

TK - 12 Mathematics Board Workshop 2021-2022

January 5, 2022

Presented by

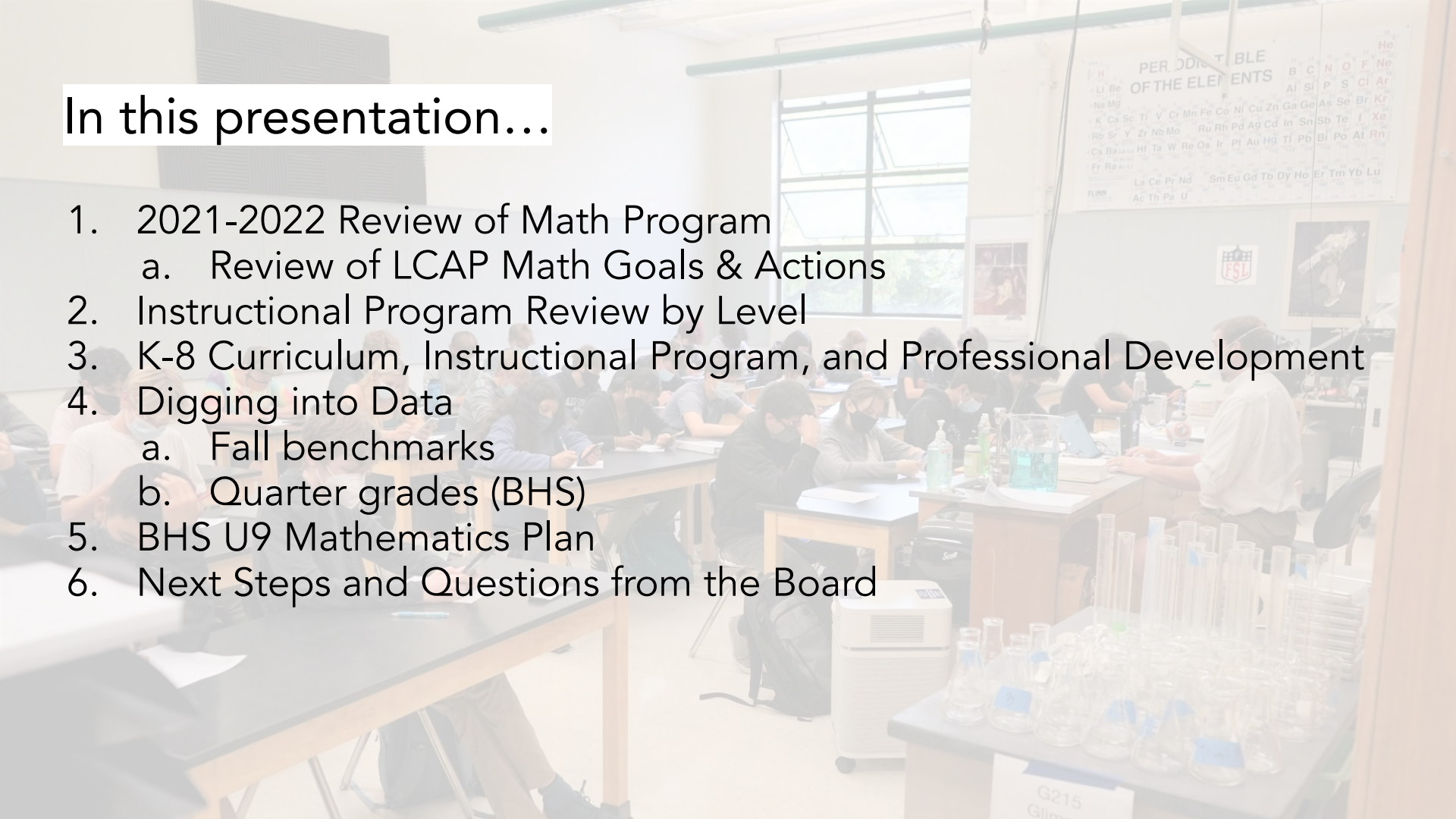
District and School site staff

Stronger Together.

Berkeley
PUBLIC SCHOOLS
Berkeley Unified School District

In this presentation...

1. 2021-2022 Review of Math Program
 - a. Review of LCAP Math Goals & Actions
2. Instructional Program Review by Level
3. K-8 Curriculum, Instructional Program, and Professional Development
4. Digging into Data
 - a. Fall benchmarks
 - b. Quarter grades (BHS)
5. BHS U9 Mathematics Plan
6. Next Steps and Questions from the Board



LCAP Goal and Math Actions

LCAP Goal 1: Provide high quality classroom instruction and curriculum that promotes college and career readiness, ends racial predictability, and ensures that all systems are culturally and linguistically responsive to student needs

LCAP Goal 2: Provide necessary and timely academic interventions to eliminate barriers to student success.

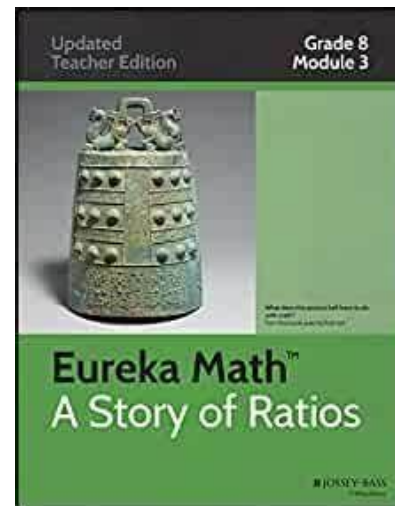
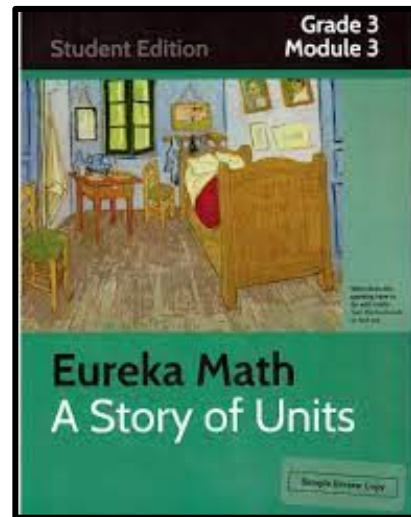
Action Item(s):

- 1.6 & 2.6 - Math Support Classes (grades 6-8)
- 1.9 - Math Training for Certificated Staff (TK-8)
- 1.12 - Math Coaches and Support (TK-12)
- 1.15 - Math Curriculum and Educator Engagement

K-8 Math Instructional Program Review

K-8

- Curriculum (Board adopted in 2011):
 - A Story of Units and a Story of Ratio// Eureka Math



6-8 Math Supplemental Curriculum

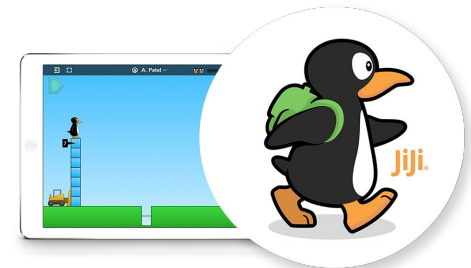
Supplemental curriculum:
Desmos



K-8 Targeted Interventions in Mathematics

1st-5th

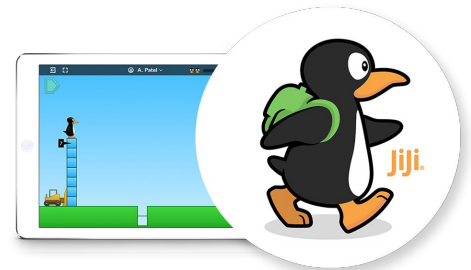
- Intervention is delivered in small groups and through co-teaching with the classroom teacher
- Curriculum and programs used include: ST Math, MathXL and Eureka Math extensions.
- Other approaches include:
 - Math fluency routines and games
 - Math re-engagement lessons to pre-teach and reteach concepts
 - Coaching teachers on effective instructional strategies



K-8 Targeted Interventions in Mathematics

6th-8th

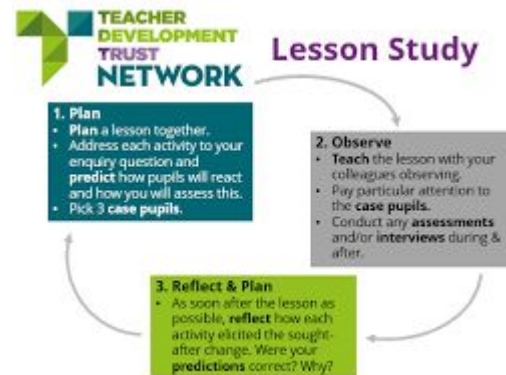
- Students can enroll in an additional math class
 - Math support
 - Math intervention
- Curriculum and programs include Math 180, ST Math, IXL Math
- Other approaches include:
 - Math fluency routines
 - Math re-engagement lessons to pre-teach and reteach concepts



Mathematics Professional Development 2021-22

K-5th

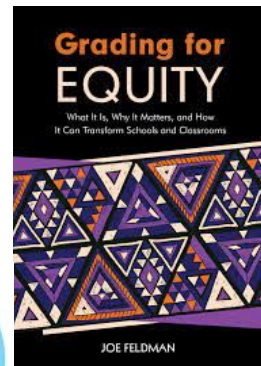
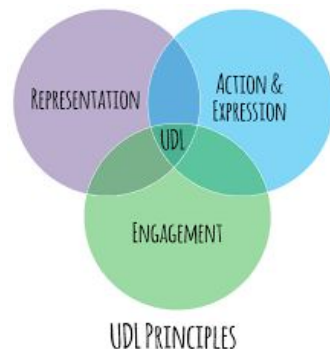
- Math Team Leads collaborate 2x a month
 - Focus on Lesson Study and developing instructional leadership at sites
- RTI lead teachers meet 1x a month
 - Focus on inquiry work to examine and improve systems and practices to support students
- Coaching:
 - District Math Lead
 - Varied by site
- Silicon Valley Math Initiative- Special Ed and RtI
 - 5x per year-focus on Student Agency/Discourse
- Districtwide Professional Development (2x per year)
 - Focus on the Common Core Mathematics Standards (making meaning) and Abolitionist Teaching (5 Pursuits)
- Site based Professional Development
 - Focus and frequency determined by sites



Mathematics Professional Development 2021-22

6th-8th

- Math Team Leads collaborate 2x a month
 - Focus is on student discourse and effective instructional practices
- RTI lead teachers meet 2x a month
 - Focus on intervention/ support systems progress monitoring
- Grading for Equity Pilot (5 teachers across sites)
- Coaching:
 - District Math Lead
 - Varied by site
- Districtwide Professional Development (2x per year)
 - Focus on the Common Core Mathematics Standards and Abolitionist Teaching (5 Pursuits)
- Districtwide collaboration (5x per year)
 - Focus on the Instructional Core, Universal Design for Learning, and Abolitionist Teaching (5 Pursuits)



Questions from the Board



K-12 Math Data (Appendix)

What does the data show us?

Each data set disaggregated by Demo 1 (race) or Demo 2 (programs). For groups with less than 10 students no data is shown.

- Kindergarten through 2nd grade includes fall math benchmark
- 3rd through 8th grade includes fall STAR Mathematics benchmark
- 6th through 8th grade quarter report card grades for mathematics Standards Based Progress (SBP) & Habits of Work (HOW)
- Secondary - Report card grades for Quarter 1 by Math courses



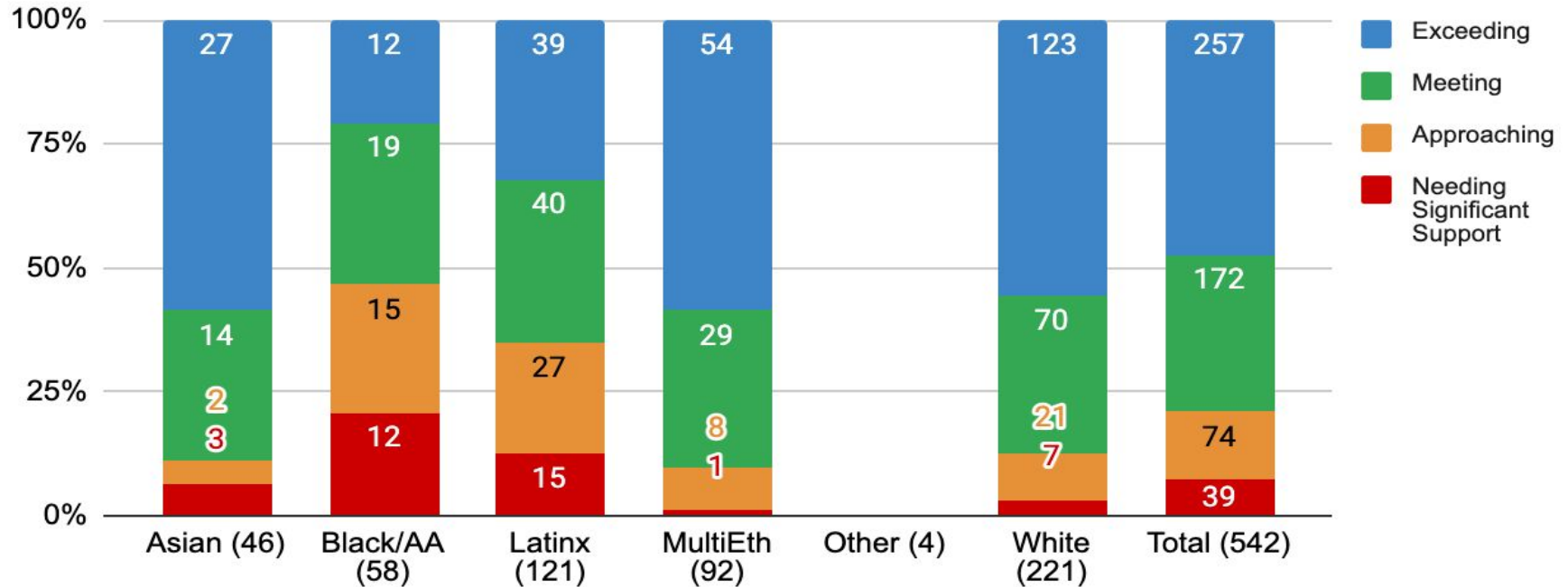
Math Data Discussion Protocol

LCAP Goal 1: Provide high quality classroom instruction and curriculum that promotes college and career readiness, **ends racial predictability, and ensures that all systems are culturally and linguistically responsive to student needs**

- Does the math data show differences in outcomes for specific subgroups?
- Which subgroups show the highest performance levels?
- Which subgroups are underperforming?
- Are these patterns consistent at each grade level?
- What could explain these differences in student performance?
- Is there additional data needed to explain why these differences in student performance exist?
- Do high school students have equitable access to high level math classes?

