus or higher receive a placement for MATH1A. Students who enrolled in precalculus but did not pass may receive a placement for MATH32. Students who did not enroll in precalculus receive a placement for MATH31 or MATH31.MPS. Any student can enroll in any course based on guided self-placement. Successful completion of a high school course includes A+, A, A-, B+, B, B-, C+, C, P grades.

NOTE: This section is based on De Anza’s current placement practices but follow up reports can disaggregate by the state’s definition of “lowest placement group” as required by July 1, 2027.

**Table 19. Completion of MATH1A by First Course Enrollment in MATH31, by High School Math**

Highest HS Math	One-Year Completion of MATH1A						Two-Year Completion of MATH1A					
	STEM Major			All Other Majors			STEM Major			All Other Majors		
	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate
Passed Precalculus or Higher	107	32	30%	146	23	16%	107	47	44%	146	34	23%
Enrolled Precalculus	33	10	30%	56	1	2%	33	16	48%	56	8	14%
No Precalculus	138	33	24%	230	24	10%	138	52	38%	230	37	16%
Unknown	43	21	49%	89	35	39%	43	29	67%	89	48	54%

- STEM majors starting in MATH31 without high school records available had the highest one- and two-year completion rates of MATH1A at 49% in one year and 67% in two years.
- Based on a student’s self-reported highest math course enrolled and grade, STEM majors who passed precalculus or higher had similar one-year completion rates of MATH1A at 30% as students who enrolled in precalculus but did not pass with slightly higher two-year completion rates of MATH1A for students who enrolled in precalculus but did not pass at 48% compared to 44% for students who passed precalculus or higher.

**Table 20. Completion of MATH1B by First Course Enrollment in MATH31, by High School Math**

Highest HS Math	One-Year Completion of MATH1B						Two-Year Completion of MATH1B					
	STEM Major			All Other Majors			STEM Major			All Other Majors		
	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate
Passed Precalculus or Higher	105	9	9%	149	2	1%	105	36	34%	149	18	12%
Enrolled Precalculus	35	3	9%	53	0	0%	35	6	17%	53	4	8%
No Precalculus	138	6	4%	230	6	3%	138	35	25%	230	18	8%
Unknown	43	11	26%	89	11	12%	43	25	58%	89	32	36%

- STEM majors starting in MATH31 without high school records available had the highest one- and two-year completion rates of MATH1B at 26% in one year and 58% in two years.
- STEM majors who passed precalculus or higher had similar one-year completion rates of MATH1A as students who enrolled in precalculus but did not pass at 9%. However, two-year completion rates of MATH1A were higher for STEM students who passed precalculus or higher at 34% compared to 17% for students who enrolled in precalculus but did not pass.

**Table 21. Completion of MATH1A by First Course Enrollment in MATH32, by High School Math**

Highest HS Math	One-Year Completion of MATH1A						Two-Year Completion of MATH1A					
	STEM Major			All Other Majors			STEM Major			All Other Majors		
	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate
Passed Precalculus or Higher	8	4	50%	11	4	36%	8	4	50%	11	4	36%
Enrolled Precalculus	41	22	54%	40	14	35%	41	25	61%	40	19	48%
No Precalculus	13	3	23%	17	8	47%	13	5	38%	17	10	59%
Unknown	42	33	79%	77	66	86%	42	36	86%	77	69	90%

- STEM majors starting in MATH32 without high school records available had a one-year completion rate of 79% and a two-year rate of 86%.
- STEM majors who enrolled in precalculus but did not pass had a slightly higher MATH1A completion rate in one year than students who passed precalculus or higher in high school, 54% vs 50%. This trend held for two-year completion rates of MATH1B at 61% compared to 50%.

**Table 22. Completion of MATH1B by First Course Enrollment in MATH32, by High School Math**

Highest HS Math	One-Year Completion of MATH1B						Two-Year Completion of MATH1B					
	STEM Major			All Other Majors			STEM Major			All Other Majors		
	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate
Passed Precalculus or Higher	8	3	38%	12	3	25%	8	4	50%	12	4	33%
Enrolled Precalculus	41	12	29%	39	5	13%	41	23	56%	39	11	28%
No Precalculus	13	1	8%	17	4	24%	13	3	23%	17	6	35%
Unknown	42	26	62%	77	51	66%	42	33	79%	77	63	82%

- STEM majors starting in MATH32 without high school records available had a one-year completion rate of 62% and a two-year rate of 79%.
- STEM majors who passed precalculus or higher in high school had the highest one-year completion rate of MATH1B at 38%, though students who enrolled in precalculus but did not pass had the highest two-year completion rate of MATH1B at 56%.

