

Math Update

For 6-8th grade math

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**MONTCLAIR
PUBLIC SCHOOL
DISTRICT**



Agenda

- Presentation purpose
 - Background
- Data Review
- Recommendations
- Next Steps



Purpose: Reviewing Algebra for All

In 2015-2016, the Middle School Math program was revised to increase opportunity to access upper level math courses for ALL students.

- A two-year math course for all MS students called Algebra A/B was implemented.
- This change promoted **EQUALITY**, Yet, more work is needed towards providing true **EQUITY**.

2021-2022: This is the first year for the first cohort that started with Algebra for all to graduate high school.

- “Algebra for All” needs to be adjusted to support ALL learners.



2021 – 2022: Middle School Math Review

MS Math Review committee formed of MS and HS math teachers and administrators to analyze district data and research programs to form recommendations for MS Math Programming, Textbooks and Resources, including supports that best serve the students of Montclair Public Schools.

- Agreed **Equity** for our learners must be at the front of all decision making.
- Agreed we must continue to support Algebra for all in MS.
- Agreed more support is needed for struggling learners, especially now with the impact COVID has had on learning.



EQUITY in Math

An excerpt from the National Council for Teachers of Mathematics (NCTM) position statement:

Achieving access and equity requires that all stakeholders ensure that **all students have access** to a challenging mathematics curriculum taught by skilled and effective teachers who:

- **differentiate instruction** as needed;
- monitor student progress and make needed accommodations;
- and offer **remediation** or additional challenges **when appropriate**.



Why Middle School Algebra?

A few minutes (2011) from [Bob Moses](#),

American educator and civil rights activist and creator of The Algebra Project:

The notion is simple:

Every child must master algebra,

preferably by eighth grade,

for algebra is the gateway to the college-prep curriculum,

which in turn is the path to higher education,

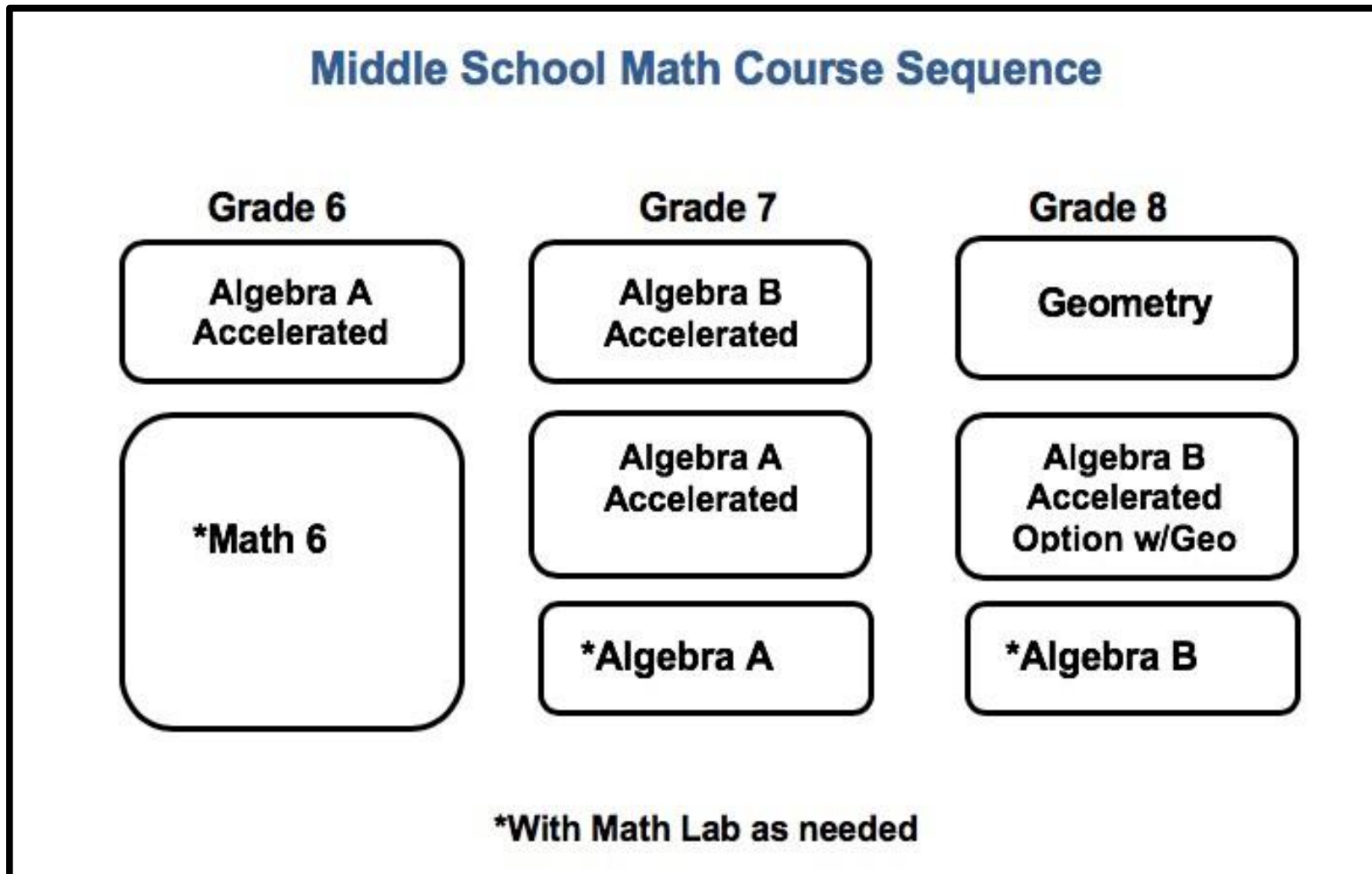
which is seen as the key to even basic success in modern society.