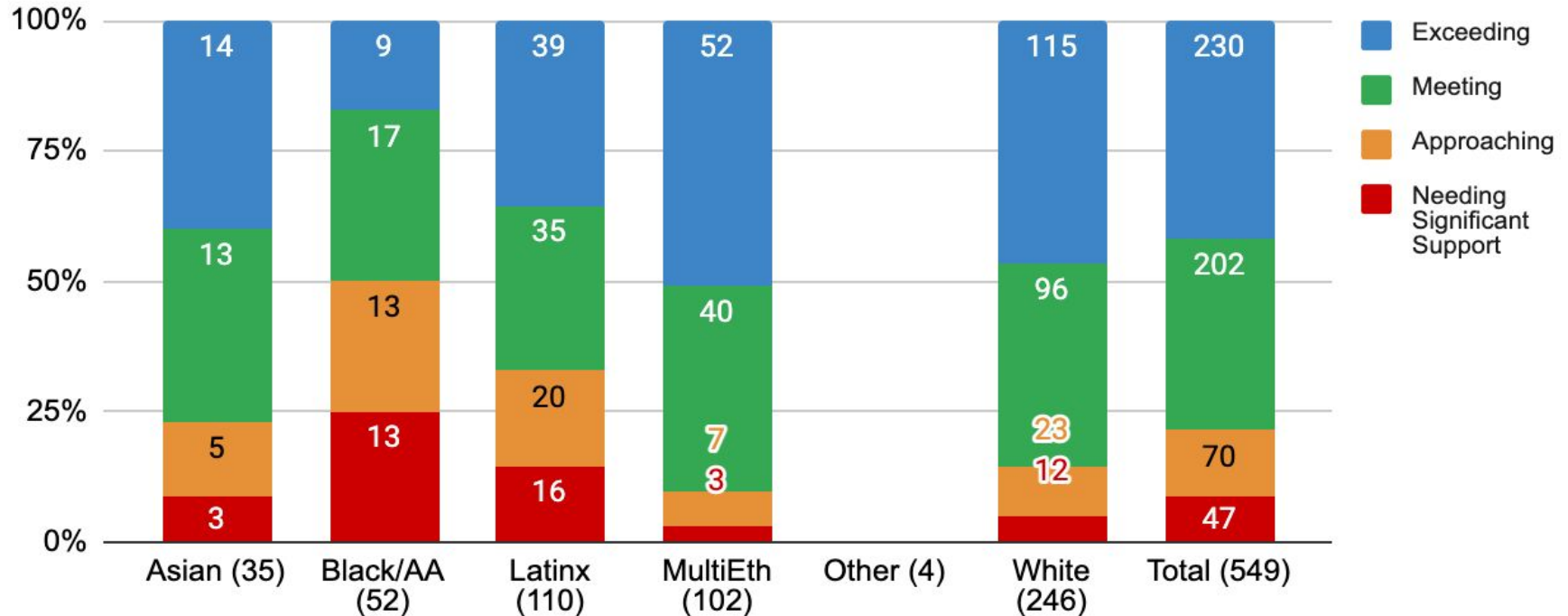
Math Data Discussion Protocol

First Grade Fall 21 Math Benchmark Demographic One



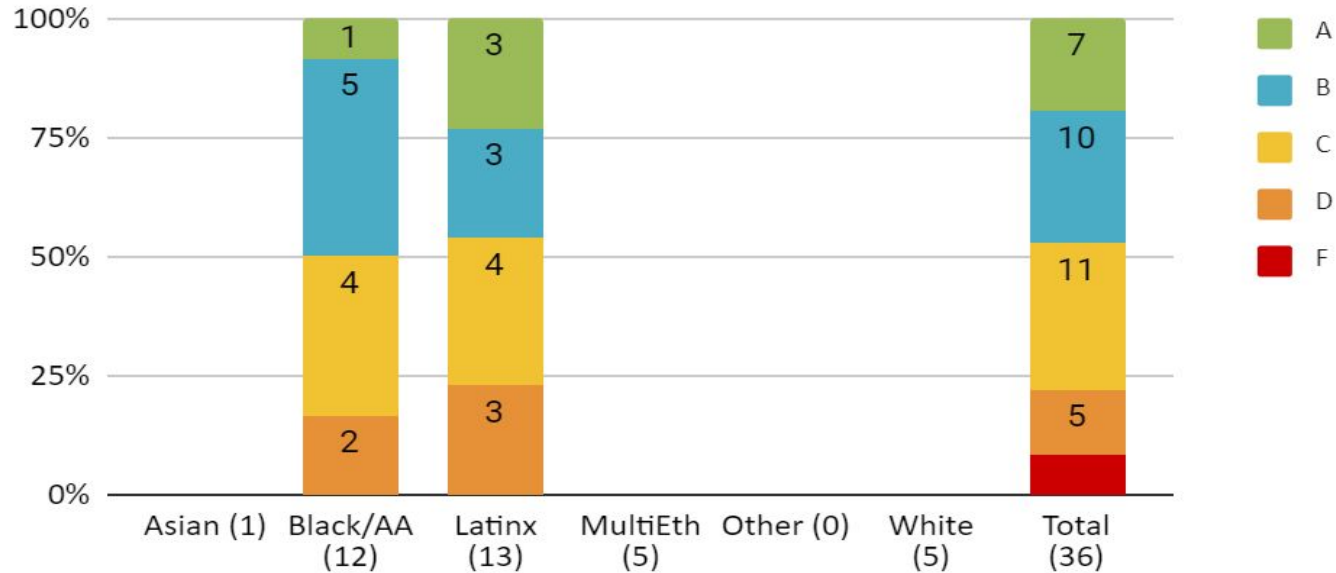
Math Data Discussion Protocol

Second Grade Fall 21 Math Benchmark Demographic One



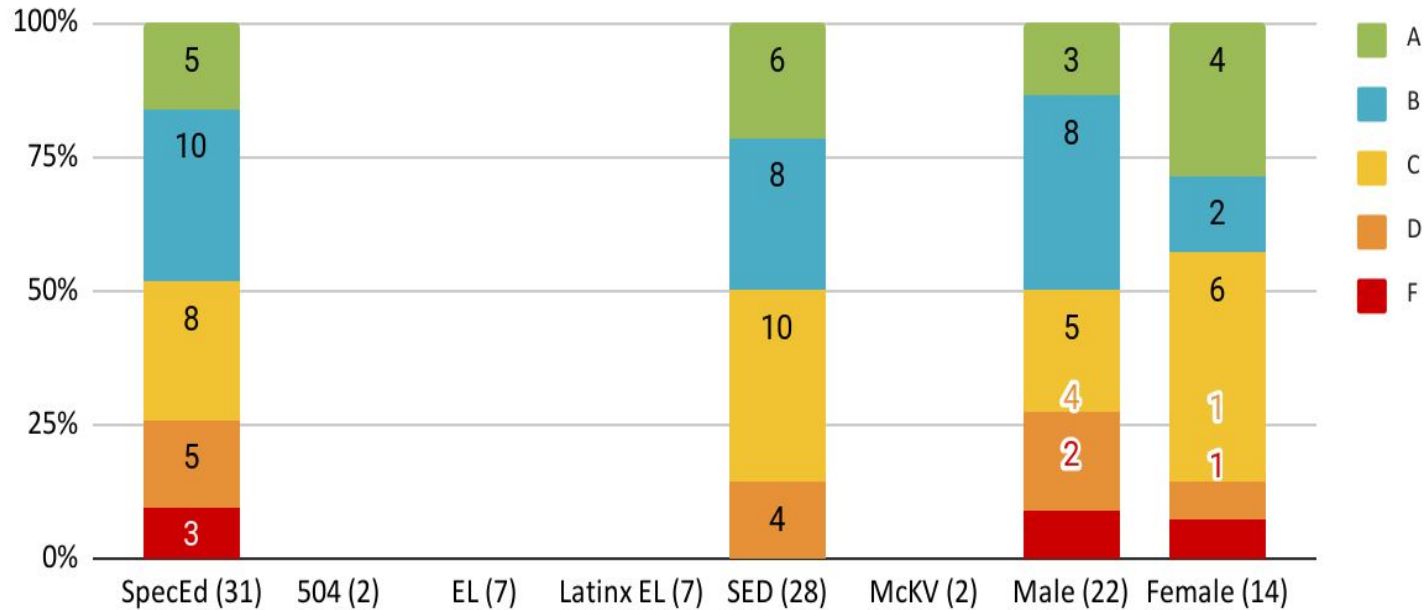
Math Data Discussion Protocol

BHS Math 1x Demographic One Q1 21



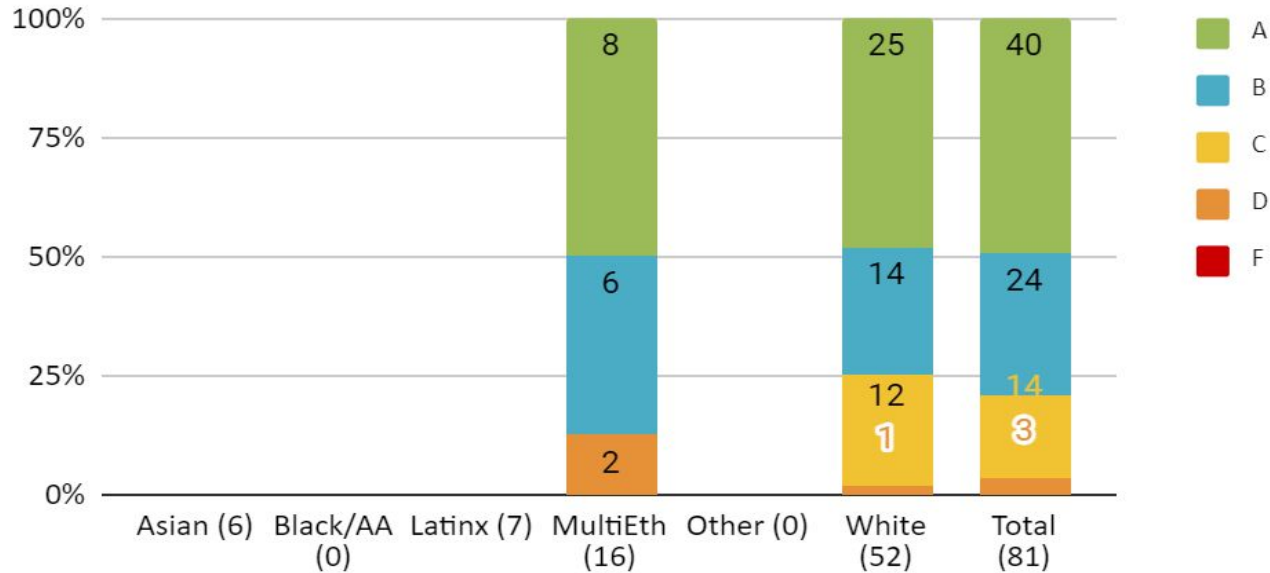
Math Data Discussion Protocol

BHS Math 1x Demographic Two Q1 21



Math Data Discussion Protocol

BHS Adv Math 3 Demographic One Q1 21



Math Data Discussion Protocol

LCAP Goal 2: Provide necessary and timely academic interventions to eliminate barriers to student success.

- Based on the differences in performance for the student subgroups, which groups are most in need of intervention/support?
- What programs/interventions are already in place to address these differences in student performance? (Q and A: Site teams?).
- Does it appear that these programs are working?
- Is there additional information needed to show the connection between the interventions that are in place and the effect that these interventions are having on student learning outcomes?

Questions from the Board regarding the math data



Keep it mathematical,
Jackets!

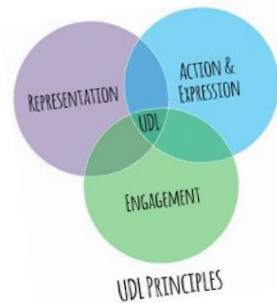


Berkeley High School Math

- A brief history of math sequencing at BHS
- 2021-2022 Changes
- Next steps
- Needs

High School Mathematics: 2021-2022 Changes

- No INE Algebra for 9th graders
- Special education case managers partner with Math 1 teachers to provide push-in support three periods per day and collaboration outside class time
- Math 1x class for juniors & seniors who have not passed Math 1 - smaller class size; currently hiring classroom assistant for Semester 2
- Universal Design for Learning PD provided for all BHS teachers at start of 2021-22 school year
- Five U9 Math 1 teachers have a LEAP. The Subject Lead/Hive Lead math teachers have access for push-in support to their Hive's LEAPs during their prep



LEAP Class: Who, What, When?

who: Each class will have 8-10 focal students selected and recruited through counselor recommendations; district reading and math scores.
voluntary.

Next Steps/Needs

- Maximize U9 LEAP class by requiring this course for students who are failing math in order to delivery supplemental instruction & support; this is a significant investment in 9th grade support/intervention that is under-utilized
- Create a **full inclusion U9 Math 1 course** for ALL 9th graders
 - FTE needed for differentiation in Math 1 classes
 - Enrichment for high performing students who want to enroll in Advanced Math 2
 - Support for students entering with skills below grade level
- Expanding math coach support at K-12 level to support teachers and students and create parity with investment in literacy coaching
- Expanding capacity of support staff to assist students with math



Next Steps/Needs

- Continued / increase support and collaboration with special education dept. to ensure all students with IEPs receive appropriate accommodations and modifications in general education math classes
- Continue to provide targeted math professional development for math teachers customized by level: elementary, middle, high school.
- Invest in screening diagnostic for all incoming 9th grade students to identify math skill level to place students in LEAP at the start of the school year.
- Improved collaboration and alignment 6-12, especially 8-9.
- Improve recruitment and retention of qualified math teachers
- Build on last summer's 9th grade summer school class

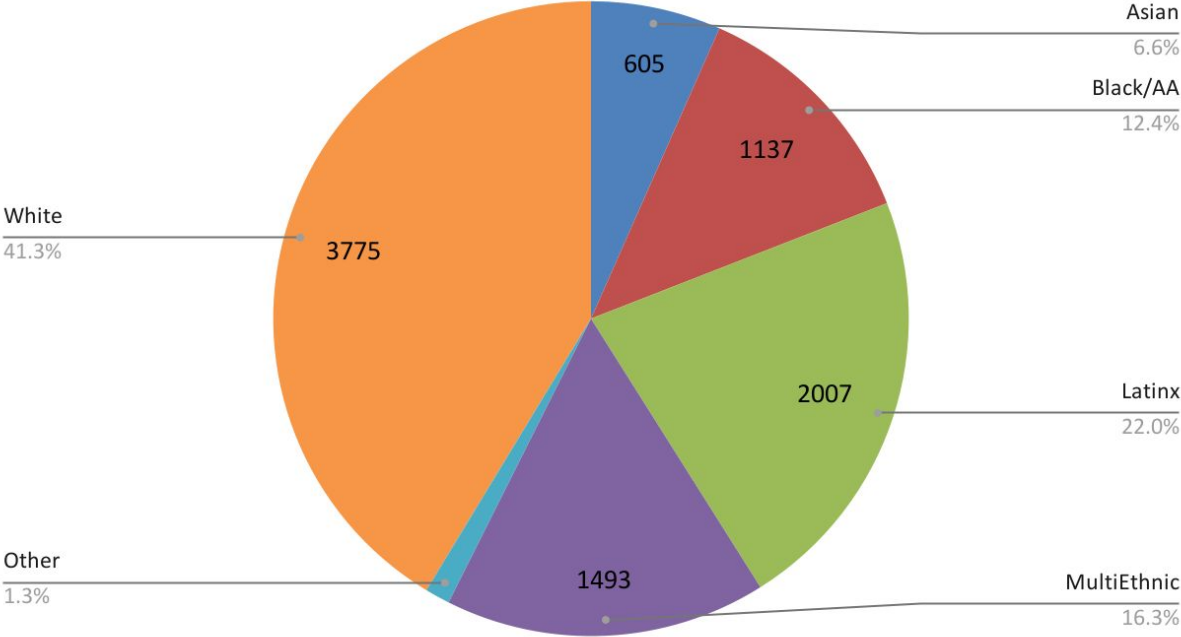
Questions from the Board Berkeley High Math Programming



