

Math Pathways

Presentation to the Woodbridge Board of Education

February 26th, 2024

Frank Purcaro, Assistant Superintendent

Amity Region #5

Presentation Contents

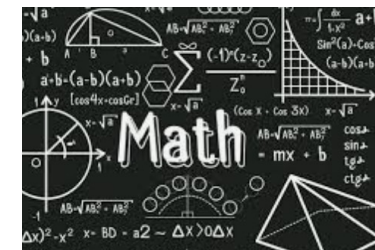
- MS Pathways to Advanced Math
- HS Pathways to Advanced Math
- 2018-19 Grade 7 Cohort Math Pathways Analysis
- 2019-20 Grade 7 Cohort Math Pathways Analysis
- AP Math Enrollment by Year, Grade, Performance & Town (3 Year Trends)





MS Pathways to Advanced Math

Math Entry Points in 7th Grade



7th Grade Accelerated Math/Algebra I

4 Major considerations for placement in Algebra:

1. **At least a 97th percentile** on all STAR/iReady assessments in grades 5 and 6 (with one score exception).
2. *Meets all 5 classroom performance criteria as rated by 6th grade teachers.
3. Must “exceed” Mathematical Claims as rated by 6th grade teachers .
4. **Must take** the Pre-Algebra Final Exam and achieve a grade of B+ or higher

7th Grade Advanced Math/Pre-Algebra

3 Major considerations for placement in Pre-Algebra:

1. 6th Grade Math STAR/iReady Scale Scores (SS) - **at least an 83rd percentile** on Winter and Spring Assessments.
2. Meets at least 4 out of 5 classroom performance criteria as rated by 6th grade teachers.*
3. **Must “meet” or “exceed”** SBA Mathematical Claims as rated by 6th grade teachers.

7th Grade Math/Comp

Traditional, direct placement from 6th grade math.

Parents can waive students in 7th Grade Advanced Math/Pre-Algebra.

***Classroom performance criteria factors considered by 6th grade teachers includes:** Outstanding math achievement (>85% on summative assessments), Completes homework on time with attention to detail and organization; Independent learner, perseveres toward mastery; Developmentally mature, thinks abstractly, makes connections; Ability to make relevant applications of new concepts

7th to 8th Grade Placement

7th Grade Accelerated Math/Algebra I

Student meets criteria and moves to **Geometry** in 8th grade.



7th Grade Advanced Math/Pre-Algebra

Student meets the criteria and receives teacher recommendation to advance to **Algebra I**.

OR

If the student does not meet the criteria/recommendation, parent has the option of **waiving** student into Algebra I

7th Grade Math/Comp

Student advances to **8th Grade Math**.

Option #1: High achievement and teacher recommendation, student moves to **Pre-Algebra** at the mid year.

Option #2: Student advances to **Pre-Algebra** after meeting assessment criteria, completion of summer work, and teacher recommendation