**Table 23. Completion of MATH1A by First Course Enrollment in MATH1A, by High School Math**

Highest HS Math	One-Year Completion of MATH1A						Two-Year Completion of MATH1A					
	STEM Major			All Other Majors			STEM Major			All Other Majors		
	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate
Passed Precalculus or Higher	289	253	88%	357	302	85%	289	258	89%	357	307	86%
Enrolled Precalculus	9	7	78%	15	10	67%	9	7	78%	15	10	67%
No Precalculus	58	48	83%	97	83	86%	58	50	86%	97	85	88%
Unknown	104	100	96%	176	164	93%	104	101	97%	176	165	94%

- STEM majors starting in MATH1A without high school records available had a one-year completion rate of MATH1A of 96% and a two-year rate of 97%.
- STEM majors who passed precalculus or higher in high school had the highest one-year completion rate of MATH1A at 88% and the highest two-year completion rate of MATH1B at 89%.

**Table 24. Completion of MATH1B by First Course Enrollment in MATH1A, by High School Math**

Highest HS Math	One-Year Completion of MATH1B						Two-Year Completion of MATH1B					
	STEM Major			All Other Majors			STEM Major			All Other Majors		
	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate	Cohort	Completion	Rate
Passed Precalculus or Higher	290	164	57%	356	135	38%	290	189	65%	356	162	46%
Enrolled Precalculus	8	3	38%	16	4	25%	8	5	63%	16	5	31%
No Precalculus	58	26	45%	97	27	28%	58	33	57%	97	37	38%
Unknown	104	83	80%	176	108	61%	104	86	83%	176	120	68%

- STEM majors starting in MATH1A without high school records available had a one-year completion rate of MATH1A of 80% and a two-year rate of 83%.
- STEM majors who passed precalculus or higher in high school had the highest one-year completion rate of MATH1A at 57% and the highest two-year completion rate of MATH1B at 65%.

## Methodology

### Cohort

Students were included based on their first math course enrolled at De Anza: MATH31, MATH32, or MATH1A/1AH from fall 2022 through spring 2023 and were tracked for two full years to winter 2025. Only a student whose first course of enrollment was either MATH31, MATH32 or MATH1A were included in each cohort. Successful completion includes A, B, C and P grades and corresponding +/- grades. Concurrently enrolled high school students were omitted from the analysis as AB 1705 does not apply to high school students.

MPS sections include those with a section number including MP or MPS. Corequisite sections include those with a section number including a Q. Students are grouped into MPS or corequisite if their first math course enrolled was in the designated section.

### Completion

Completion is defined as the number of students who start in MATH31, MATH32 or MATH1A and successfully complete MATH1A and/or MATH1B in one or two years. While C-ID articulates MATH1A and MATH1B together, and Associate Degrees for Transfer require both MATH1A and MATH1B when Calculus 1 is required, the analysis disaggregates completion of MATH1A and MATH1B separately. MATH1A is a prerequisite to enrollment in MATH1B.

### *Timeframe*

Cohort 1: Fall 2022 – Summer 2024

Cohort 2: Winter 2023 – Fall 2024

Cohort 3: Spring 2023 – Winter 2025

All students were tracked to successful completion of MATH1A and/or MATH1B in one or two years.

### *Placement*

Students are able to access STEM Calculus 1 in various ways, through high school transcripts, guided self-placement, transfer credits and a prerequisite challenge process. Any student has the option to self-place into any course, including Calculus 1A using the guided self-placement process, regardless of their high school preparation. All students with high school transcript data are given a placement based on the current (winter 2024) [criteria](#):

- Calculus 1A: Any high school GPA, completed high school precalculus with a C or higher
- MATH32: Any high school GPA, enrolled in but did not pass high school precalculus
- MATH31: High school GPA 2.6 or above and never enrolled in high school precalculus
- MATH31.MPS: High school GPA less than 2.6 and never enrolled in high school precalculus

### *Major*

Disaggregation by STEM major and All Other majors is provided. Major is based on a student's major upon first enrollment in a math course. STEM majors are grouped by those that require successful completion of both MATH1A and MATH1B include:

Chemistry (Assist.org; C-ID MATH210)

Computer Science for Transfer (ADT; C-ID MATH210)

Engineering (Assist.org)

Geology (Assist.org; C-ID MATH210)

Mathematics for Transfer (ADT; C-ID MATH210)

Physics (Assist.org; C-ID MATH210)

Physics for Transfer (Assist.org; C-ID MATH210)

Biology for Transfer (ADT; C-ID MATH210)

'All Other Majors' most often include: Business Administration Degree and Transfer Degree, Biology Degree, Economics Transfer Degree, Transfer Studies Degree, Psychology Degree for Transfer, Liberal Arts – Science, Math Engineering Degree. Majors within this category do not require MATH1A or MATH1B or offer an alternative such as MATH12.