Appendix



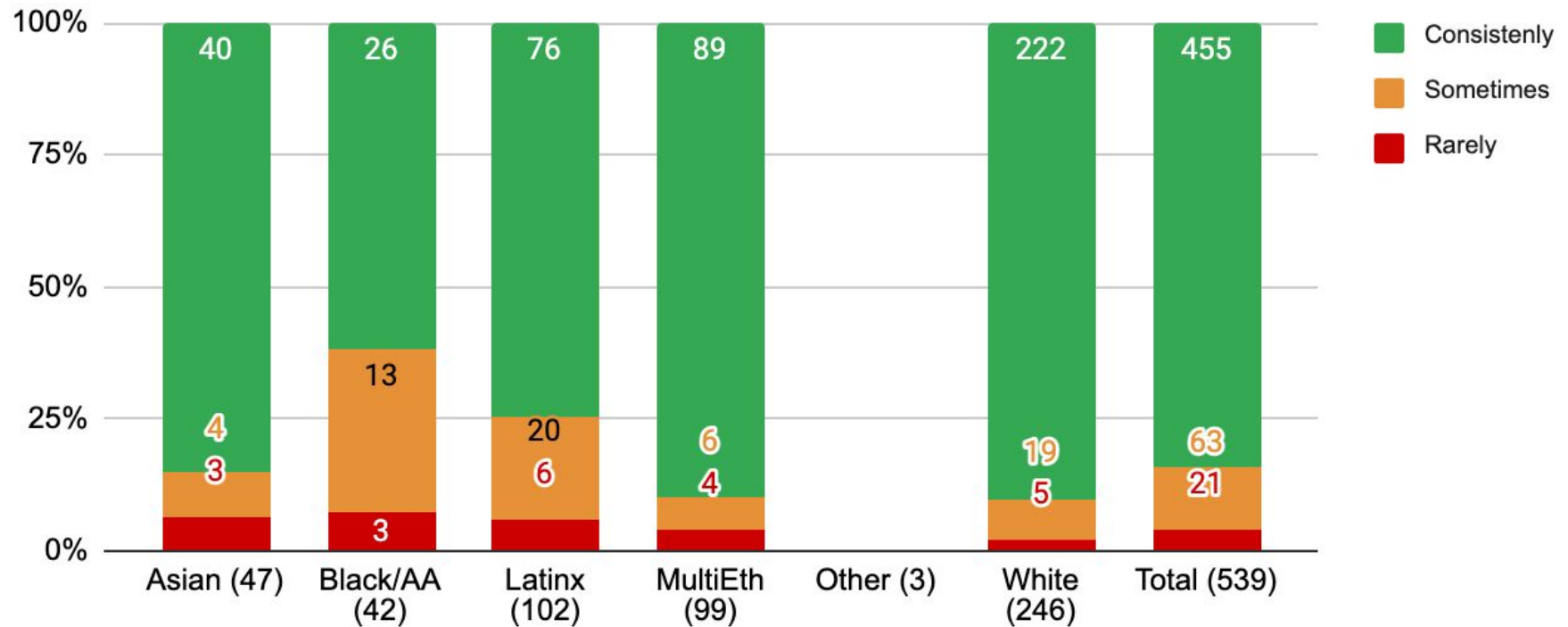
District TK-12 Enrollment Oct '21



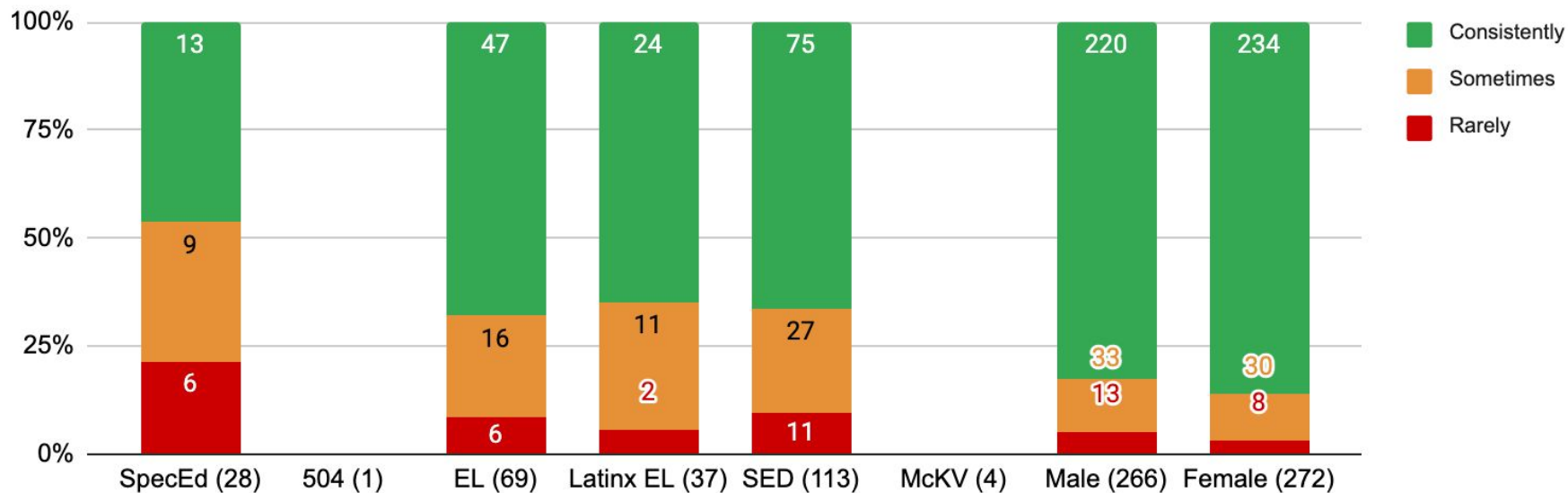
District Enrollment by Race

	Elementary	Middle School	High School	District
Asian	8.8% (342)	8.2% (165)	6.9% (228)	8.0% (735)
Black/Afr Am	11.2% (436)	14.0% (281)	12.9% (424)	12.4% (1141)
Latinx	21.4% (830)	23.9% (478)	21.0% (693)	21.8% (2001)
Latinx EL*	183	76	81	340
MultiEthnic**	15.5% (601)	14.3% (286)	15.1% (496)	15.1% (1383)
Other	1.2% (47)	1.1% (22)	1.3% (43)	1.2% (112)
White	41.9% (1624)	38.4% (769)	42.8% (1411)	41.5% (3804)
Overall	3880	2001	3295	9176

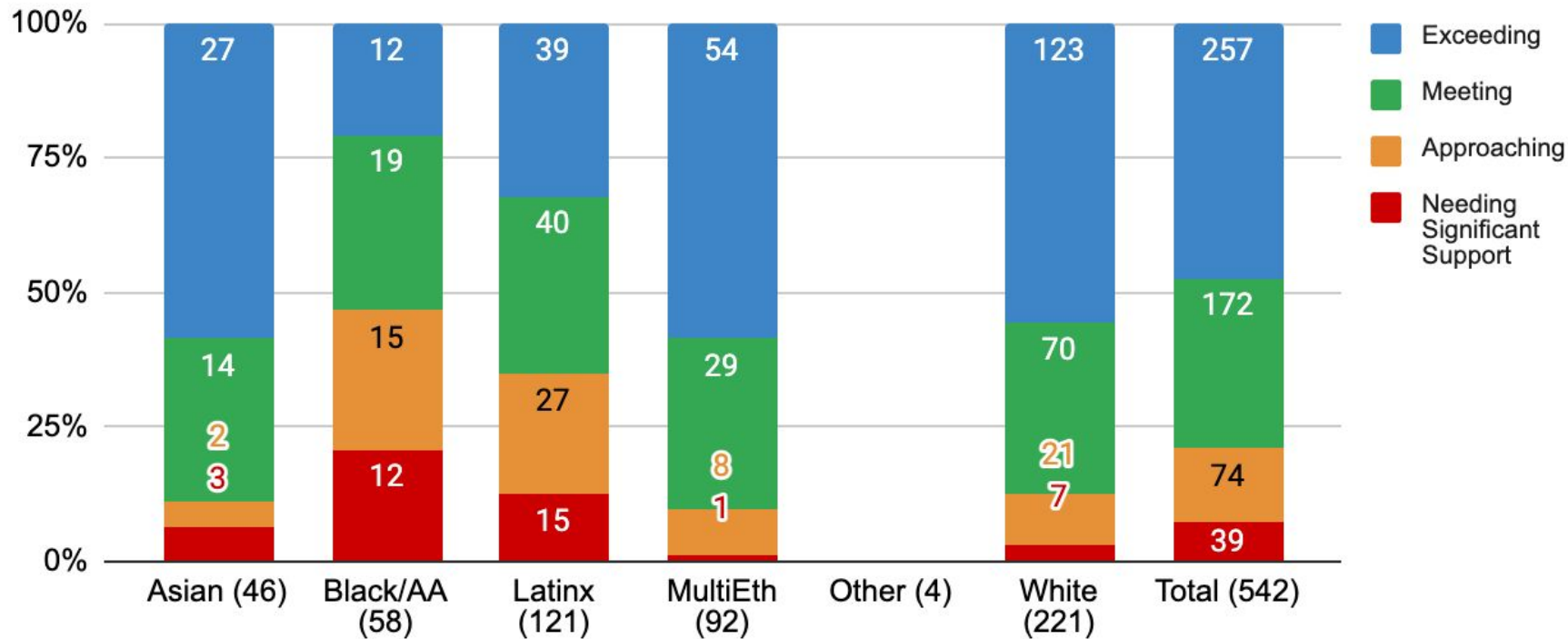
Kindergarten Fall 21 Math Benchmark Demographic One



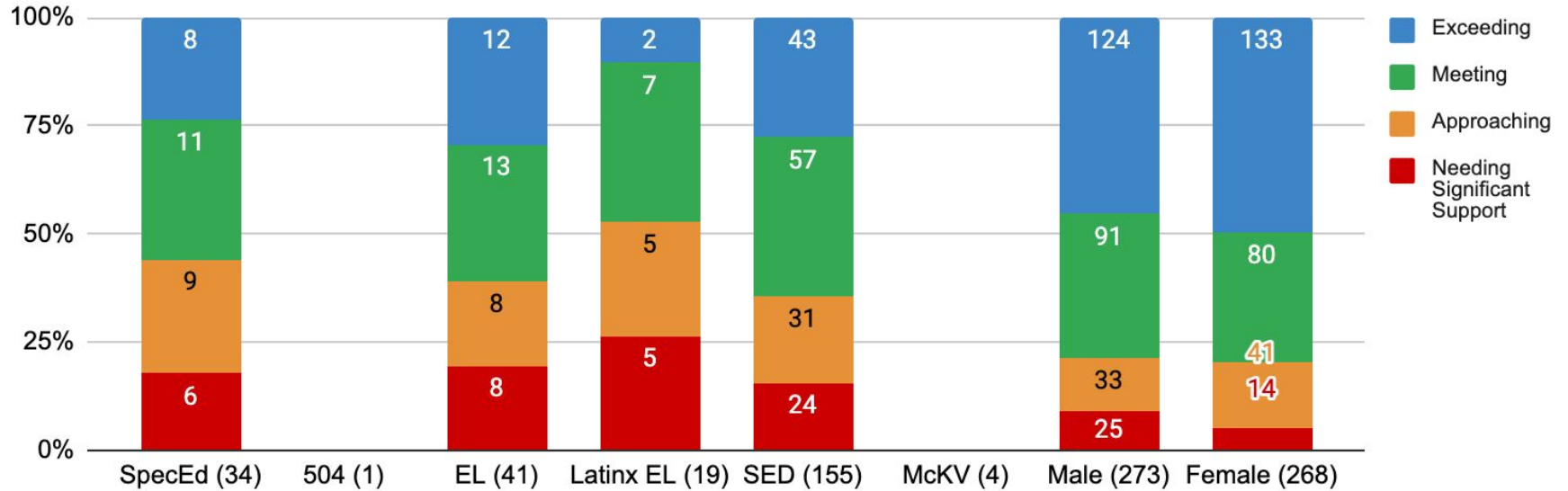
Kindergarten Fall 21 Math Benchmark Demographic Two



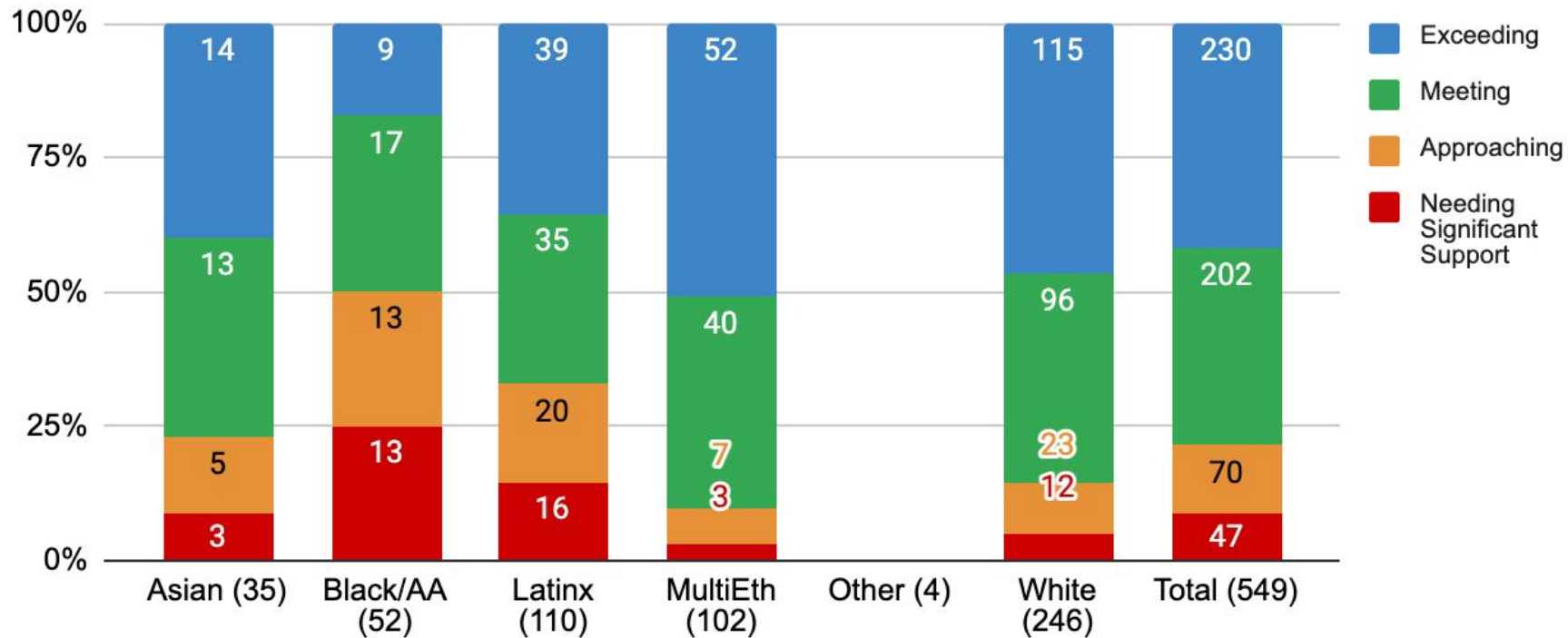
First Grade Fall 21 Math Benchmark Demographic One



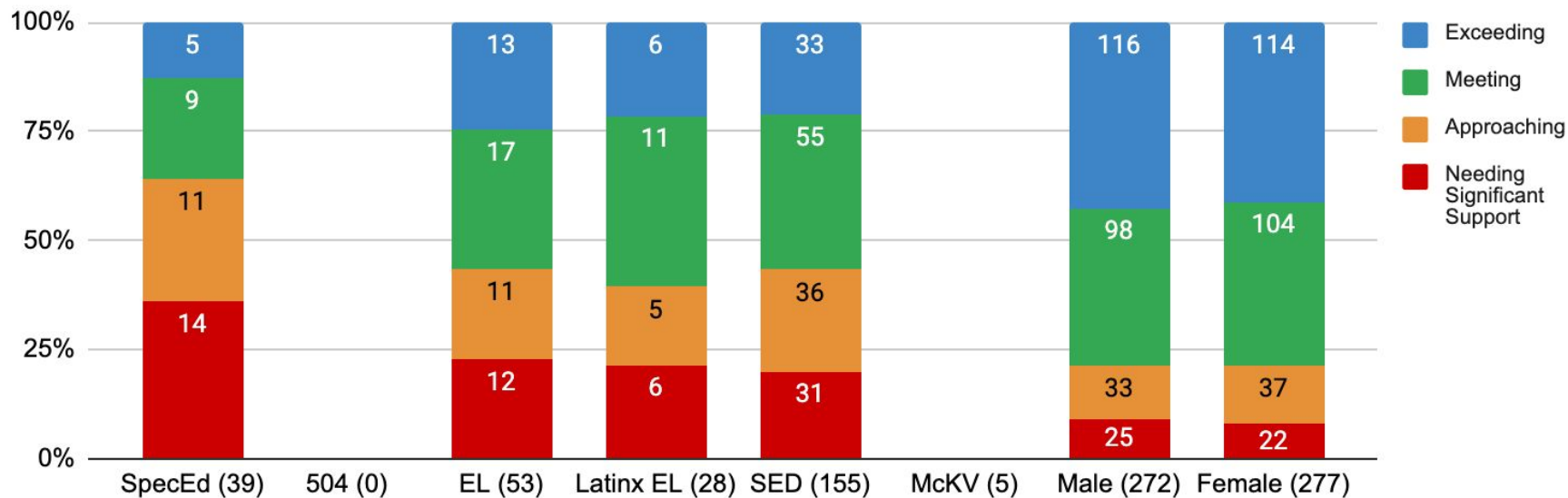
First Grade Fall 21 Math Benchmark Demographic Two



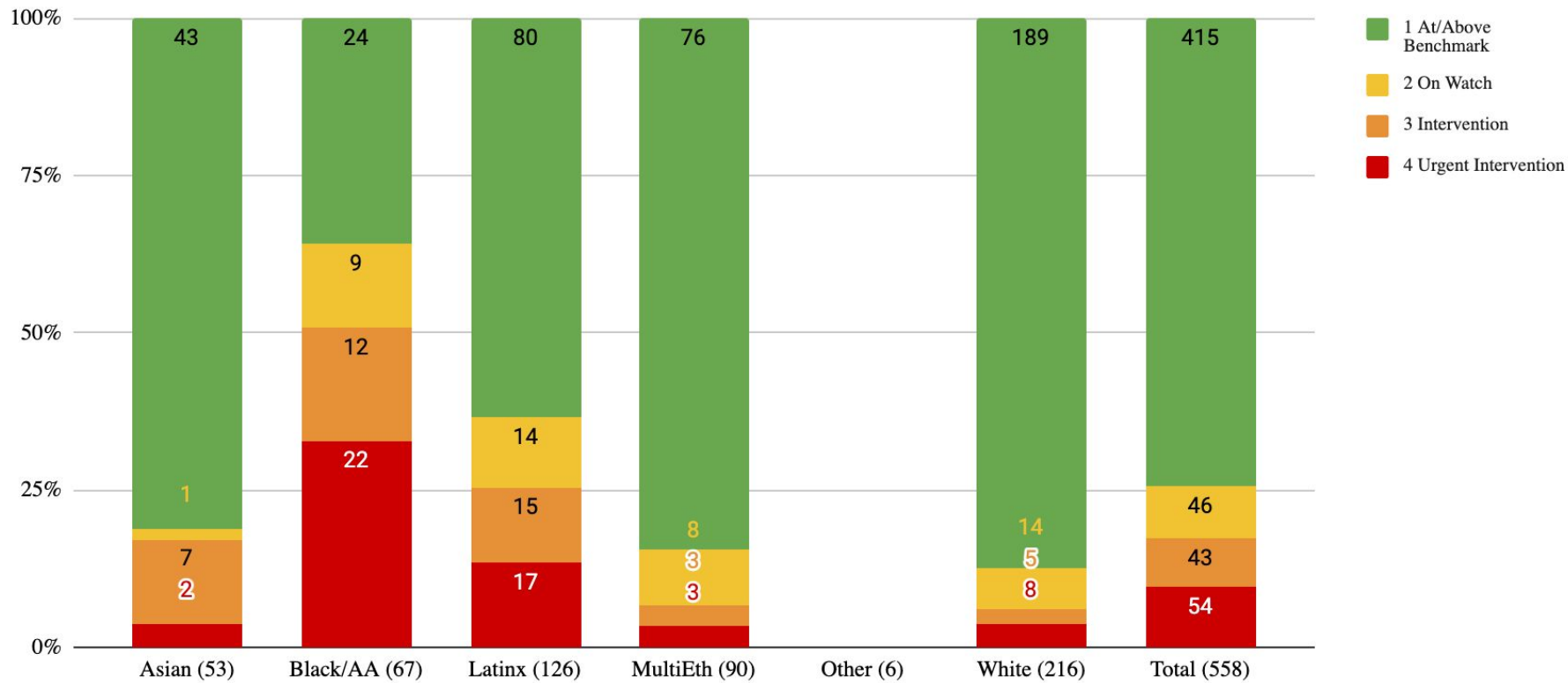
Second Grade Fall 21 Math Benchmark Demographic One