INCOMING 7TH GRADE STUDENTS

Meets criteria to take Pre-Algebra Assessment

Meets criteria to be placed in Pre-Algebra

Does not meet criteria to take Pre-Algebra

WAIVE

ALGEBRA I

GRADE 7 PRE-ALGEBRA

GRADE 7 MATH

Meets criteria to take Geometry

Meets criteria/Teacher recommendation to take Algebra I

Does not meet criteria/Teacher recommendation to take Algebra I

Meets criteria/Teacher recommendation to move to Pre-Algebra in January

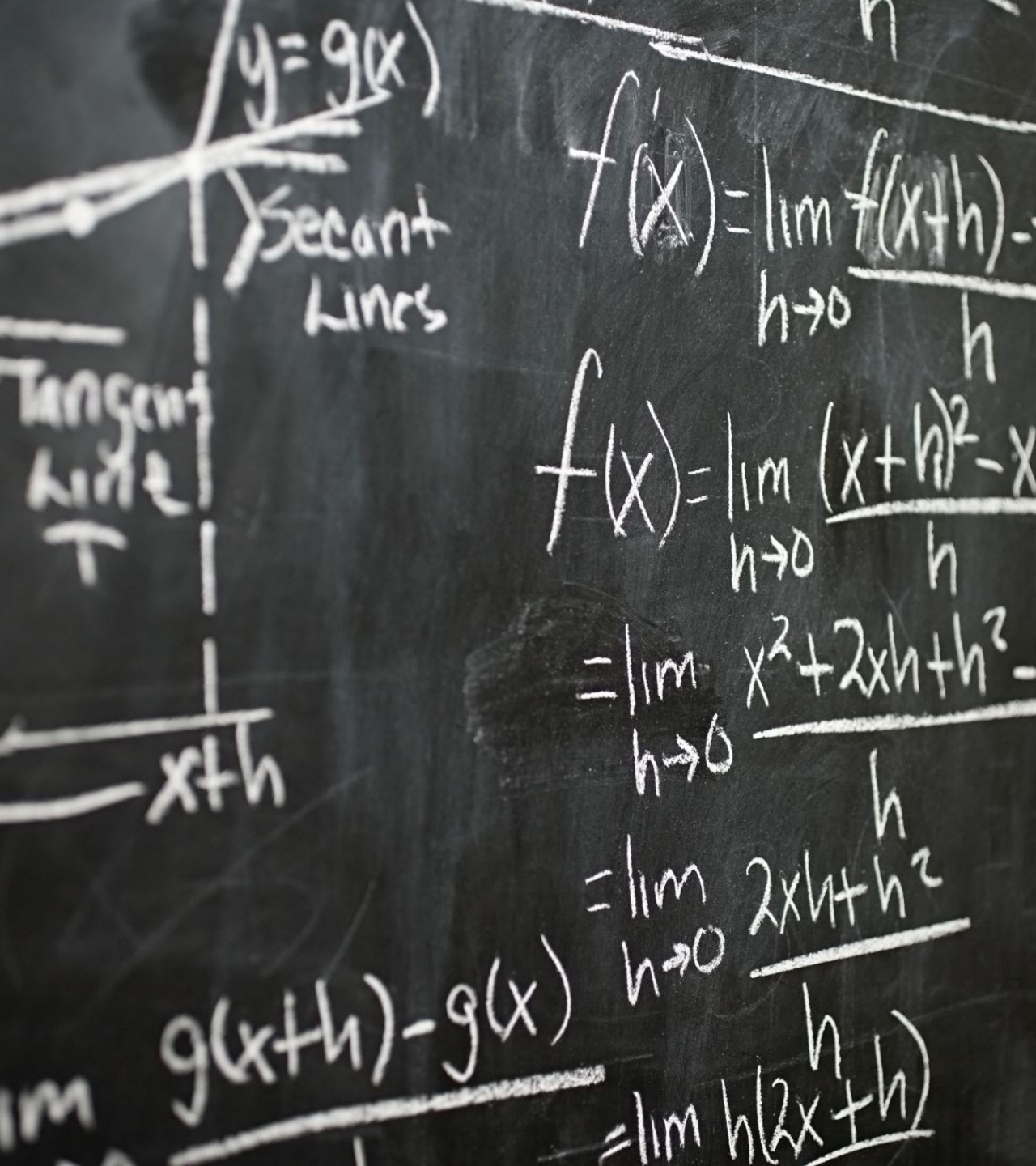
Teacher recommendation and successful completion of summer work and assessment criteria.

WAIVE

GEOMETRY

ALGEBRA I

GRADE 8 MATH



HS Pathway to Advanced Math

- Students placed in Grade 7 Math/Comp, Advanced Math/Pre-Calculus and Accelerated Math/Algebra I **ALL** have a pathway to Calculus in HS.
- The next slides include:
 1. Overview of HS Math Pathways.
 2. Trace the current pathway of the 2018-19 Grade 7 Cohort.
 3. Trace the current pathway of the 2019-20 Grade 7 Cohort.

Student Example #1 – Geometry in 8th Grade

Geometry

Algebra I

8th Grade Math

	Grade	Course
	8 th	Geometry
	9 th	Algebra II Hon/L1
	10 th	Precalculus Hon/L1
	11 th	Calculus AP/L1
	12 th	AP Statistics

Student Example #2 – Algebra I in 8th Grade

Geometry

Algebra I

8th Grade Math

	Grade	Course
	8 th	Algebra 1
	9 th	Geometry Hon/L1
	10 th	Algebra II Hon/L1
	11 th	Precalculus Hon/L1
	12 th	Calculus AP/L1 & AP Statistics

Student Example #3 – 8th Grade Math

Geometry

Algebra I

8th Grade Math

Option #1		
	Grade	Course
	8 th	8 th Grade Math
	9 th	Algebra I
	10 th	Geometry
	11 th	Algebra II
	12 th	Precalculus

Option #2 – Summer Geometry		
	Grade	Course
	8 th	8 th Grade Math
	9 th	Algebra I
	Summer	Geometry
	10 th	Algebra II
	11 th	Precalculus
	12 th	Calculus