Current MS Math Program

Renaissance Middle School

- In 2018 began to offer Accelerated Algebra A in Grade 6
- Only offers the Accelerated level of Algebra A/B
- The teachers in RMS differentiate to meet student's needs.



Current Grade 8 to 12 Math Course Pathways

Middle School	Grade 9	Grade 10	Grade 11	Grade 12
Geometry (*Opt Alg B Accel with Geometry)	Algebra 2/Trig H Algebra 2 H (*Opt Geo. H)	Trig/Calc. H or Pre-Calc. H	AP Calc. BC AP Calc. AB Calc. H	Calc. III HH AP Calc. BC AP Calc. AB AP Statistics
Algebra B Accel. or Algebra B	Geometry H or Geometry	Algebra 2 H or Algebra 2	Trig/Calc. H Pre-Calc. H Pre-Calc. ** Prob & Stats H ** Prob & Stats	AP Calc. AB Calc. H AP Stats Prob. & Stats H Prob. & Stats
Algebra B	Algebra I H or Algebra I	Geometry H or Geometry	Algebra 2 H or Algebra 2	Pre-Calc. or Prob. & Stats

* Option to double in Geometry in 8th or 9th Grade to accelerate.

** Alternate option to Pre-Calculus or recommend taking Probability & Statistics after Pre-Calculus.



Steps taken to Support our Students

Since 2016, Montclair continues to provide ongoing professional development for K-12 math teachers in using data to inform instruction, blended learning, student engagement strategies, cultural responsiveness and differentiation.