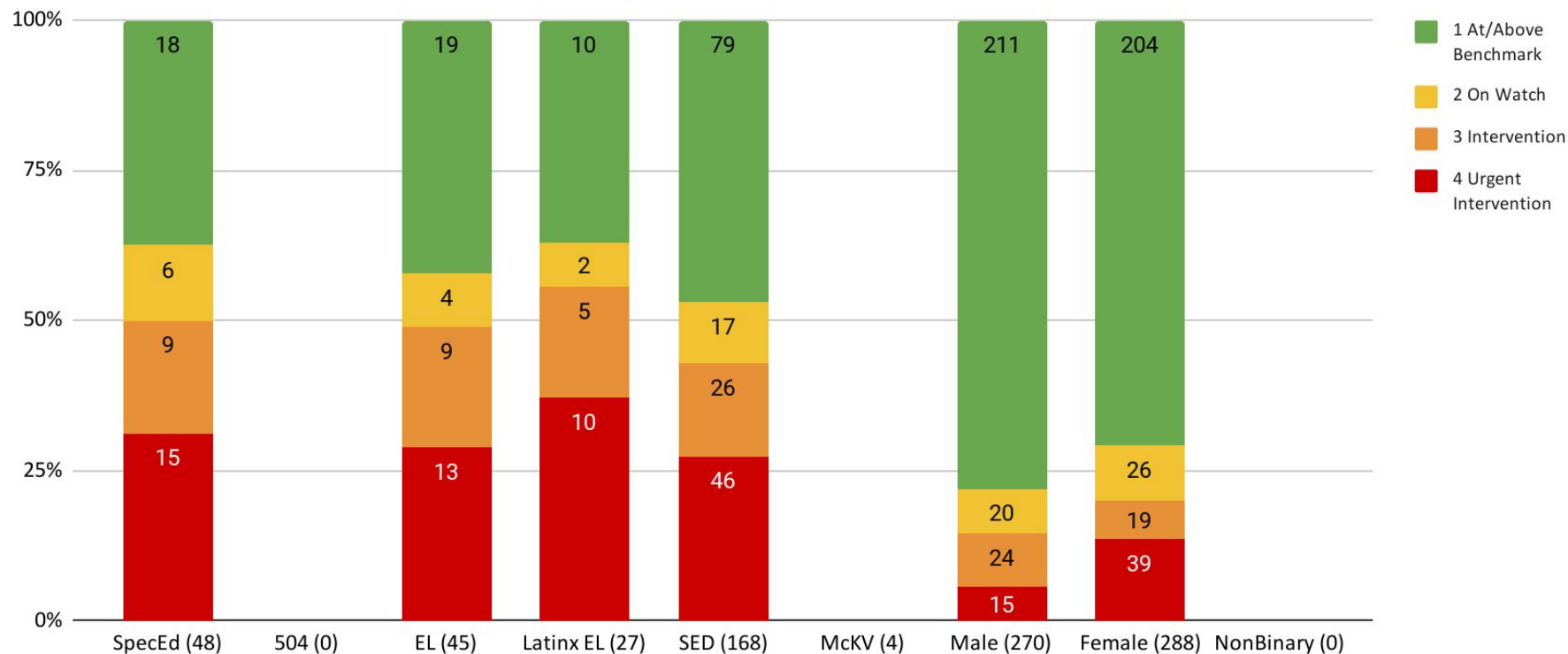
Second Grade Fall 21 Math Benchmark Demographic Two



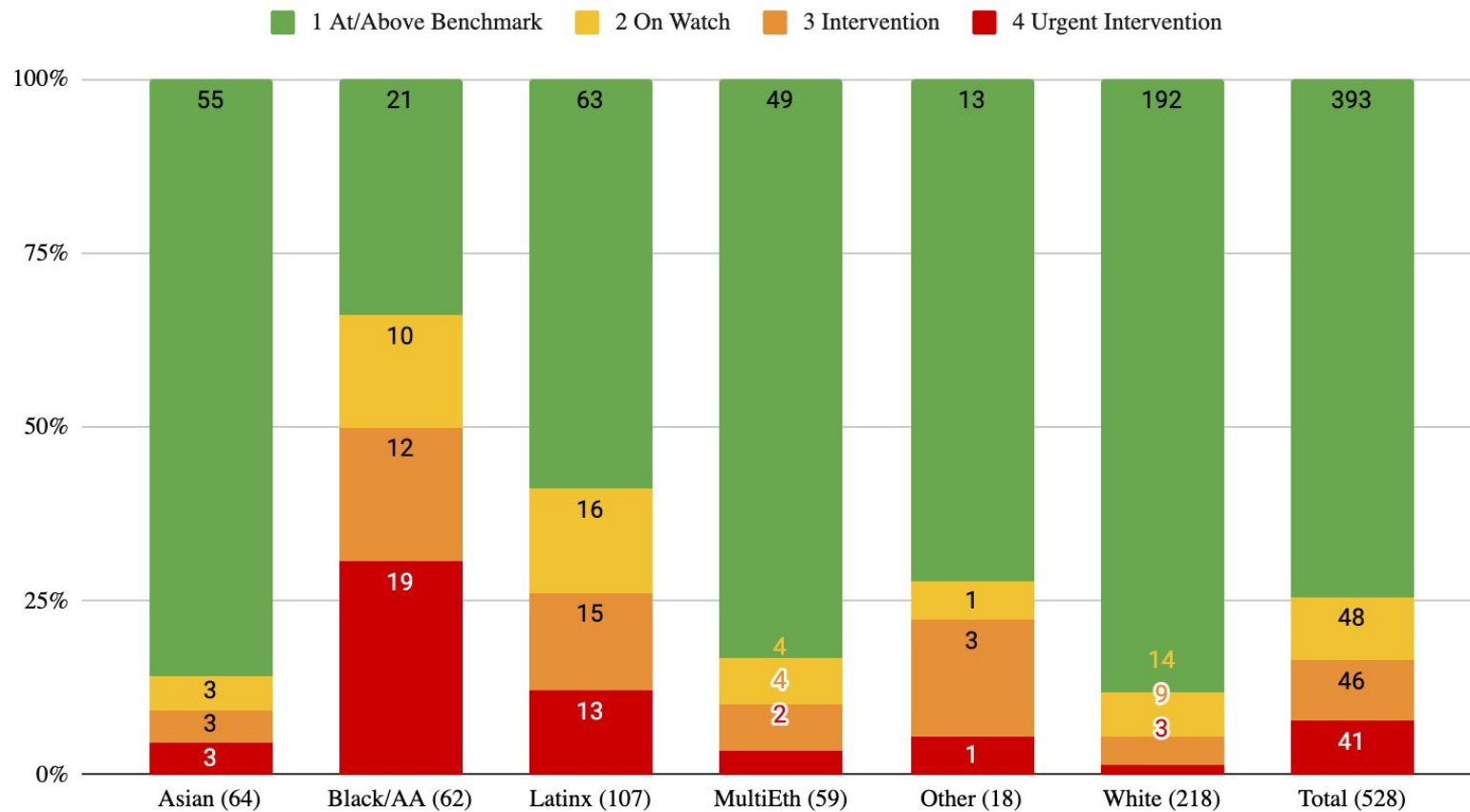
District-Wide Third Grade Fall 21 STAR Math Demographic One



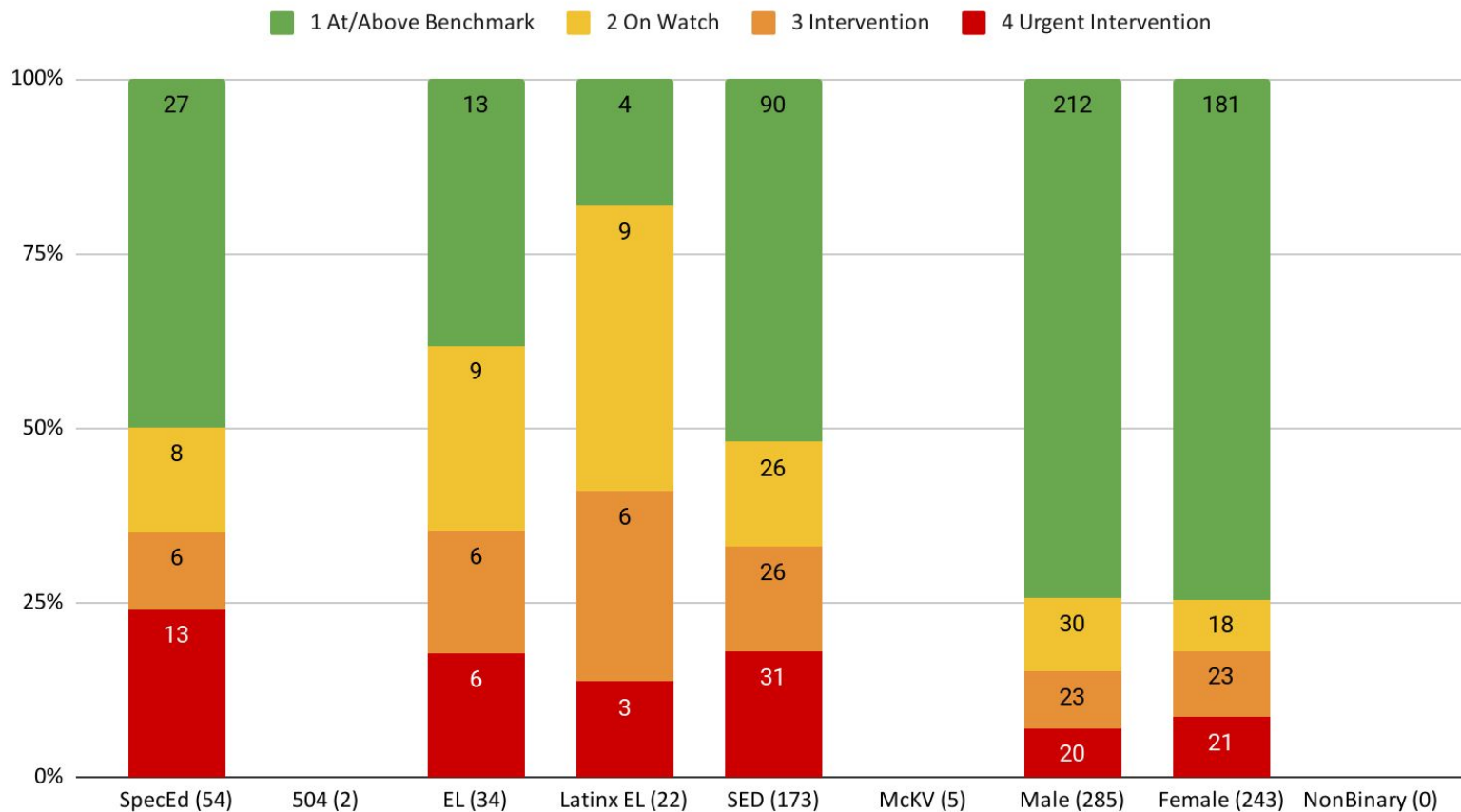
District-Wide Third Grade Fall 21 STAR Math Demographic Two



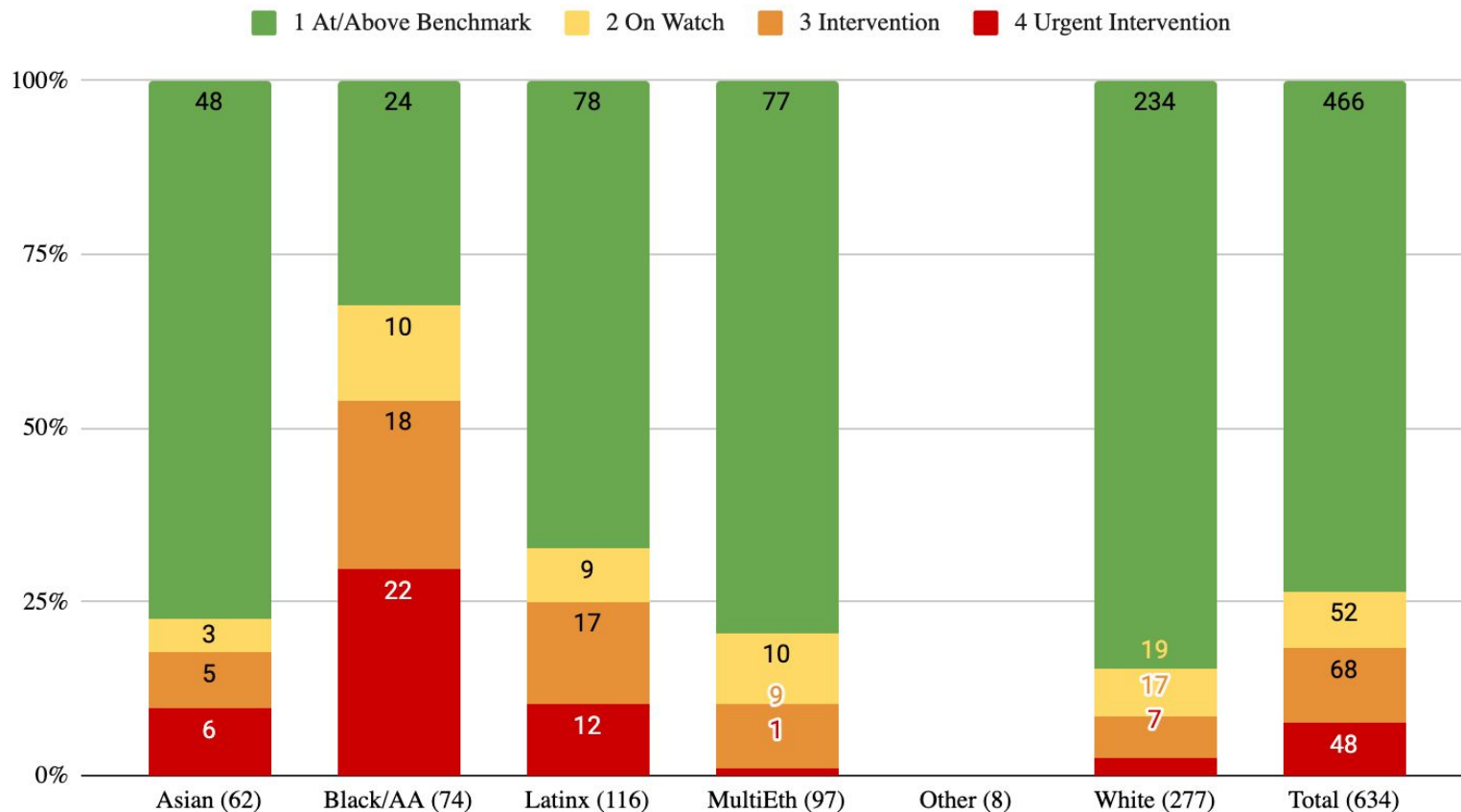
District-Wide Fourth Grade Fall 21 STAR Math Demographic One