Option #3 – Double Math		
	Grade	Course
	8 th	8 th Grade Math
	9 th	Algebra I
	10 th	Geometry & Algebra II
	11 th	Precalculus
	12 th	Calculus

2018-19 Grade 7 Cohort* - Current 12th Graders

Algebra I in 7th Grade and Geometry in 8th Grade

	Grade	Course
	8 th	Geometry
	9 th	Algebra II Hon/L1
	10 th	Precalculus Hon/L1
	11 th	Calculus AP/L1
	12 th	AP Statistics

7 th Grade Accelerated/Algebra I / 2018-19 School Year / 4 Students Total	
Course in Grade 11 (2022-23 School Year)	AP Calculus
# of Students	4
Current Grade 12 Course (2023-24 School Year)	AP Statistics
# of Students	4
Percent	100%

In 2018-19, 4 students were enrolled in Algebra I in 7th grade; all 4 advanced to AP Calculus and AP Statistics in their 12th grade year.

* These are “loose” cohorts, as the data does not account for students who moved in or out of district.

2019-20 Grade 7 Cohort* - Current 11th Graders

Algebra I in 7th Grade and Geometry in 8th Grade

	Grade	Course
	8 th	Geometry
	9 th	Algebra II Hon/L1
	10 th	Precalculus Hon/L1
	11 th	Calculus AP/L1
	12 th	AP Statistics

7 th Grade Accelerated/Algebra I / 2019-20 School Year / 2 Students Total		
Current Grade 11 Course (2023-24 School Year)	AP Calculus AB	AP Calculus BC
# of Students	1	1

In 2019-20, 2 students were enrolled in Algebra I in 7th grade; both students are currently in AP Calculus this year.

* These are “loose” cohorts, as the data does not account for students who moved in or out of district.

2018-19 Grade 7 Cohort* - Current 12th Graders

PreAlgebra in 7th Grade and Algebra I in 8th Grade

	Grade	Course
	8 th	Algebra 1
	9 th	Geometry Hon/L1
	10 th	Algebra II Hon/L1
	11 th	Precalculus Hon/L1
	12 th	Calculus AP/L1 & AP Statistics

7 th Grade Advanced/Pre-Algebra / 2018-19 School Year / 119 Students Total					
Current Grade 12 Course (2023-24 School Year)	<u>PreCalc L1</u>	Calc L1	AP Calc AB	AP Calc BC	AP Stats
# of Students	9	24	21	11	24
Percent	8%	20%	18%	9%	20%

In 2018-19, 119 students were enrolled in PreAlgebra in 7th grade; 89 of the students were enrolled in courses ranging from PreCalc L1 through AP Statistics in their 12th grade year, with the majority of students in one of the two AP Calc offerings.

2019-20 Grade 7 Cohort* - Current 11th Graders

PreAlgebra in 7th Grade and Algebra I in 8th Grade

	Grade	Course
	8 th	Algebra 1
	9 th	Geometry Hon/L1
	10 th	Algebra II Hon/L1
	11 th	Precalculus Hon/L1
	12 th	Calculus AP/L1 & AP Statistics

7 th Grade Advanced/Pre-Algebra / 2019-20 School Year / 124 Students Total				
Current Grade 11 Course (2023-24 School Year)	Algebra II L1	<u>PreCalc L1</u>	<u>PreCalc LH</u>	AP Calc AB
# of Students	13	56	28	1
Percent	11%	46%	23%	1%

For the tables above, if a student is currently in Alg II L1, they will most likely be in PreCalc L1 next year. For the students in PreCalc LH, they will most likely be in either AP Calc class and/or AP Stats. For the students in PreCalc L1, they may go to Calc L1 or AP Stats (they can waive into AP Calc).

2018-19 Grade 7 Cohort* - Current 12th Graders

7th Grade Math, then 8th Grade Math

Option #1		
	Grade	Course
	8 th	8 th Grade Math
	9 th	Algebra I
	10 th	Geometry
	11 th	Algebra II
	12 th	Precalculus

7 th Grade Math/Comp / 2018-19 School Year / 161 Students Total					
Current Grade 12 Course (2023-24 School Year)	<u>PreCalc</u> L1	Calc L1	AP Calc AB	Statistics L1	AP Stats
# of Students	19	3	1	16	1
Percent	12%	2%	1%	10%	1%