In 2018, a review of the middle school math program showed that more was needed to support our students, resulting in:

- A **new K-5 Math Program** implemented called **Go Math!** that includes a Personalized Math Trainer (PMT) tool for providing intervention and enrichment.
- A K-5 instructional strategy introduced called “MATH Workshop” model which utilizes stations and a collaborative approach.
- **Middle School Math Lab, (support course) curriculum created that includes guidelines for placement and support.**



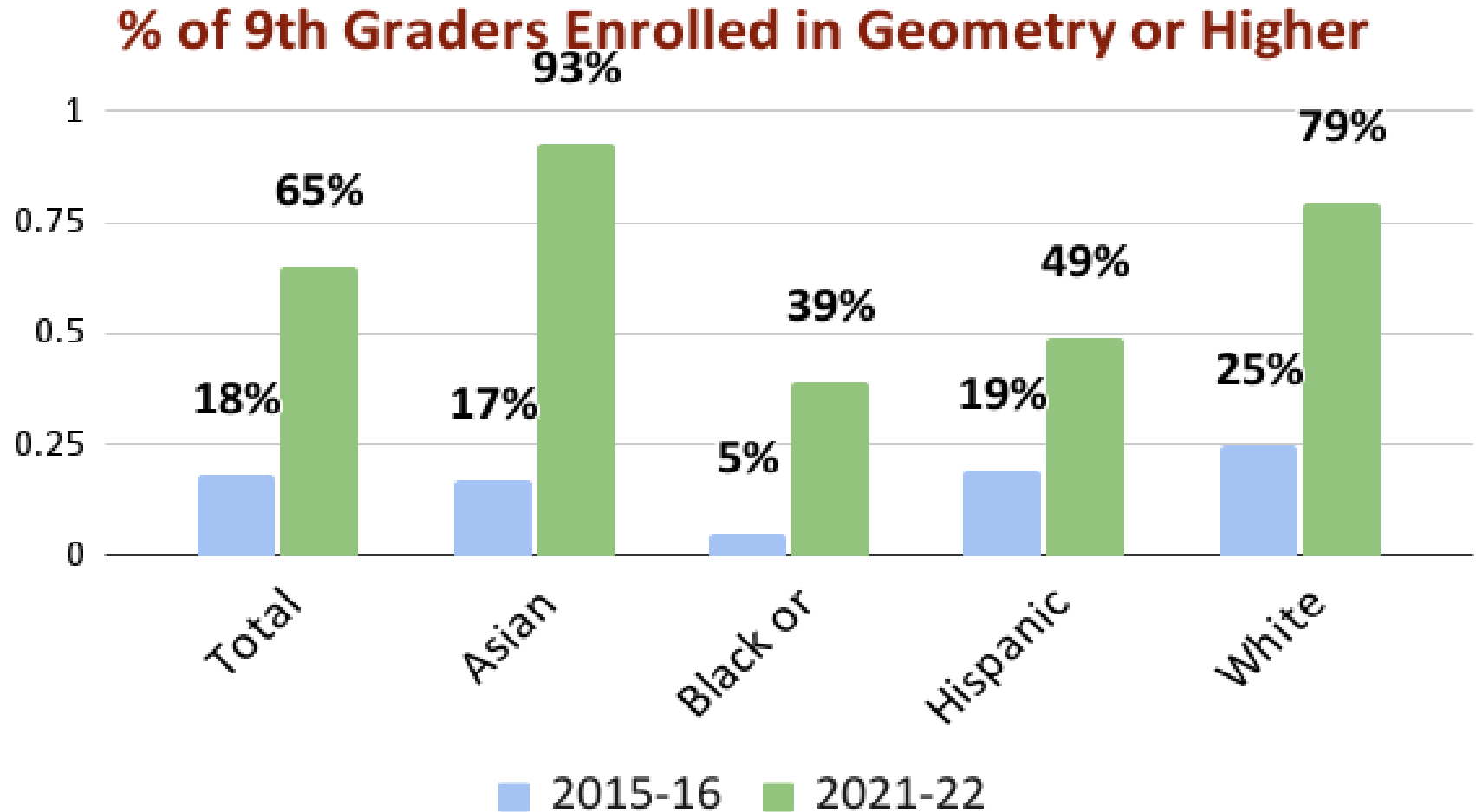
Work towards EQUITY

% increase:

Black: 34%
White: 54%
Hispanic: 30%
Asian: 54%

Gap between Black to White:

2015-16: 20%
2021-22: 40%



How are our students doing?