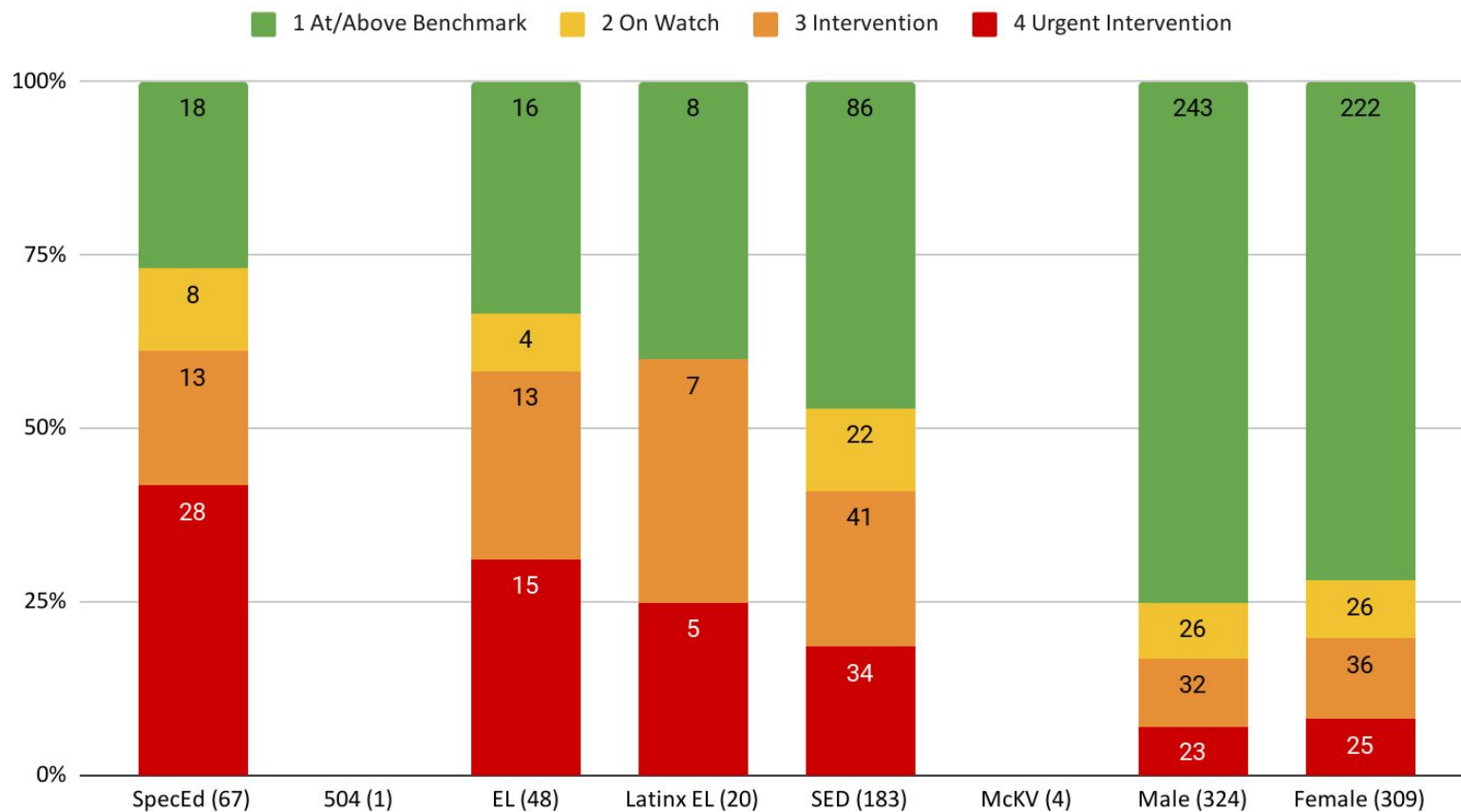
District-Wide Fourth Grade Fall 21 STAR Math Demographic Two



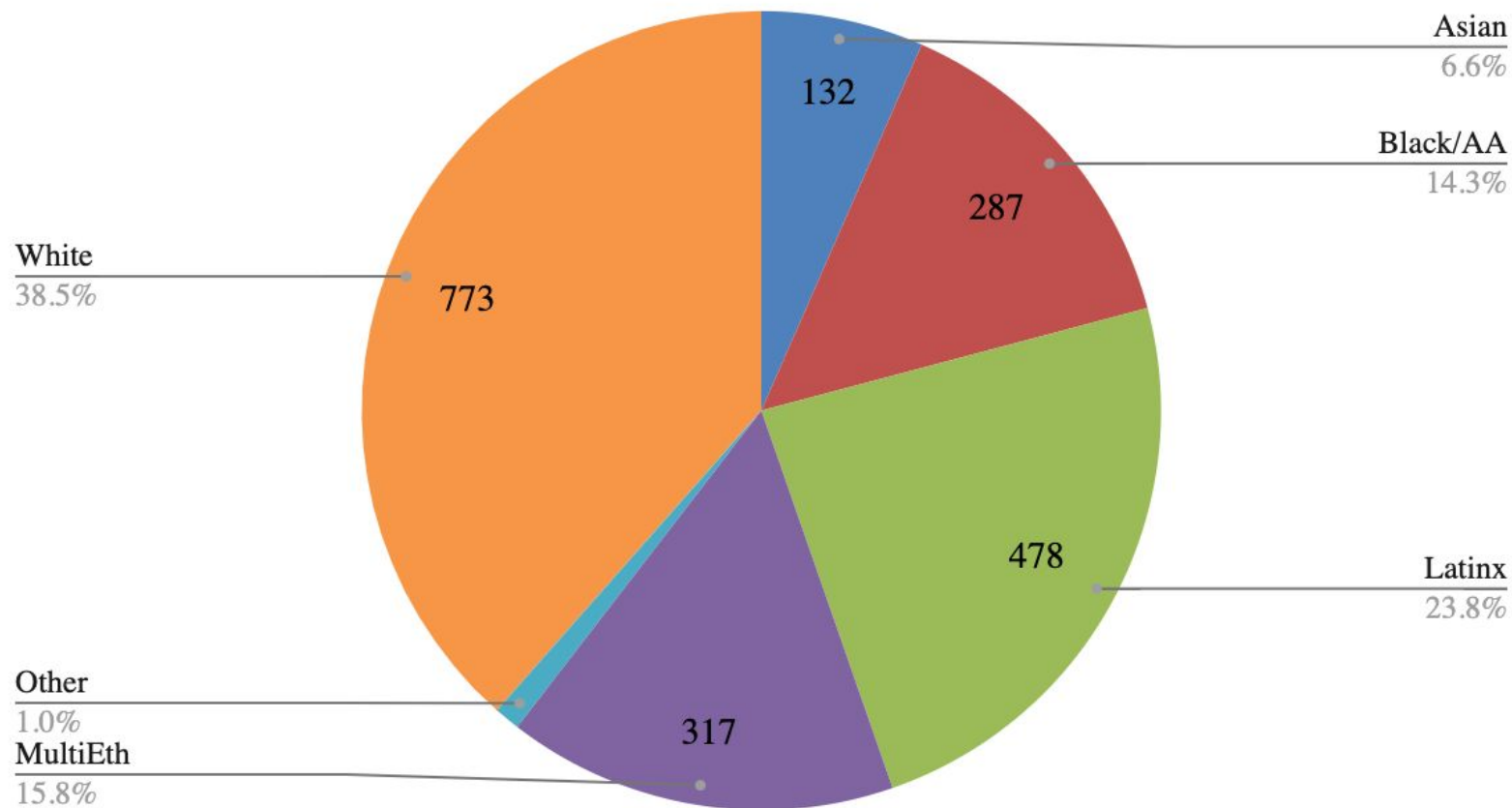
District-Wide Fifth Grade Fall 21 STAR Math Demographic One



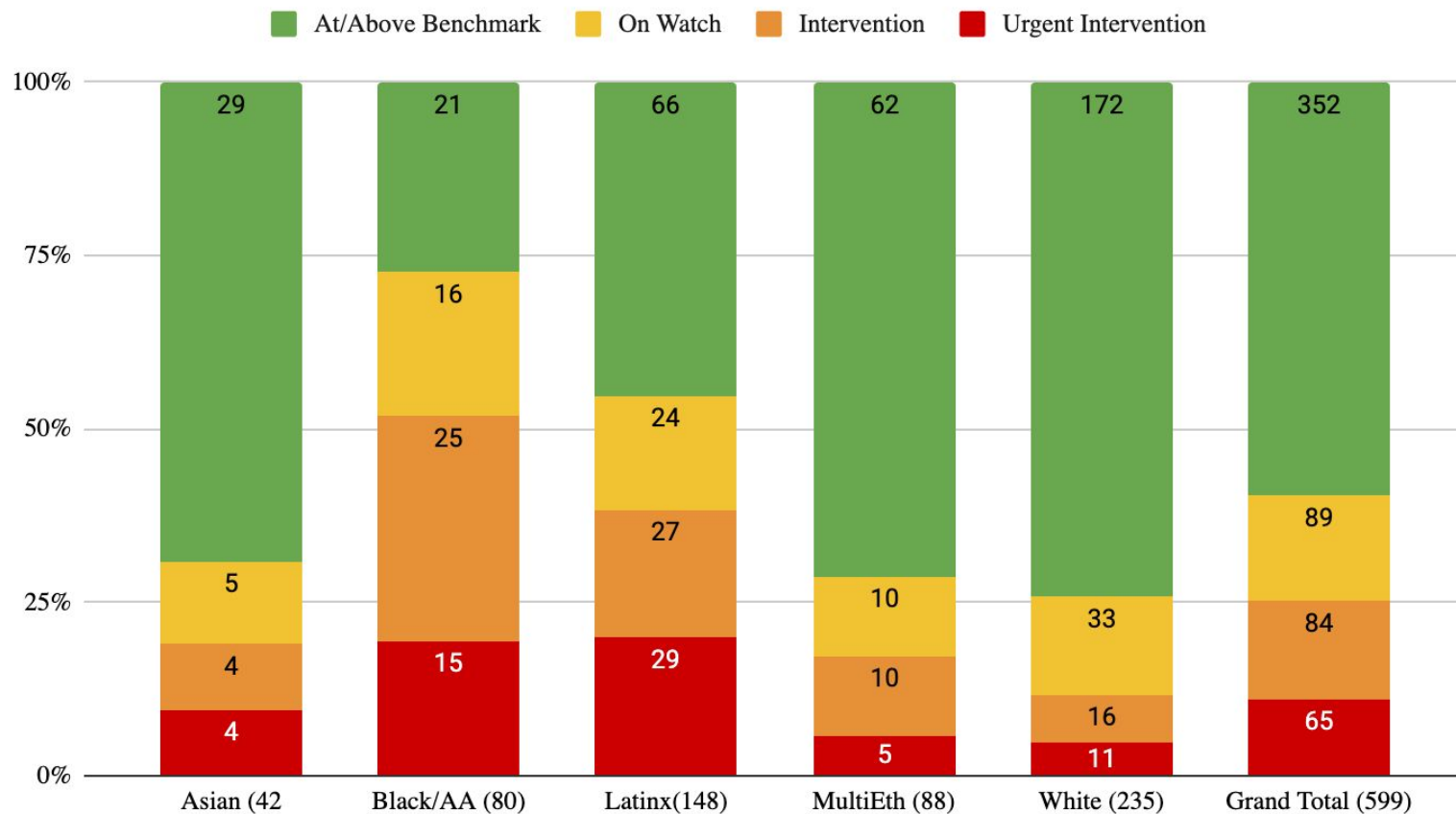
District-Wide Fifth Grade Fall 21 STAR Math Demographic Two



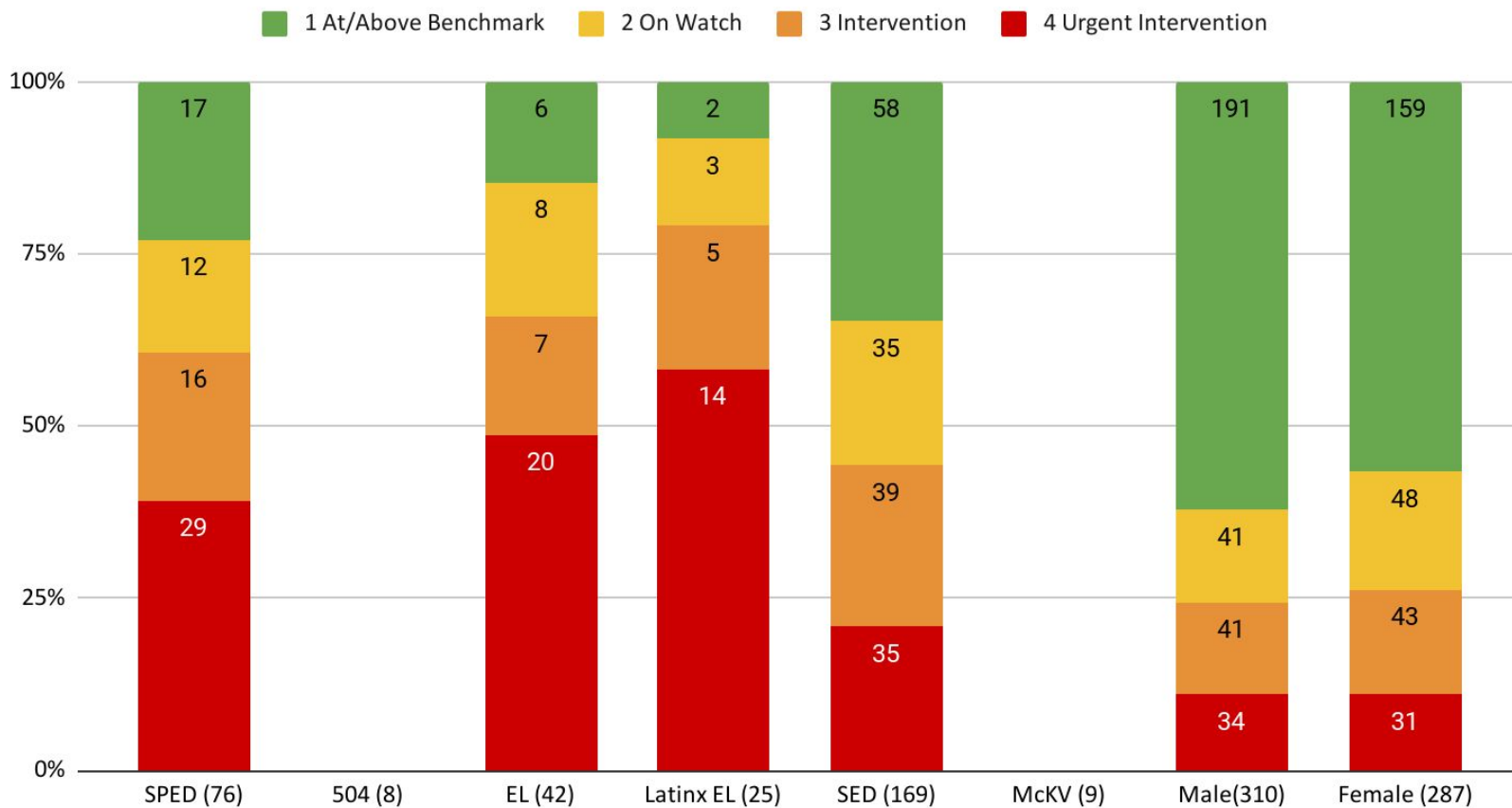
Middle School Enrollment Oct '21



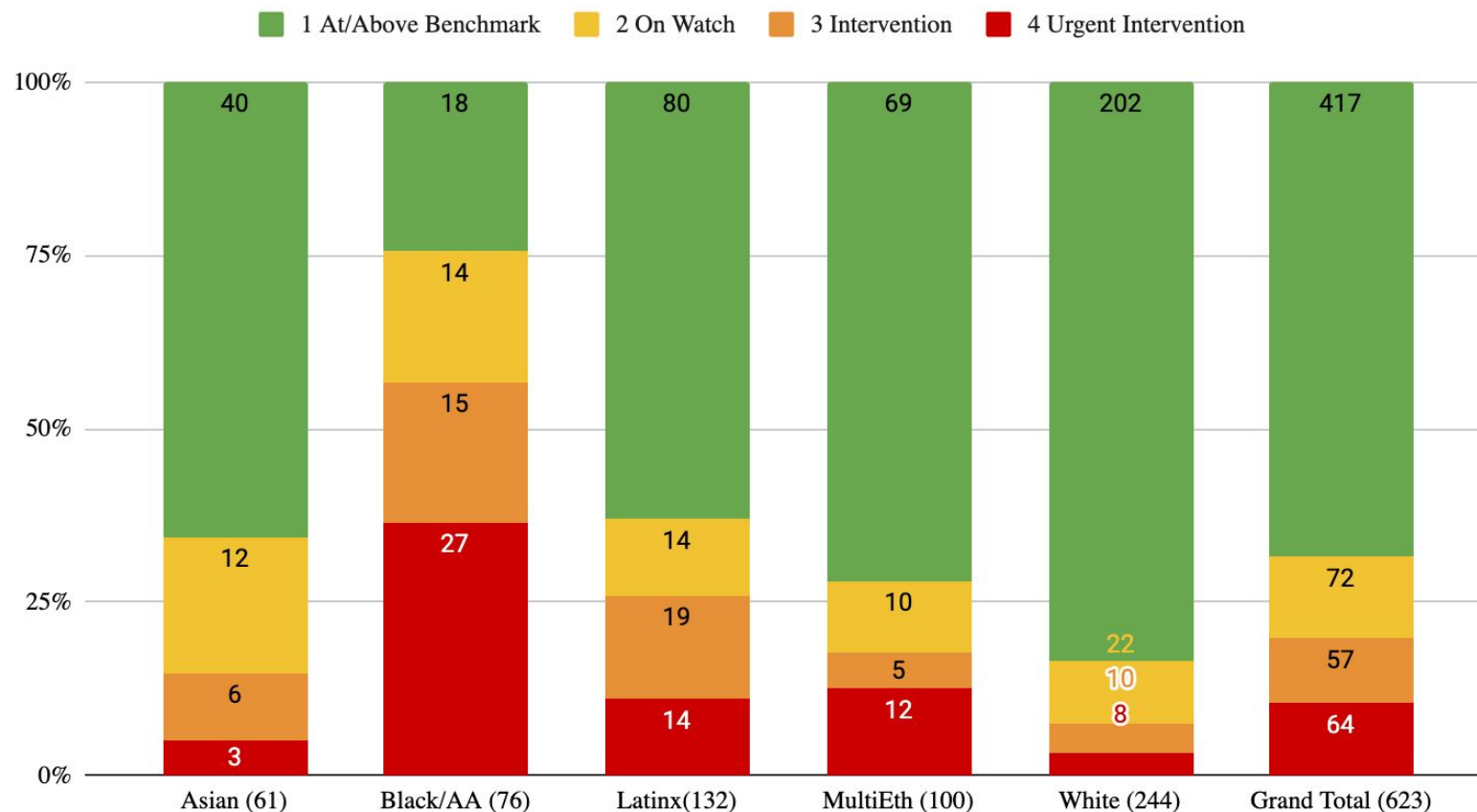
District-Wide 6th Grade Fall 21 STAR Math Demographic One