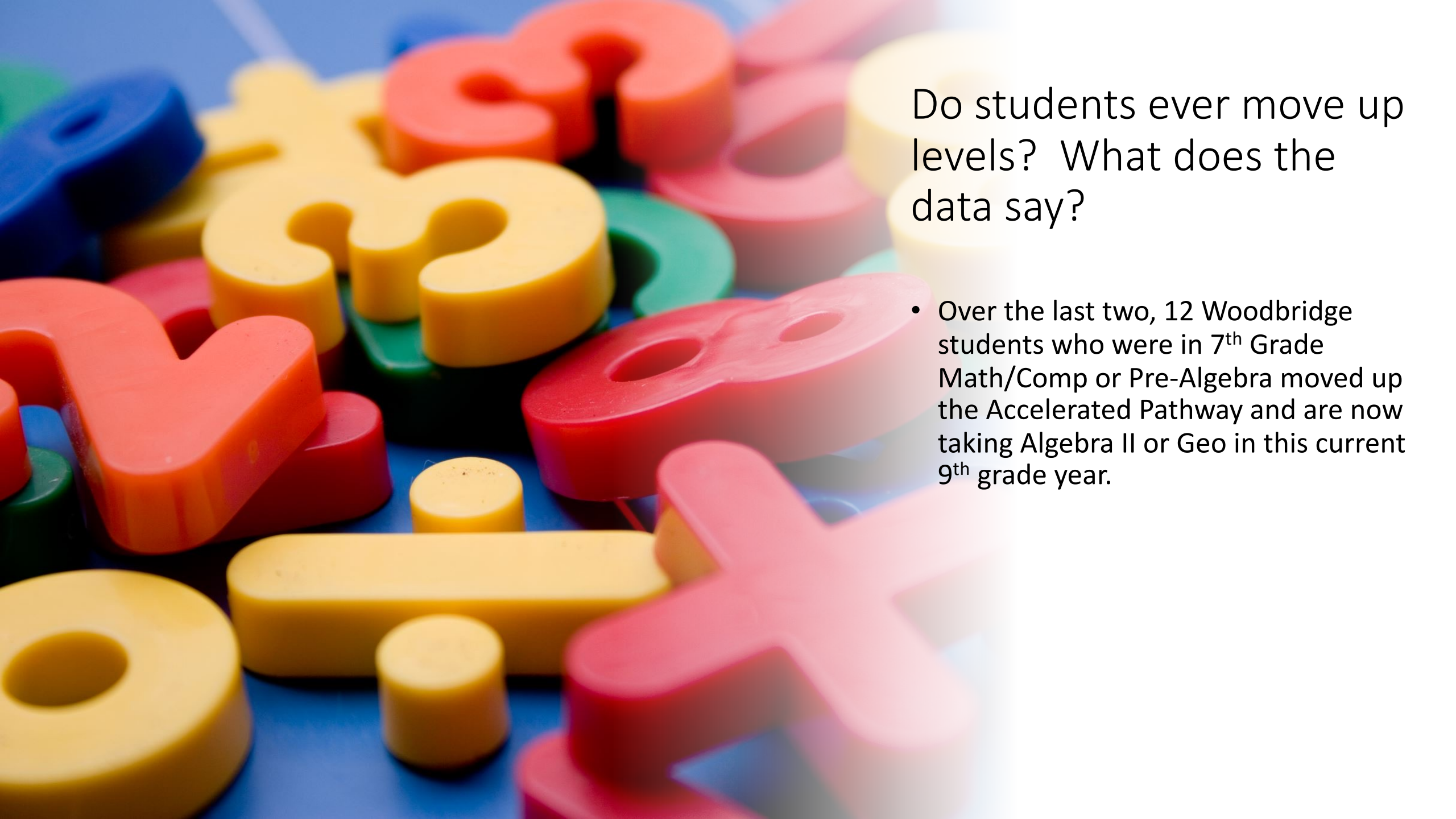
2019-20 Grade 7 Cohort* - Current 11th Graders

7th Grade Math, then 8th Grade Math

Option #1		
	Grade	Course
	8 th	8 th Grade Math
	9 th	Algebra I
	10 th	Geometry
	11 th	Algebra II
	12 th	Precalculus

7 th Grade Math/Comp / 2019 School Year / 154 Students Total		
Current Grade 11 Course (2023-24 School Year)	Algebra II L1	<u>PreCalc LH</u>
# of Students	21	1
Percent	14%	1%