- A third (33%) students enter 9th grade above Geometry Honors.
- A third (33%) students enter 9th grade with Geometry.
- A third (33%) students enter 9th grade with Algebra.

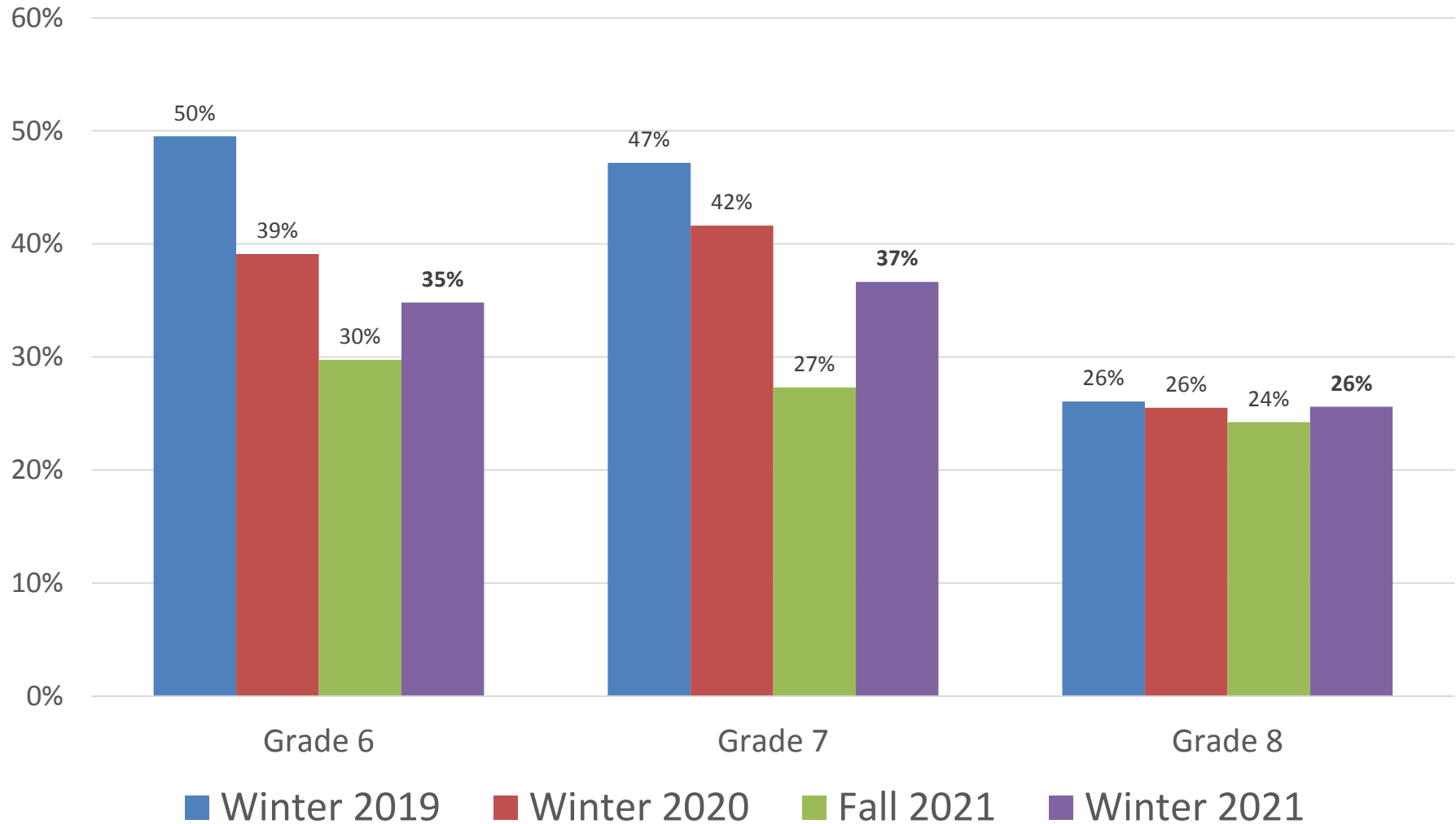
Algebra for All is successfully advancing majority of Montclair students.