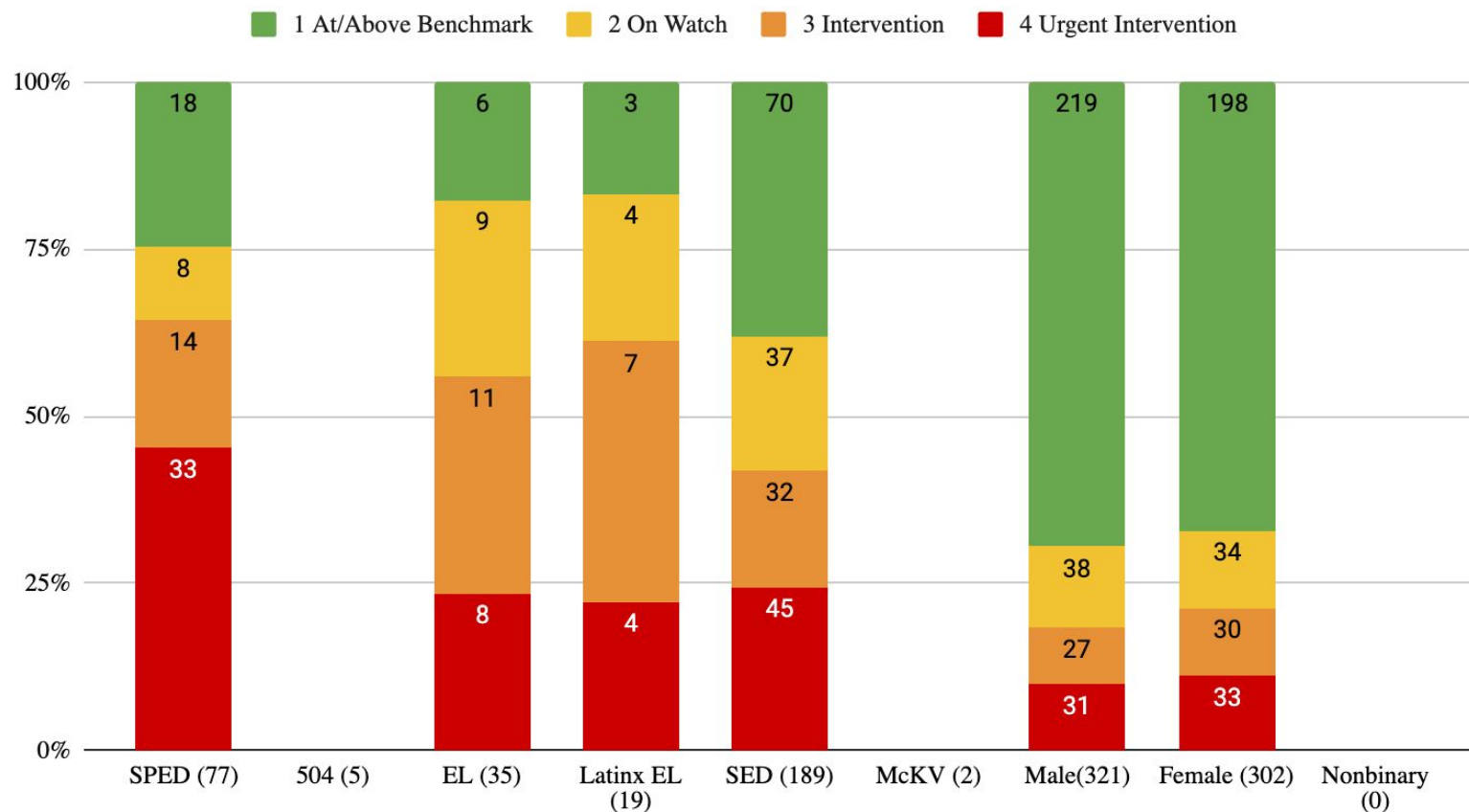
District-Wide 6th Grade Fall 21 STAR Math Demographic Two



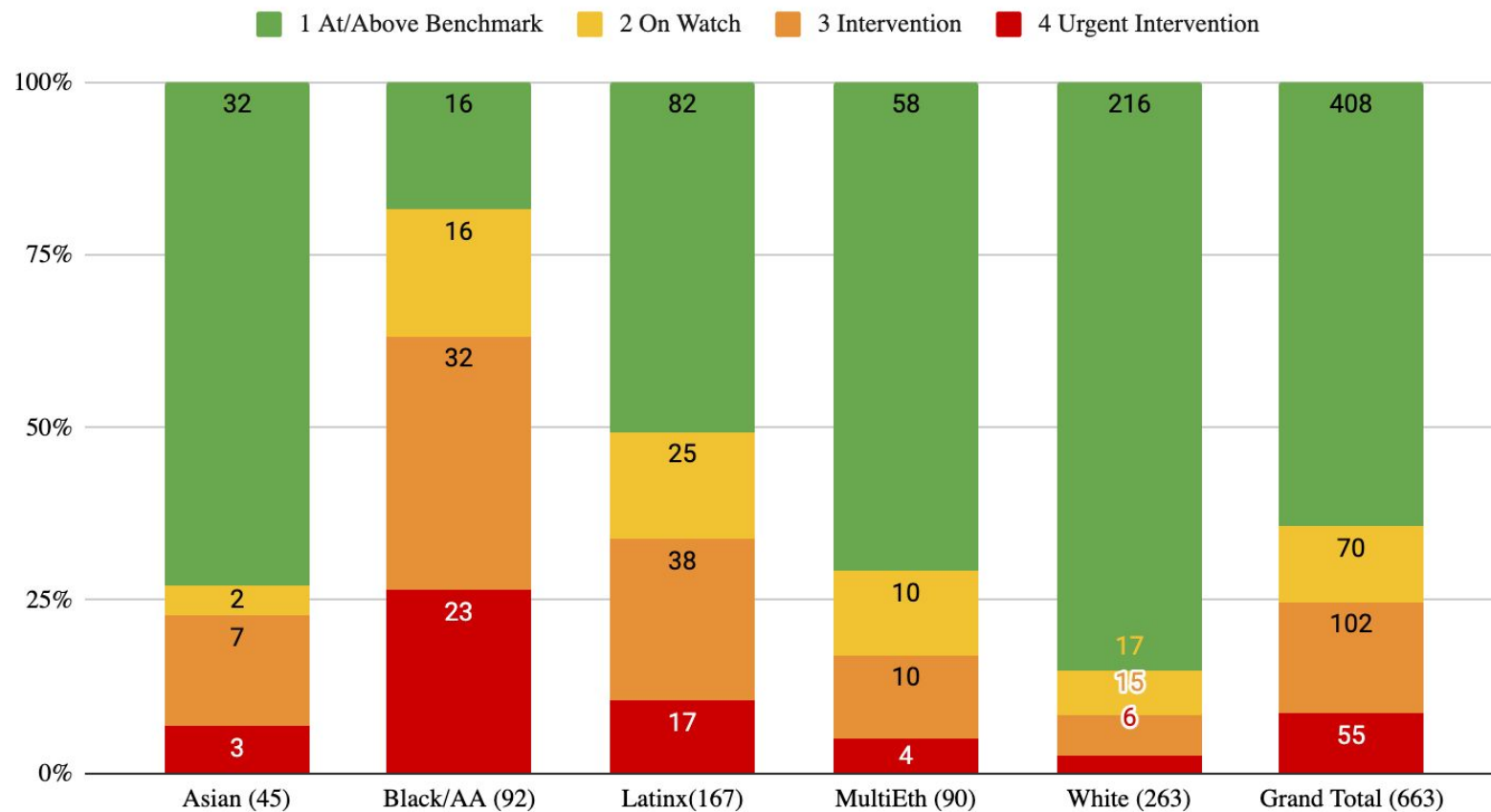
District-Wide 7th Grade Fall 21 STAR Math Demographic One



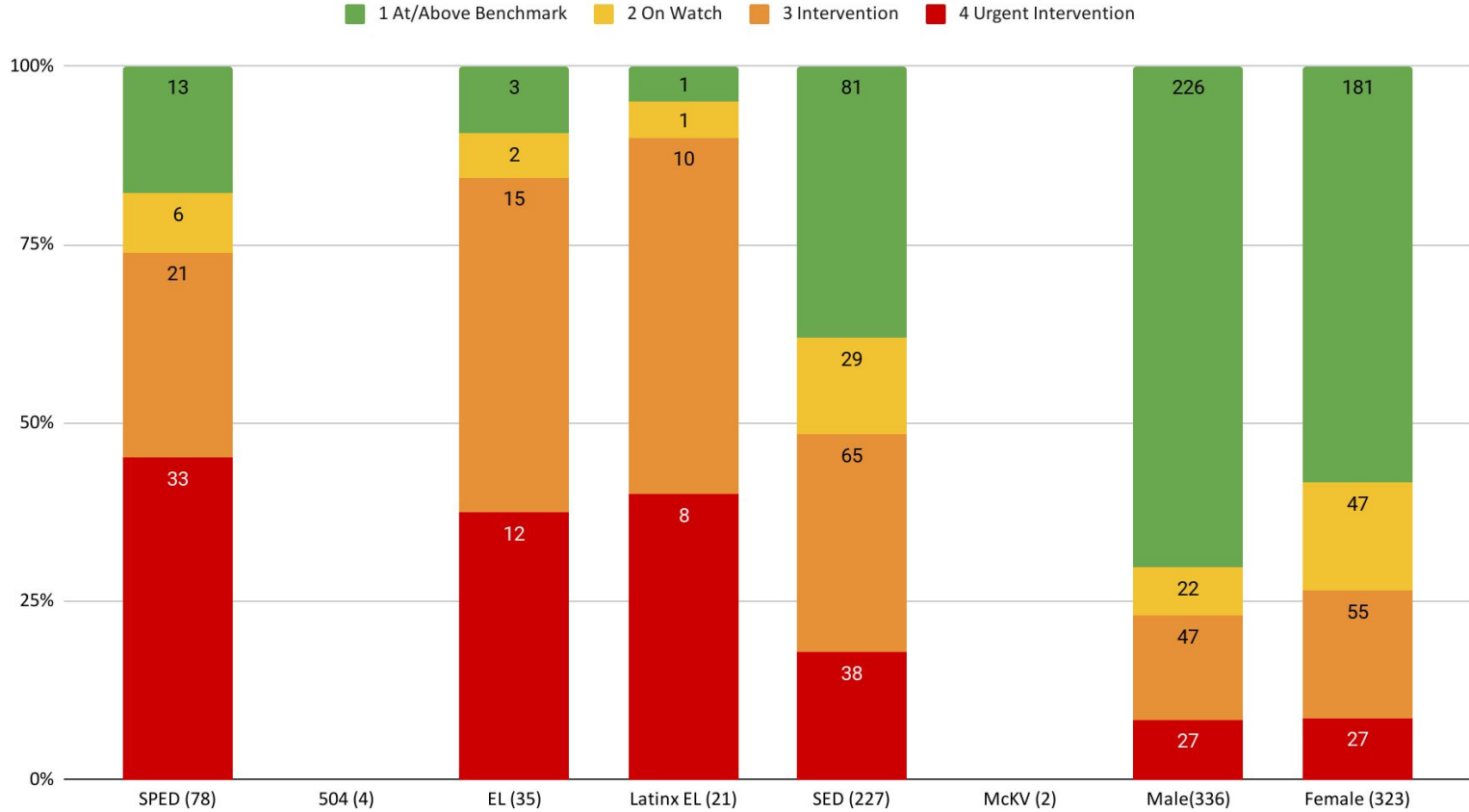
District-Wide 7th Grade Fall 21 STAR Math Demographic Two



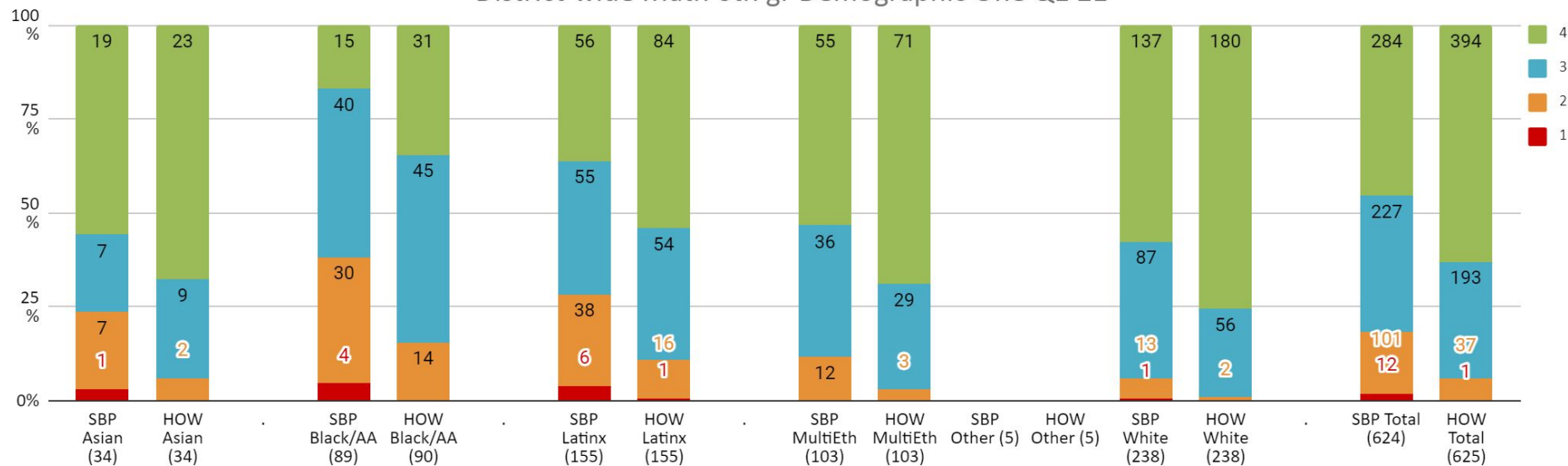
District-Wide 8th Grade Fall 21 STAR Math Demographic One



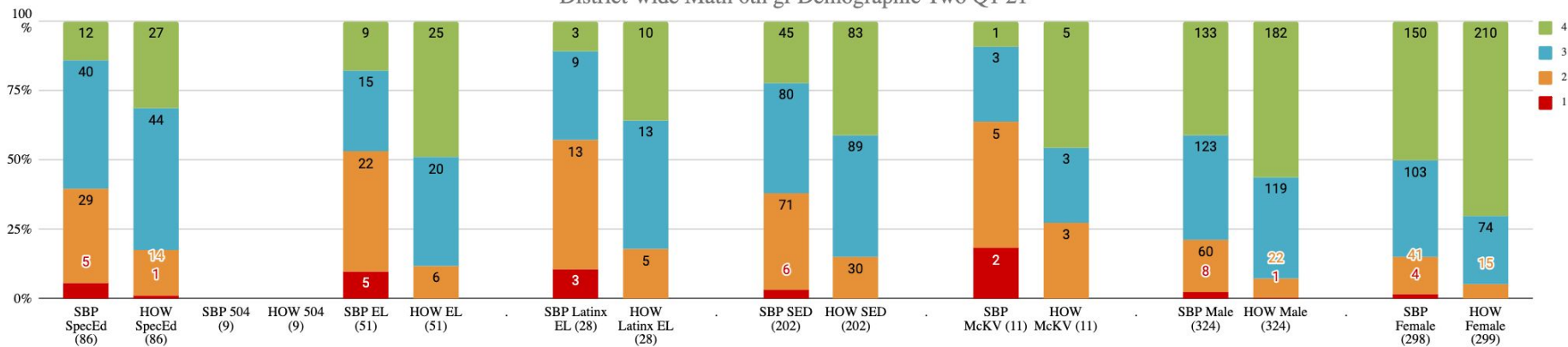
District-Wide 8th Grade Fall 21 STAR Math Demographic Two