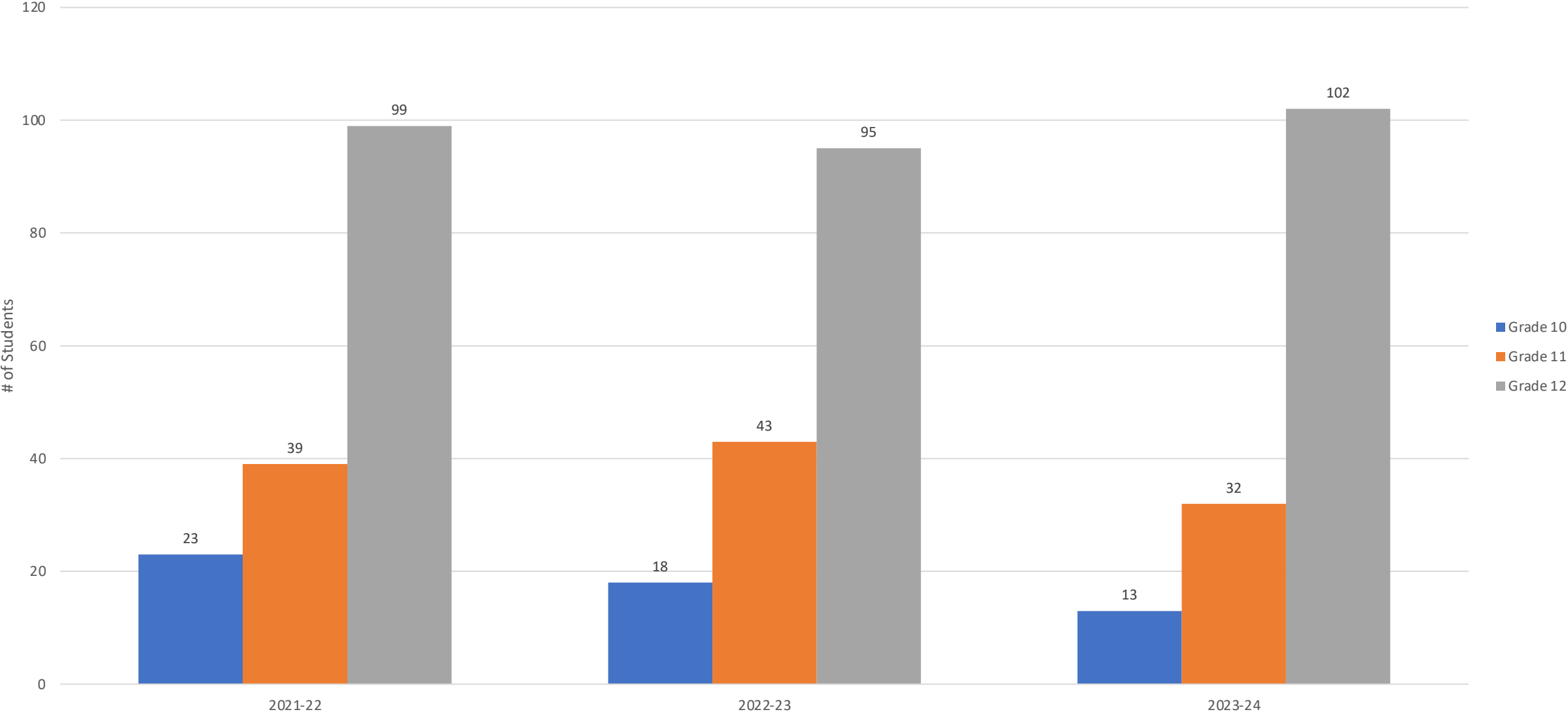
For the tables above, if a student is currently in Alg II L1, they will most likely be in PreCalc L1 next year. For the students in PreCalc LH, they will most likely be in either AP Calc class and/or AP Stats. For the students in PreCalc L1, they may go to Calc L1 or AP Stats (they can waive into AP Calc).



Do students ever move up levels? What does the data say?