- Of those that take Geometry or higher in 9th grade, about 90% are successfully averaging 75% or higher in math.
- Of those that repeat Algebra in 9th grade, about 70% are successfully averaging 75% or higher in math.
- **However, 20% of our students overall continue to struggle with math.**



Student Achievement Data

% Level 4 or 5 (Met/Exceeded Expectations) in STAR
Math
District-Wide | Grades 6-8



District trend prior to 2018 which mirrors state assessments with flatline data in MS although we cover advanced content.

Data from 2020-2021 demonstrates interrupted learning due to COVID/Remote instruction.

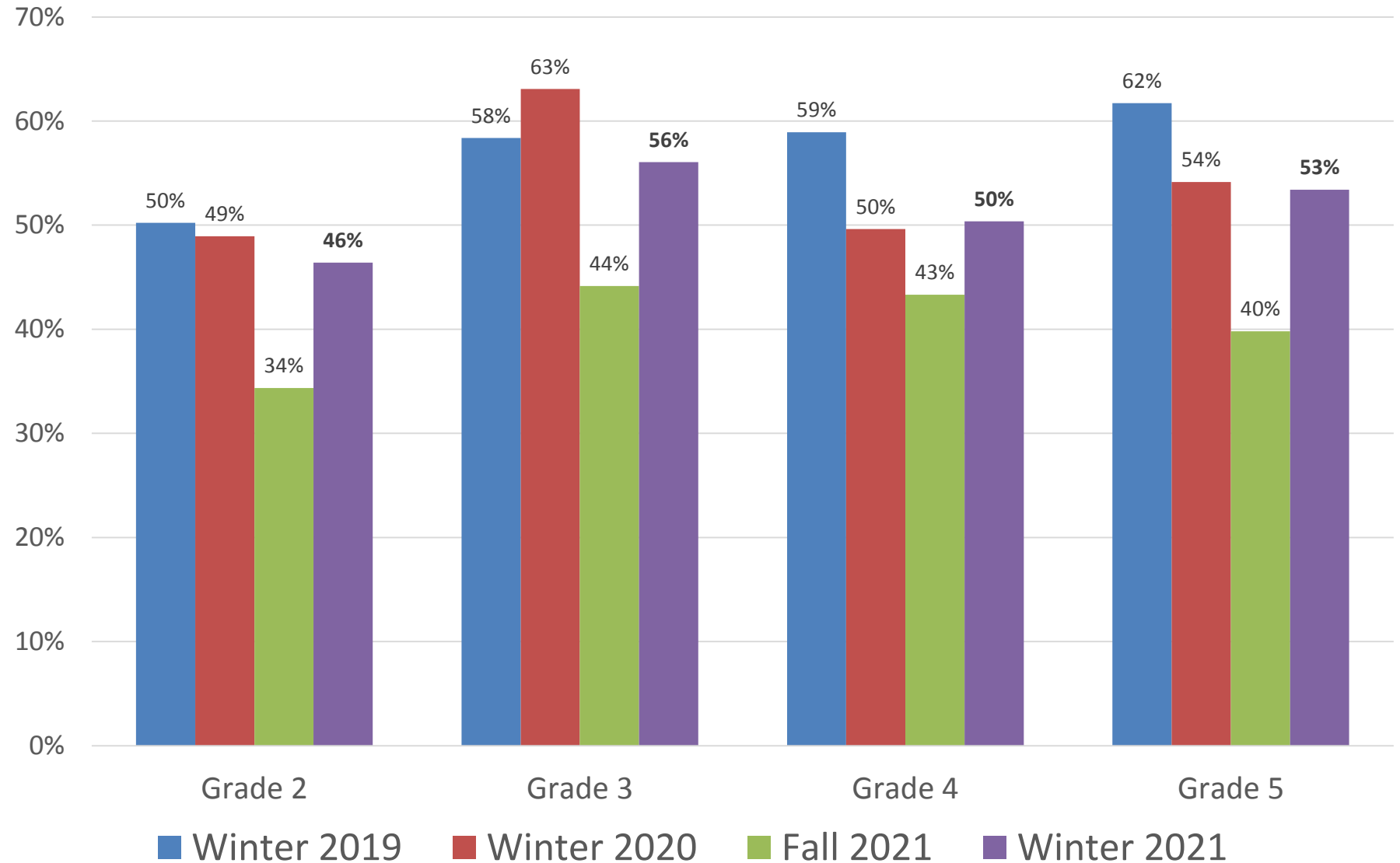


Student Achievement Data

% Level 4 or 5 (Met/Exceeded Expectations) in STAR Math
District-Wide | Grades 2-5

District trend shows slow improvement with Go Math for grade 3 and 4 with dip in grade 5 before COVID.

Data from 2020-2021 demonstrates interrupted learning due to COVID/Remote instruction.



EQUITY in Math

[New Jersey Student Learning Standards for Math \(NJSLS\)](#)

Excellence in mathematics education requires **equity**

- **high** expectations,
- worthwhile **opportunities**,
- **accommodation** for differences,
- resources,
- and **strong support for all** students.



Proposal

6 th Grade	
Concern	Solution
<ul style="list-style-type: none">• Curriculum pacing is condensed because pre-Algebra skills were added in order to prepare for 7th grade Algebra	<ul style="list-style-type: none">• Remove certain pre-Algebra skills and move them into the 7th grade curriculum to allow more time with 6th grade standards. Thereby building a stronger foundation for the subsequent years.



Proposal

7th Grade	
Algebra A	Pre-Algebra