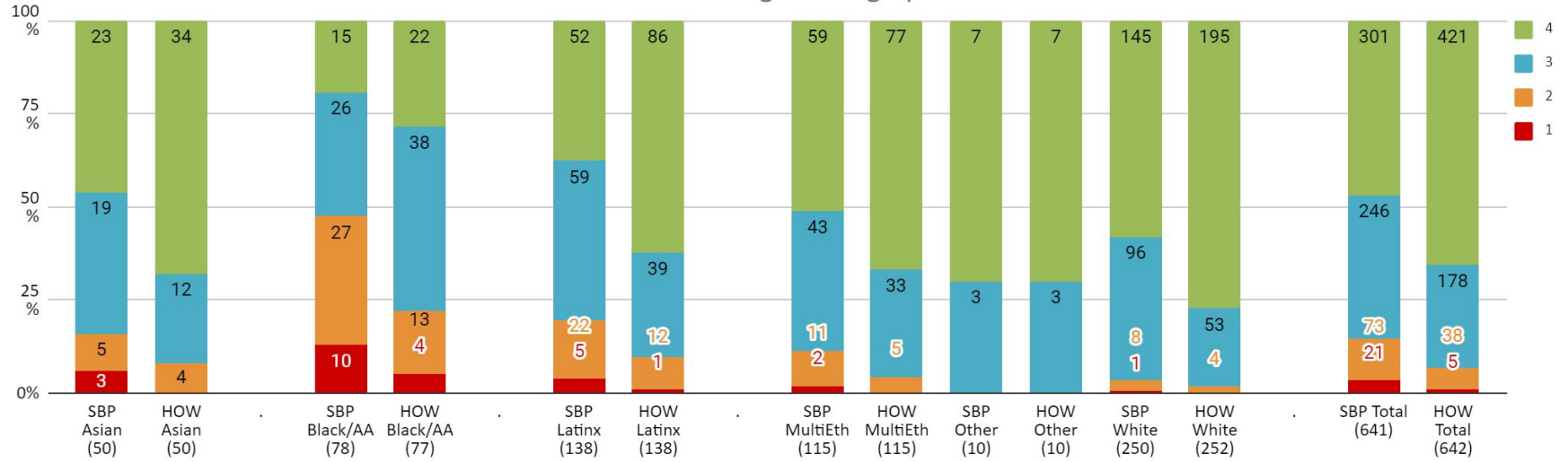
District-wide Math 6th gr Demographic One Q1 21



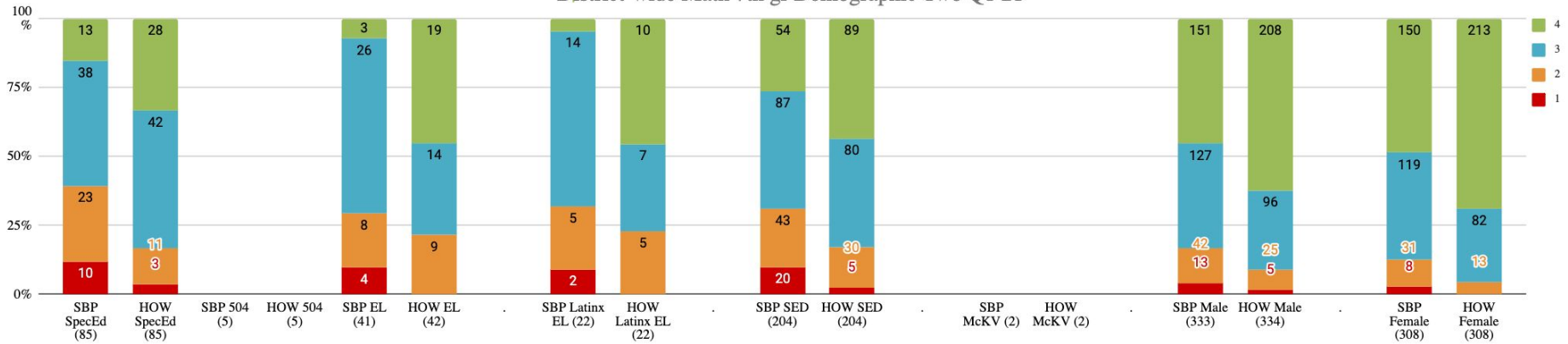
District-wide Math 6th gr Demographic Two Q1 21



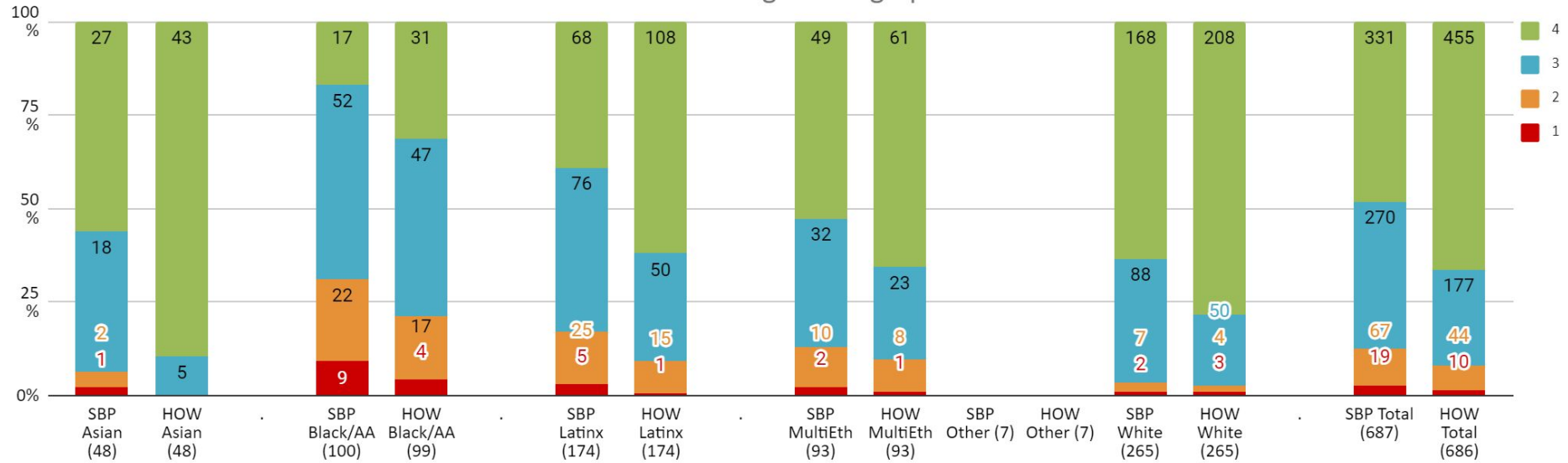
District-wide Math 7th gr Demographic One Q1 21



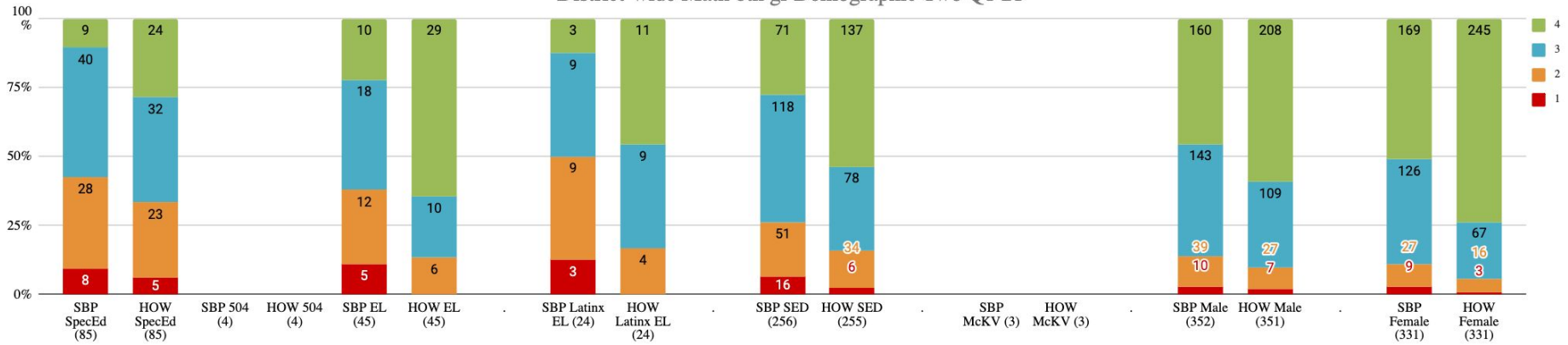
District-wide Math 7th gr Demographic Two Q1 21