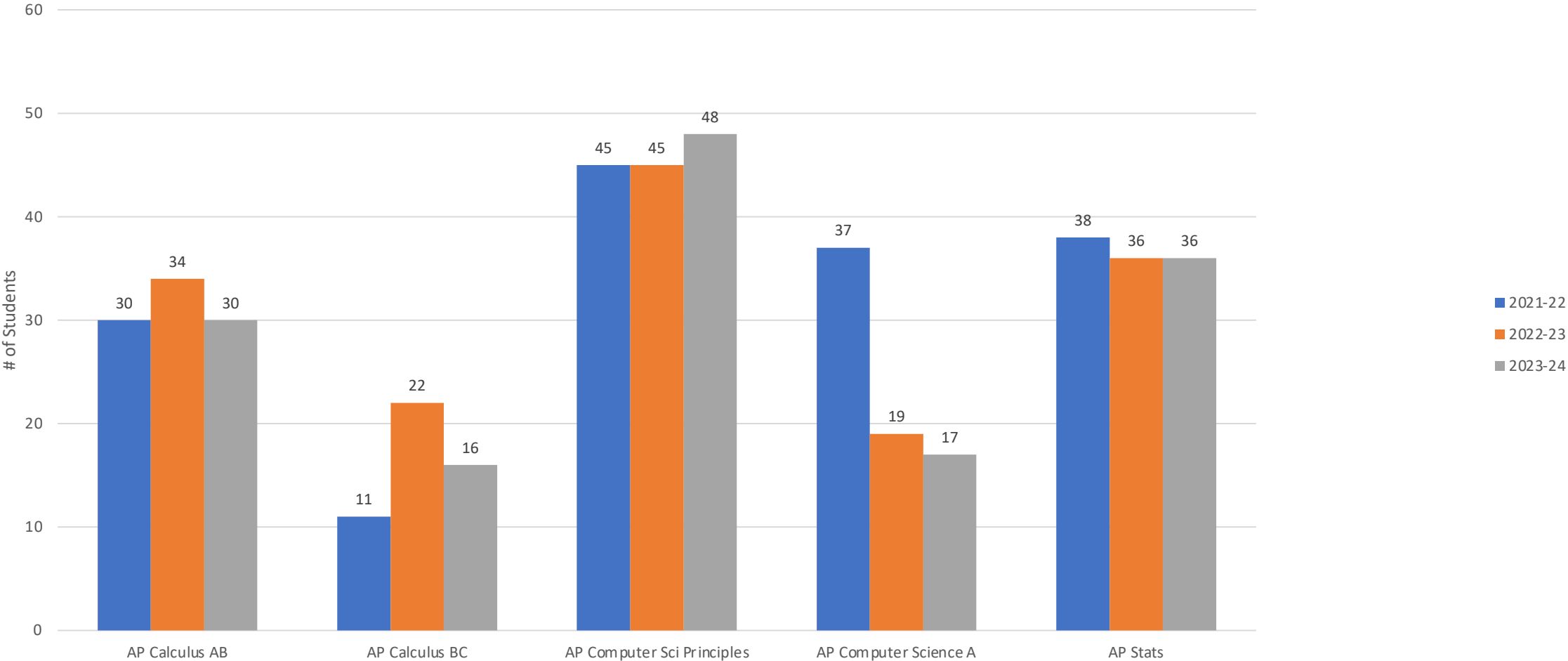
- Over the last two, 12 Woodbridge students who were in 7th Grade Math/Comp or Pre-Algebra moved up the Accelerated Pathway and are now taking Algebra II or Geo in this current 9th grade year.