<p>Concern: Students who struggle in Algebra A have less success with Algebra B. Some end up repeating Algebra A even though they passed class.</p> <p>Concern: Students who struggle in Algebra A need Math 7/8 content standards to build stronger foundation for Algebra.</p>	<p>Solution: Pre-Algebra will provide students with stronger foundation for Algebra 1 and include middle school content standards by covering Math 7, Math 8 and early Algebra 1 content.</p>



Proposal

8 th Grade	
Algebra B	Algebra I
<p>Concern:</p> <ol style="list-style-type: none">1.) Algebra taught over 2 years while all HS math courses taught in 1 year.2.) Students who move into district are difficult to place.3.) Teachers must cover middle school math content and Algebra within course.	<p>Solution:</p> <ol style="list-style-type: none">1.) Algebra 1 covered in 1 year with stronger foundation preparation covered in Pre-Algebra.2.) Pre-Algebra/Algebra 1 are aligned with majority of other districts and easier to place students who move into district.3.) Pre-Algebra will cover the middle school math content needed to support Algebra 1, thus teachers can concentrate on Algebra 1.



Proposal

8 th Grade (Continued)	
Algebra B	Algebra Concepts
<p>Concern:</p> <ol style="list-style-type: none">1.) Little/no support for students not ready for Algebra B rigor. Instead students repeat Algebra A.2.) Math Lab 8 teachers express difficulty in supporting Algebra B while covering MS Math skills.	<p>Solution:</p> <ol style="list-style-type: none">1.) Algebra Concepts allows students to learn Algebra at appropriate pace covering Math 8 and Algebra 1 foundational standards.2.) Algebra Concepts will still introduce Algebra for all students and help strengthen the foundation needed to succeed in high school.