District-wide Math 8th gr Demographic One Q1 21

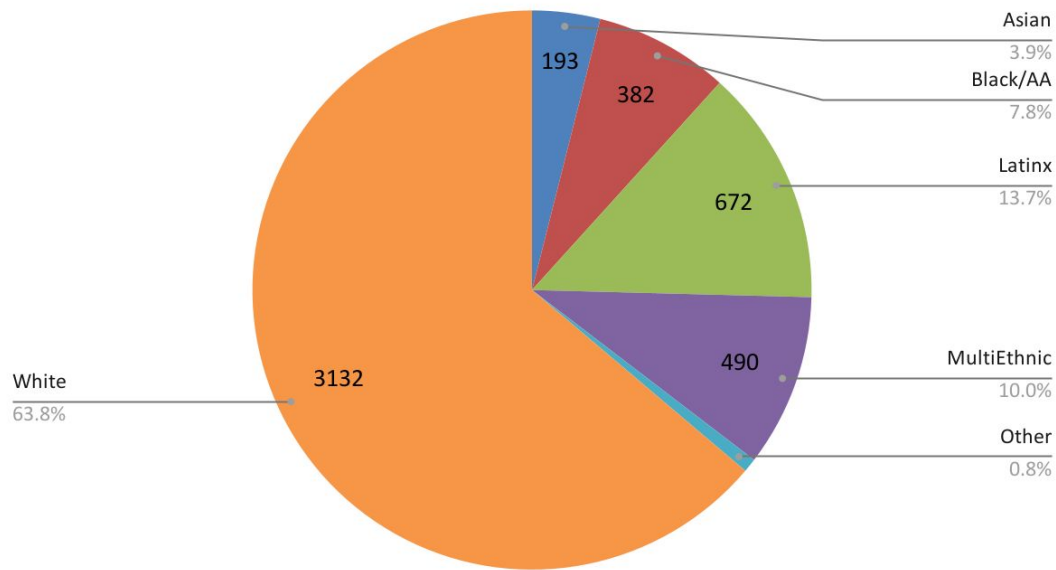


District-wide Math 8th gr Demographic Two Q1 21

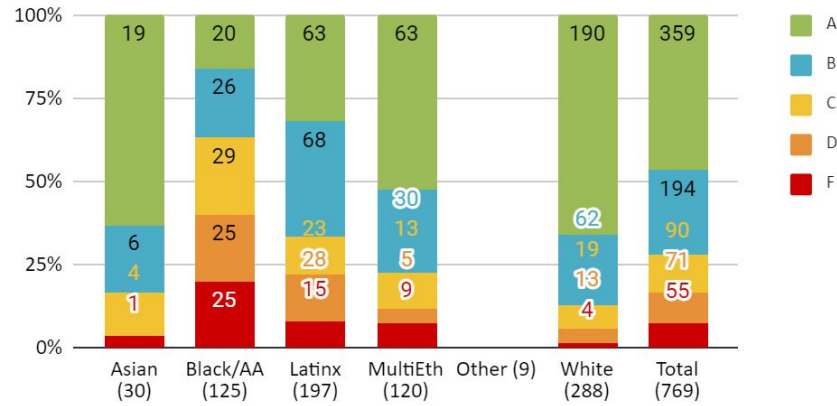


Berkeley High School: Race

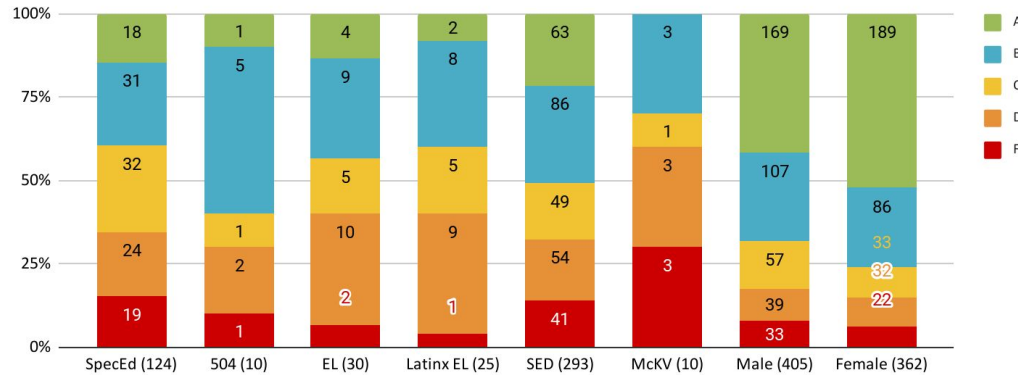
BHS Enrollment Oct '21



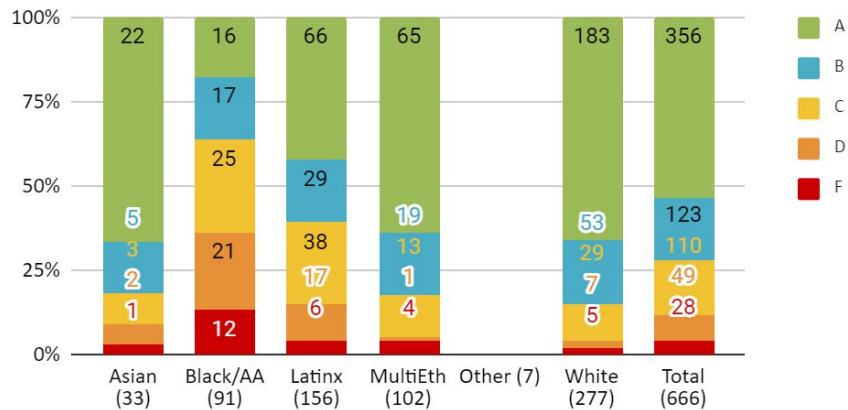
BHS Math 1 Demographic One Q1 21



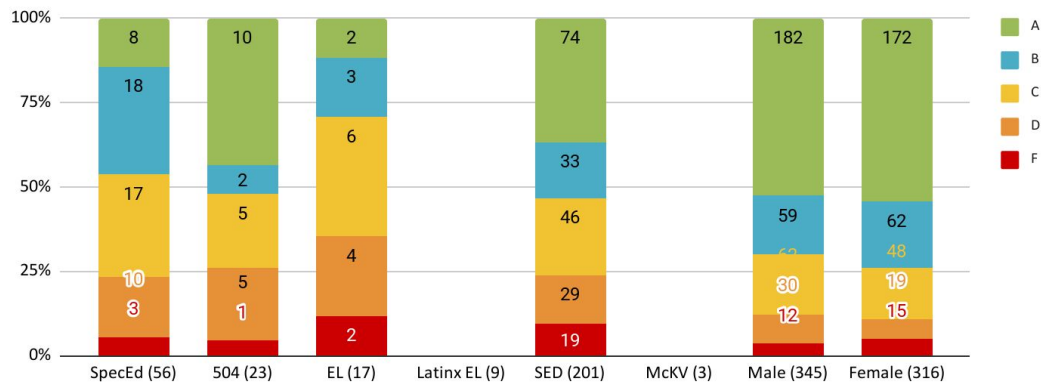
BHS Math 1 Demographic Two Q1 21



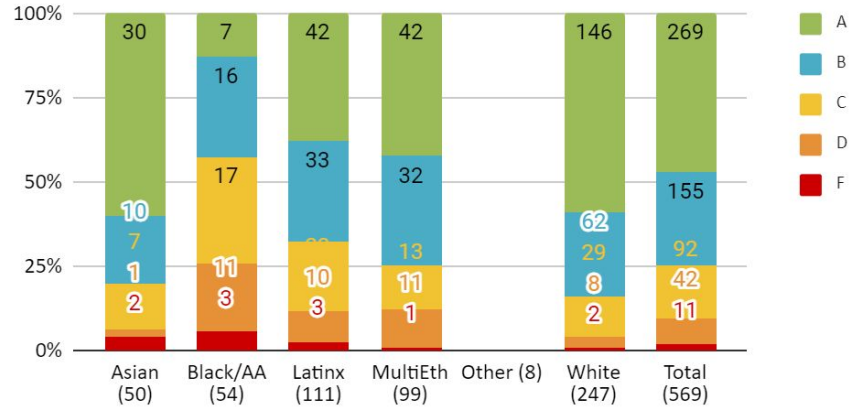
BHS Math 2 Demographic One Q1 21



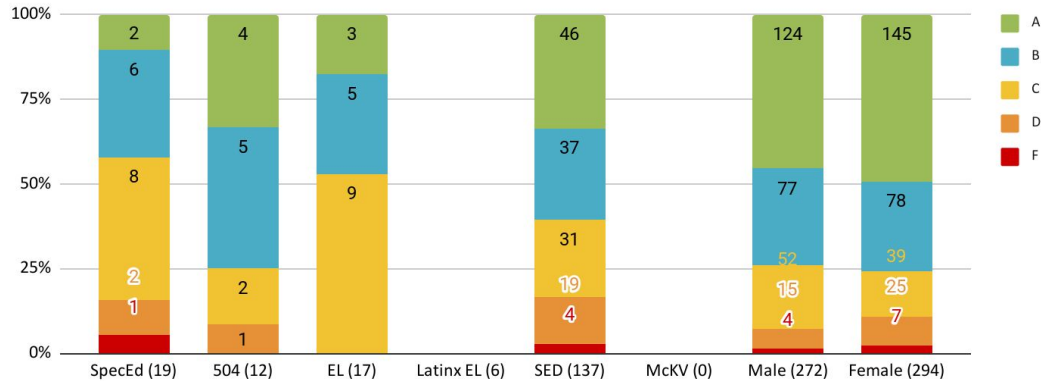
BHS Math 2 Demographic Two Q1 21



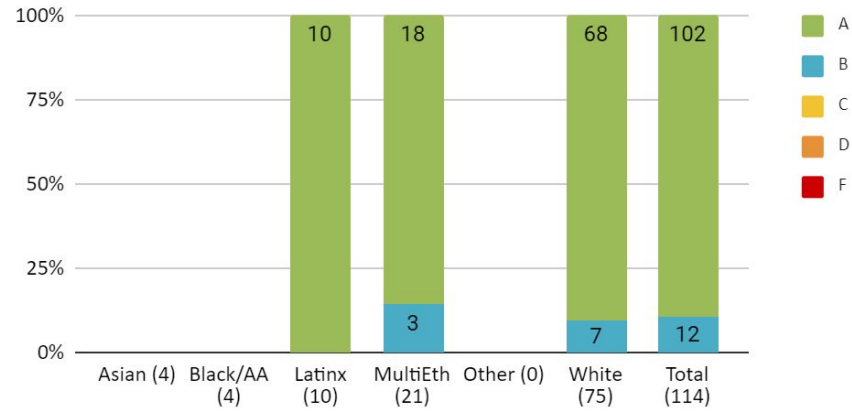
BHS Math 3 Demographic One Q1 21



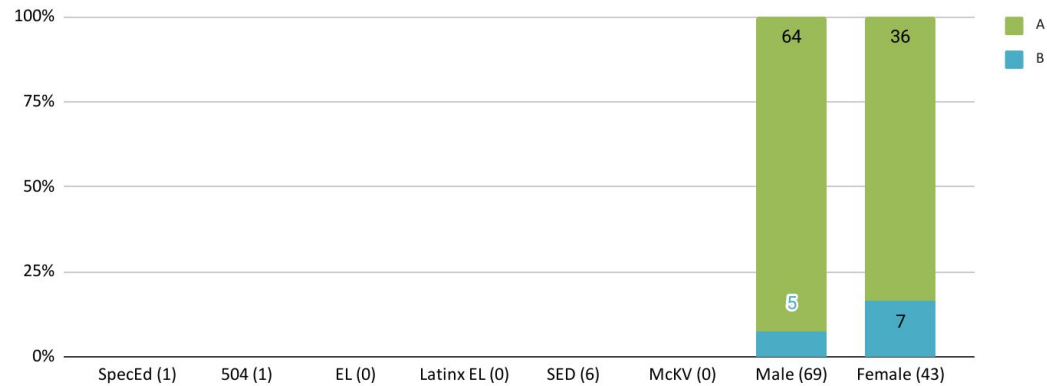
BHS Math 3 Demographic Two Q1 21



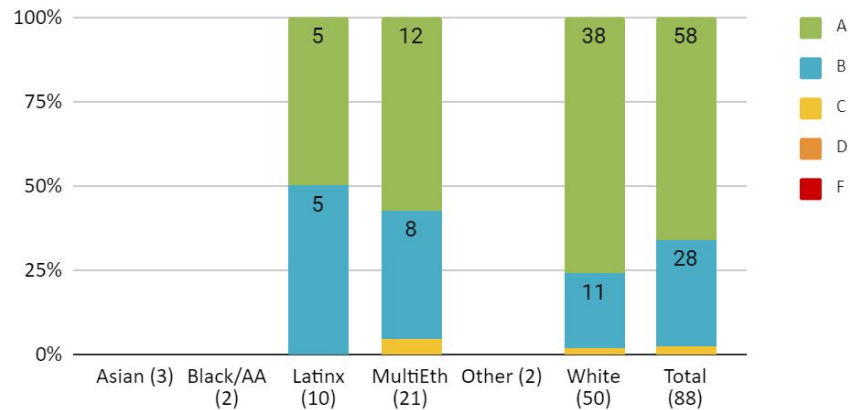
BHS Adv Math 1 Demographic One Q1 21



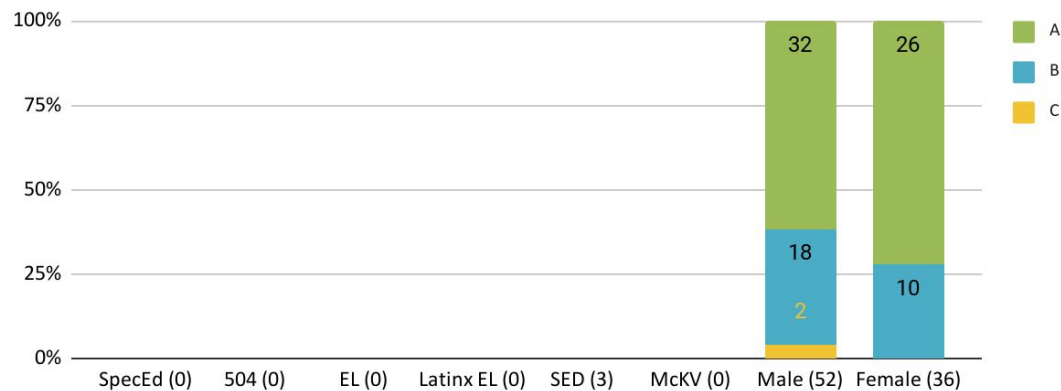
BHS Adv Math 1 Demographic Two Q1 21



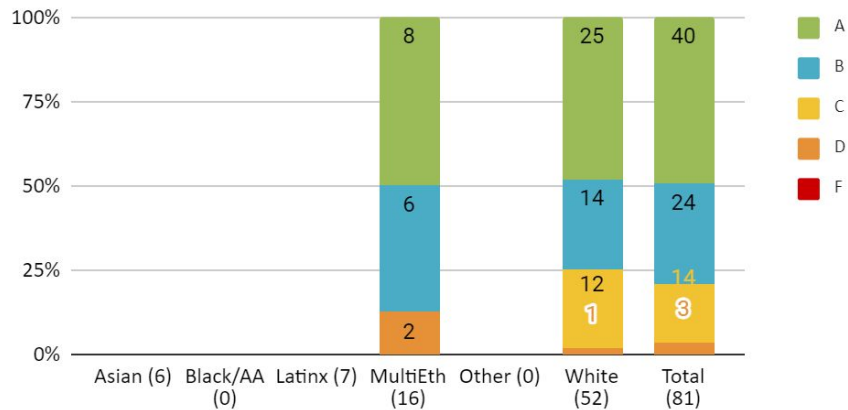
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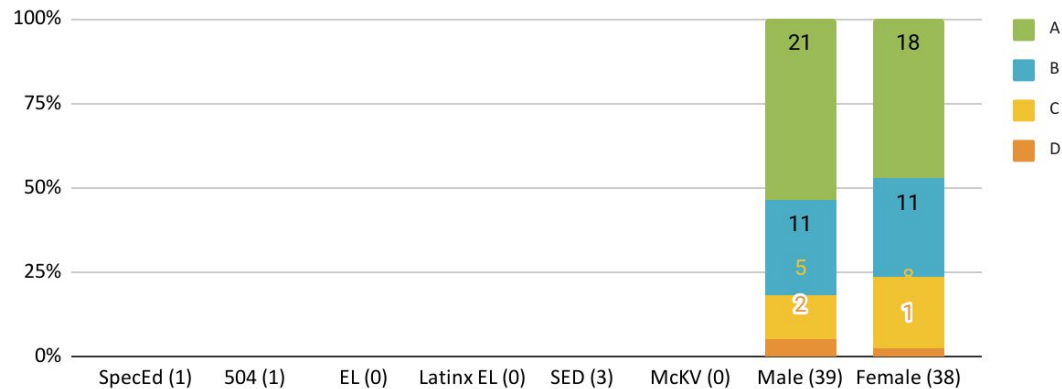
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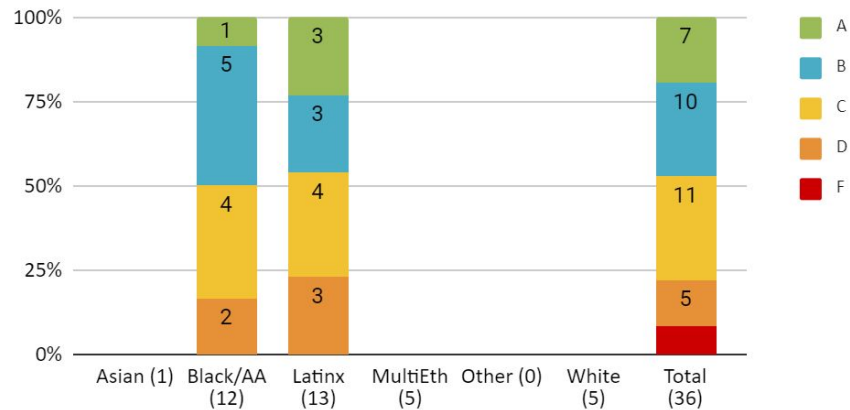
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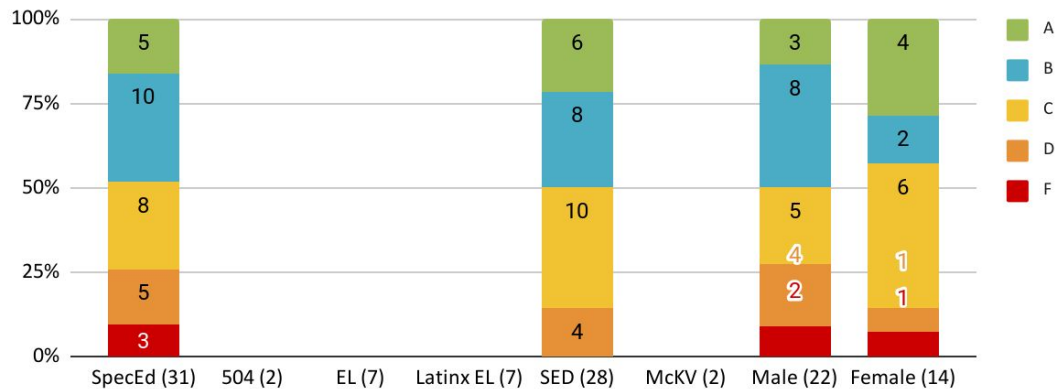
BHS Adv Math 3 Demographic Two Q1 21



BHS Math 1x Demographic One Q1 21



BHS Math 1x Demographic Two Q1 21



Course	Grade Level				
	09	10	11	12	Total
Math 1 (P)	648	120	1		769
<i>EL Math 1 (P)</i>	9	5	2	5	21
<i>EL Math 1 -Newcomer</i>	6	4	1	1	12
Math 1x (P)			28	8	36
Advanced Math 1	114				114
Math 1 Courses	777	129	32	14	952
AHA-Math 2 (P)		42	8	4	54
AMPS-Math 2 (P)		46	16	2	64
CAS-Math 2 (P)		43	11	6	60
Math 2 (P)		416	53	19	488
<i>EL Math 2 (P)</i>		8	2	2	12
Advanced Math 2 (P)		88			88
Math 2 Courses	0	643	90	33	766
Math 3 (P)			405	19	424
AHA-Math 3 (P)			42	7	49
AMPS-Math 3 (P)			34	1	35
CAS-Math 3 (P)			51	10	61
Advanced Math 3 (H)			81		81
Math 3 Courses	0	0	613	37	650

Course	Grade Level				
	09	10	11	12	Total
<i>AP-Calculus AB (AP)</i>				142	142
<i>AMPS-AP-Calc AB (AP)</i>				62	62
<i>AP-Calculus BC (AP)</i>				35	35
<i>AP-Statistics (AP)</i>				163	163
<i>IB-HL-Math Year 2 (HL)</i>				17	17
<i>IB-Math Studies (SL)</i>				96	96
<i>IB-SL-Math Year 2 (SL)</i>				36	36
Upper Level Courses				551	551
<i>CEC-Algebra 1</i>	5	7	4	4	20
<i>INE-Algebra 1</i>		9	4	6	19
<i>INE-Lifeskills Math</i>	2	1	3	3	9
<i>INE-PreAlgebra</i>	7	4	1	3	15
CEC/INE Courses	14	21	12	16	63
classes in Italics not included in stacked grade graphs					

	Grade Level				
Course	09	10	11	12	Total
ISP-Math 1 Qtr	5	1	2	1	9
ISP-Math 2 Qtr		11	3		14
ISP-Math 3 Qtr			11	5	16
ISP-Calculus AB Qtr (AP)				2	2
ISP-AP-Stat Qtr				8	8
Ind. Study Courses	5	12	16	16	49

	Grade Level			
Course	10	11	12	Total
BTch-Math 1	1	6	3	10
BTch-Math 2		6	10	16
BTch-Math 3			2	2
BTech Courses	1	11	15	27

Course	Asian	Black/AA	Latinx	MultiEth	Other	White	Total
AMPS-AP-Calc AB (AP)	5	8	19	9		21	62
AP-Calculus BC (AP)	3		5	6	1	20	35
AP-Calculus AB (AP)	10	12	12	22	3	83	142
AP-Statistics (AP)	13	7	19	22	4	98	163
IB-HL-Math Year 2 (HL)			2	5		10	17
IB-Math Studies (SL)	4	8	33	14		37	96
IB-SL-Math Year 2 (SL)	8		4	2	1	21	36
Combined	43	35	94	80	9	290	551
CEC-Algebra 1		7	7	2		4	20
INE-Algebra 1	1	9	6	1		2	19
INE-Lifeskills Math							9
INE-PreAlgebra		5	4	4		2	15
Combined	1	21	17	7	0	8	63
EL Math 1 -Newcomer	2		10				12
EL Math 1 (P)	4	1	10		3	3	21
EL Math 2 (P)	7	1	3			1	12
Combined	13	2	23	0	3	4	45

Course	Total	Special Ed.	504	EL*	Latinx EL	SED	McK. Vento	Male	Female	Nonbinary
AMPS-AP-Calc AB (AP)	62	3	14	2		17		22	38	2
AP-Calculus BC (AP)	35	1	1			1		20	15	
AP-Calculus AB (AP)	142	2	9	1		10		82	60	
AP-Statistics (AP)	163	3	15	1		18		70	92	1
IB-HL-Math Year 2 (HL)	17							8	9	
IB-Math Studies (SL)	96	12	36	6	3	30		41	55	
IB-SL-Math Year 2 (SL)	36		1			1		17	19	
Combined	551	21	76	10	3	77	0	260	288	3
CEC-Algebra 1	20	20		3	3	10		12	6	2
INE-Algebra 1	19	19		4	3	14		10	9	
INE-Lifeskills Math	9	9								
INE-PreAlgebra	15	15		4	3	8		11	4	
Combined	63	63	0	11	9	32	0	33	19	2
EL Math 1 -Newcomer	12	1		12	10	9		4	8	
EL Math 1 (P)	21			19	9	8		15	6	
EL Math 2 (P)	12			12	3	6		8	4	
Combined	45	1	0	43	22	23	0	27	18	0

*includes Pending

	Asian	Black/AA	Latinx	MultiEth	Other	White	Total
BTch-Math 1		4	2	2		2	10
BTch-Math 2		9	4	2	1		16
BTch-Math 3							2
BTech Courses	0	13	6	4	1	2	28
ISP-Math 1 Qtr							9
ISP-Math 2 Qtr		1	3	5		5	14
ISP-Math 3 Qtr	2	1	1	2		10	16
ISP-AP-Stat Qtr							8
ISP-Calculus AB Qtr (AP)							2
Ind. Study Courses	2	2	4	7	0	15	49

Course	Total	Special Ed.	504	EL	Latinx EL	SED	McK. Vento	Male	Female	Nonbinary
BTch-Math 1	10	6				5	1	6	4	
BTch-Math 2	16	7		1	1	8	4	12	4	
BTch-Math 3	2									
BTech Courses	28	13	0	1	1	13	5	18	8	0
ISP-Math 1 Qtr	9									
ISP-Math 2 Qtr	14	2	1			4		5	6	3
ISP-Math 3 Qtr	16	2		1		5		11	5	
ISP-AP-Stat Qtr	8									
ISP-Calculus AB Qtr (AP)	2									
Ind. Study Courses	49	4	1	1	0	9	0	16	11	3