AP Math Enrollments by Grade by Year



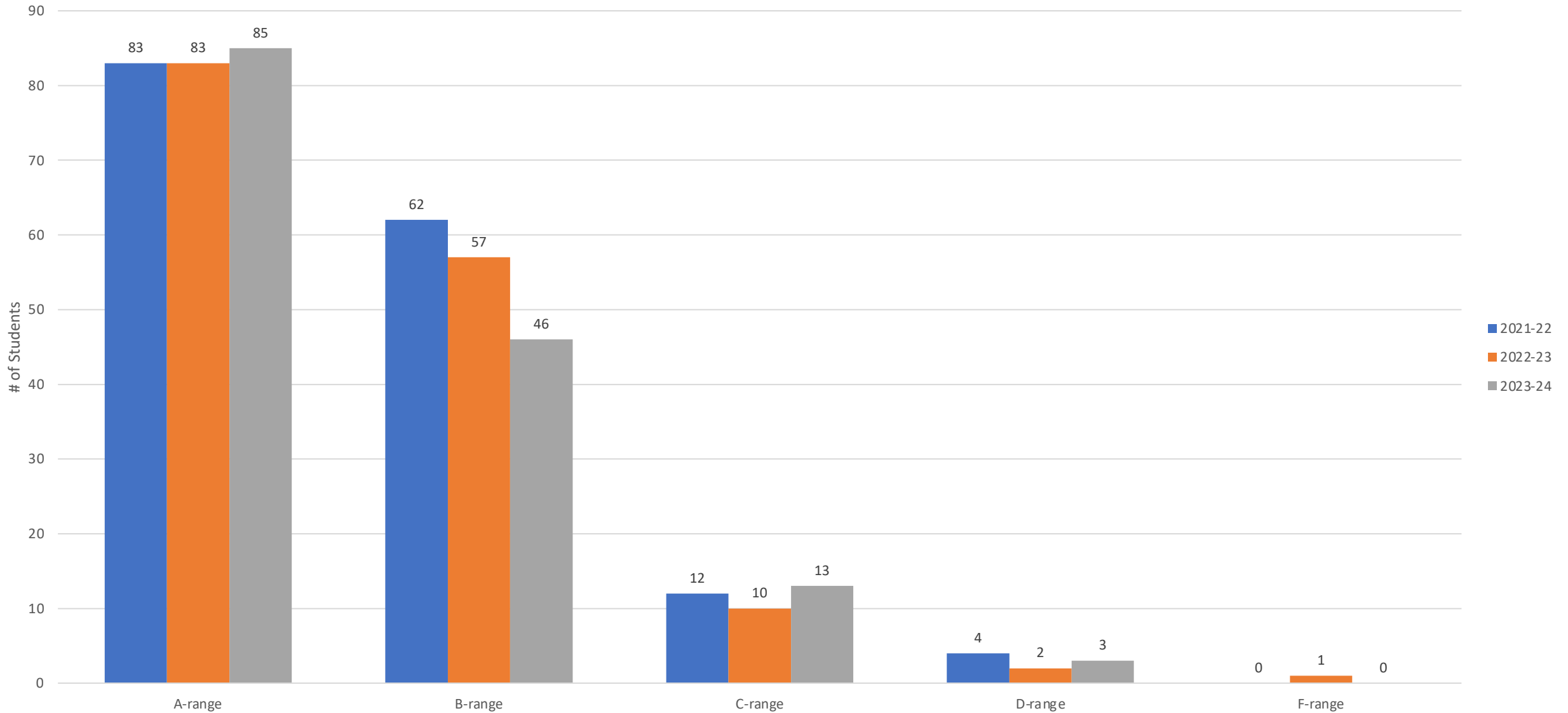
ARHS Enrollment Totals:2021-22=161, 2022-23=156, 2023-24=147

Math AP Enrollments by Course by Year



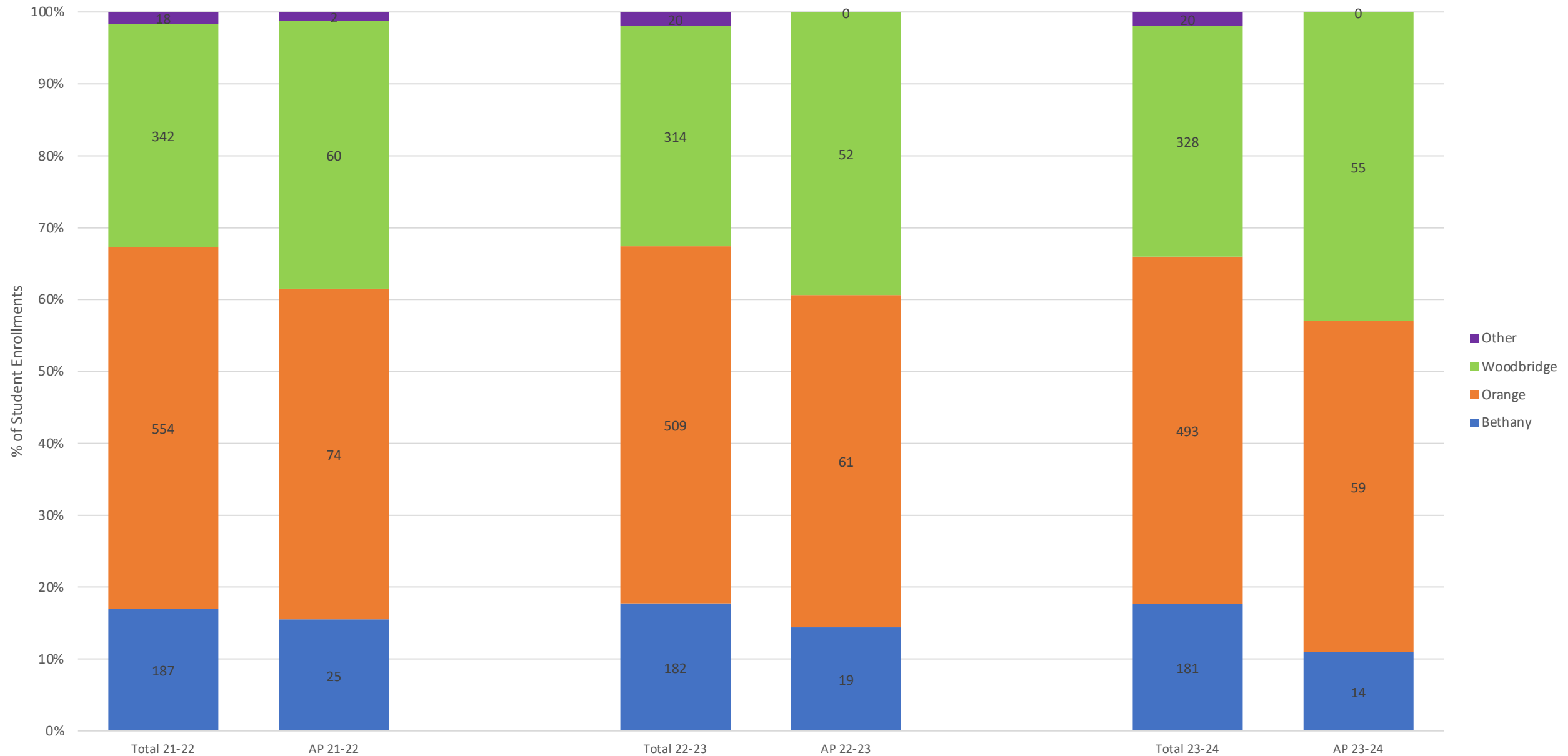
Total Enrollment in AP Math Course: 2021-22=161, 2022-23=156, 2023-24=147