MS Math Modifications

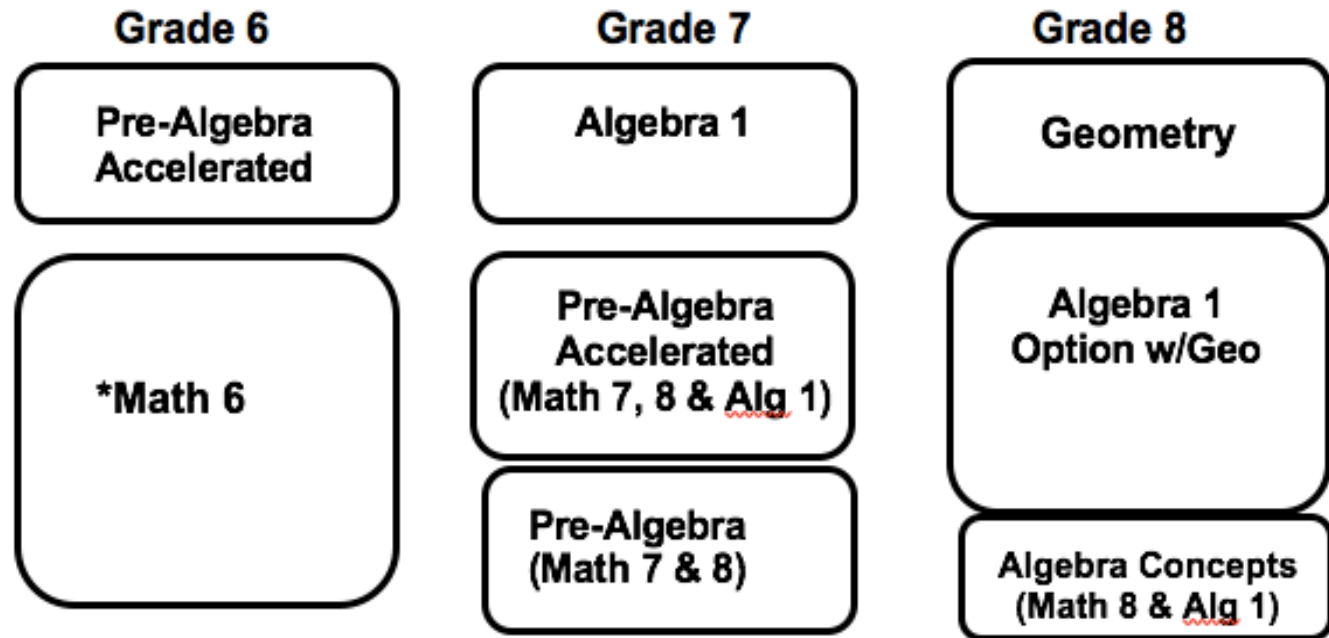
We Are Not Changing- We Are Modifying

Students who are high performing in 5th and 6th grade math will continue to have the option to take accelerated math courses in 7th and 8th grade.

Our aim is to **provide a stronger foundation** for the students that struggle with Algebra in 7th grade. They deserve a course that caters to their needs so they may be more eligible for advanced courses in high school.

Providing students with courses that meet their needs and build foundational skills is the **true work of equity**.

Middle School Math Course Sequence



*With Math Lab as needed



Course Comparisons

Current Course	Description	New Course	Description
Algebra A	Covers first third of Algebra 1 with Math 7 and 8 Geometry unit	Pre-Algebra	Covers Math 7 and 8 which is foundational Algebra, Prob and Stats and Geometry
Algebra A Accelerated	Covers first half of Algebra 1 with Math 7 and 8 Geometry unit	Pre-Algebra Accelerated	Covers Math 7 and 8 and early Algebra 1 concepts
Algebra B Accelerated	Covers second half of Algebra 1 with Math 7 and 8 Prob and Stats unit	Algebra 1	Covers all of Algebra 1
Algebra B	Covers second third of Algebra 1 with Math 7 and 8 Prob and Stats unit	Algebra Concepts	Covers Math 8 and early Algebra 1 concepts

8th -12th Grade Math Pathways

High School Math Course Sequence

Middle School

Geometry

Algebra 1

Algebra Concepts

Grade 9

Algebra2/Trig H
Algebra 2 H
(*opt Geo H)