AP Class Performance by Year



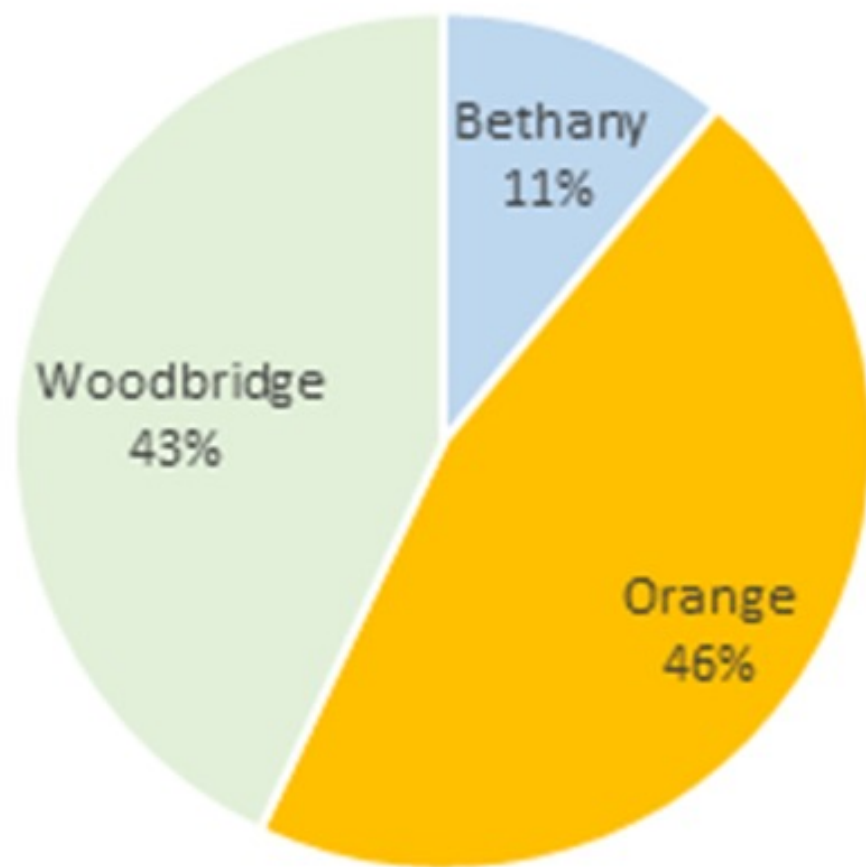
Total Enrollment AP Math Courses: 2021-22=161, 2022-23=156, 2023-24=147

AP Enrollments by Town – 3 Year Trend



*Numbers reflect where students resided in any given school year

AP Math 2023-2024 Current Towns



The image features a dense field of three-dimensional question marks. Most of the question marks are a dark, matte grey color and are scattered across the frame, creating a textured background. In the center of the image, a single question mark stands out prominently, rendered in a bright orange color. This orange question mark is slightly larger and more sharply focused than the others. Overlaid on the orange question mark is the word "Questions" in a clean, white, sans-serif font. The lighting is soft, casting subtle shadows and highlights on the surfaces of the question marks, which adds to the three-dimensional effect.

Questions