Geometry H
or
Geometry

Algebra 1 H
or
Algebra 1

Grade 10

Trig/Calculus H
or
Pre-Calculus H

Algebra2/Trig H
Algebra 2 H
Algebra 2

Geometry H
or
Geometry

Grade 11

AP Calculus BC
AP Calculus AB
Calulus H

Trig/Calculus H
Pre-Calculus H
Pre-Calculus
** Prob & Stats H
** Prob & Stats

Algebra 2 H
or
Algebra 2

Grade 12

Calculus III HH
AP Calculus BC
AP Calculus AB
AP Statistics

AP Calculus AB
Calculus H
AP Statistics
Prob & Stats H
Prob & Stats

Pre-Calculus
or
Probability &
Statistics

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Next Steps:

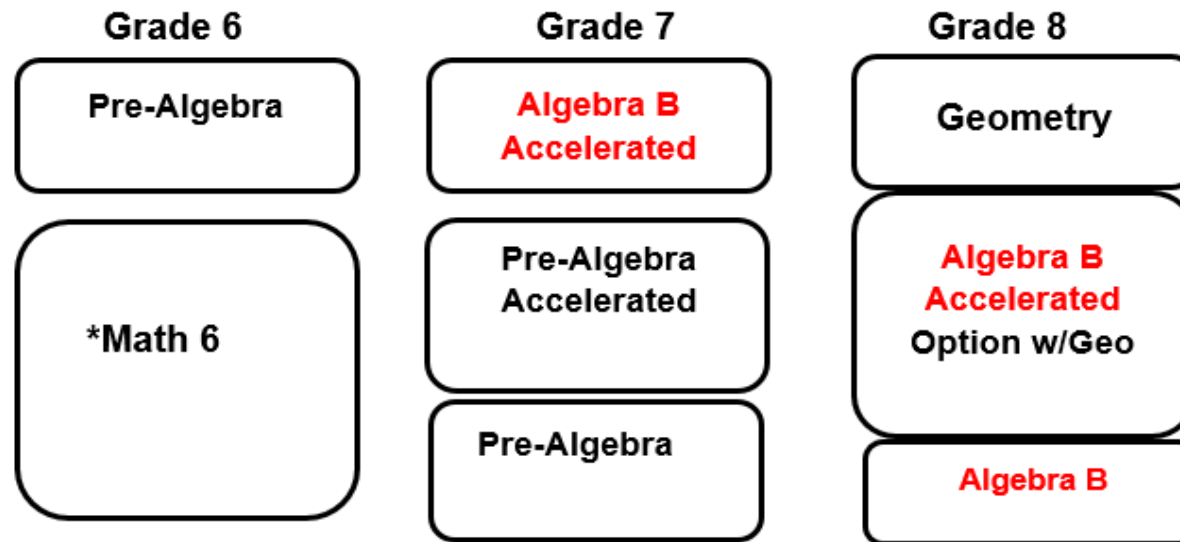
- Create **curriculum** for Pre-Algebra, Algebra Concepts and MS Algebra 1.
- Create **placement guidelines** to ensure fair practices.
- Purchase **textbook** aligned with program goals that includes resources for added support & enrichment.
- Continue to provide **District Math Night for families**.
- Use data to determine **professional development** needed best practices for teaching math, cultural responsive instruction and more.



Transition Plan

- Only 1 year needed for transition to new course sequence.
- All current Algebra A students will have Algebra B next year, including Accelerated.
- Teachers will use new textbook resources to support Algebra B and Math Lab students.
- **Math lab 8 will cover Algebra Concepts**

Middle School Math Course Sequence 2022-2023



*With Math Lab as needed

Thank you to the Middle School Math Review Committee for your work to analyze district data and research programs to support our learners.

Thank you to all of the Math and Math support teachers who support our students every day!

Thank you to the Montclair Board of Ed, Families and Staff for your continued support. A **survey for feedback** will be emailed to families and posted on the website soon!

