

***Examination of
Elementary Math Acceleration
and Support Model***



Manhasset School District Guiding Ideas:

- Each student's learning experience is rigorous, relevant, and meaningful.
- Each student develops meaningful connections with peers and adults.
- Each student learns in an environment that is safe and supportive.

Purpose of Today's Meeting

- Understand the current acceleration model's success and its limitations
- Review our proposal to address the limitations of the current model
- Facilitate a discussion to gather feedback that will inform our decision making

Format of Meeting

- **During the Presentation:** Record questions and thoughts/comments as they develop on Post-It notes.
- **After the Presentation:** Organize your post-its into two categories--questions and thoughts/comments--on the large chart-paper at your table. Ask clarifying questions.
- **Discussion:** Small group discussion to surface thinking
- **Share out**

Current Structure of our Accelerated Math Program

- Some students are identified for double acceleration in grade 5 based on 4th grade data, including math course averages, math final exam score, and CogAT score.
- Double accelerated students skip 5th grade math and take 6th grade math in grade 5. During 6th grade, these students follow a compact grade 7 and 8 curriculum.
- Additional students are identified for single acceleration in grade 7.
- Single accelerated students take a compact curriculum course that includes grade 7 and 8 mathematics in grade 7.

Current Structure of Our Accelerated Math Program

**Current Double Acceleration:
Skips 5th grade Math**

DOUBLE	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
	Grade 4 Math	Grade 6 Math	Grade 7 & 8 Math	Algebra	Geometry	Algebra 2	Pre-Calc	AP Calc BC	Multivariable Calculus

**Current Single Acceleration:
Combines 7th and 8th grade Math**

SINGLE	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
	Grade 4 Math	Grade 5 Math	Grade 6 Math	Grade 7 & 8 Math	Algebra	Geometry	Algebra 2	Pre-Calc	AP Calculus AB or BC

Current Program: Benefits and Challenges

Benefits:

- High level of challenge for some students
- Some students can access Multivariable Calculus in high school.

Challenges:

- It is virtually impossible to be added to double accelerated track after 5th grade. The current model does not account for differences in student readiness for advanced math after elementary school.
- Students in double accelerated math skip the 5th grade math curriculum all together. High school teachers report gaps in learning for double accelerated students.
- Acceptance or rejection can have adverse effects on students' social and emotional health.

Key Questions Driving The Administrative Team's Examination

- Does our program align with our mission, vision, and guiding ideas?
- How do we support students at all levels?
- What is the impact of the accelerated curriculum model on a student's future mathematics study?
- How do the changes in our Math in Focus curriculum impact our accelerated model?
- Can we provide multiple entry points for acceleration to account for differences in student readiness?
- What impact would changes to our program have on other areas?

Guiding Research

“The mindset a student holds in math could affect how they see their overall intelligence.” (Boaler, 2010)

“Most people think they are either born with or without math ability, something they essentially cannot change.” (Allen and Schnell, 2016)

Guiding Research

“Tracking harms achievement of the low and middle groups and does not improve achievement of high-attaining students.”

(Boaler, 2013)

Guiding Research

“Test scores and measures of achievement tell you where a student is, but they don’t tell you where a student could end up.”

(Carol Dweck)

Guiding Research

“By providing all students with the opportunity to work on high ceiling, low floor, advanced math concepts, all students are given high expectations and sent the message that they can do high-level math.”

(Sun, 2018)

*A look at some
data...*



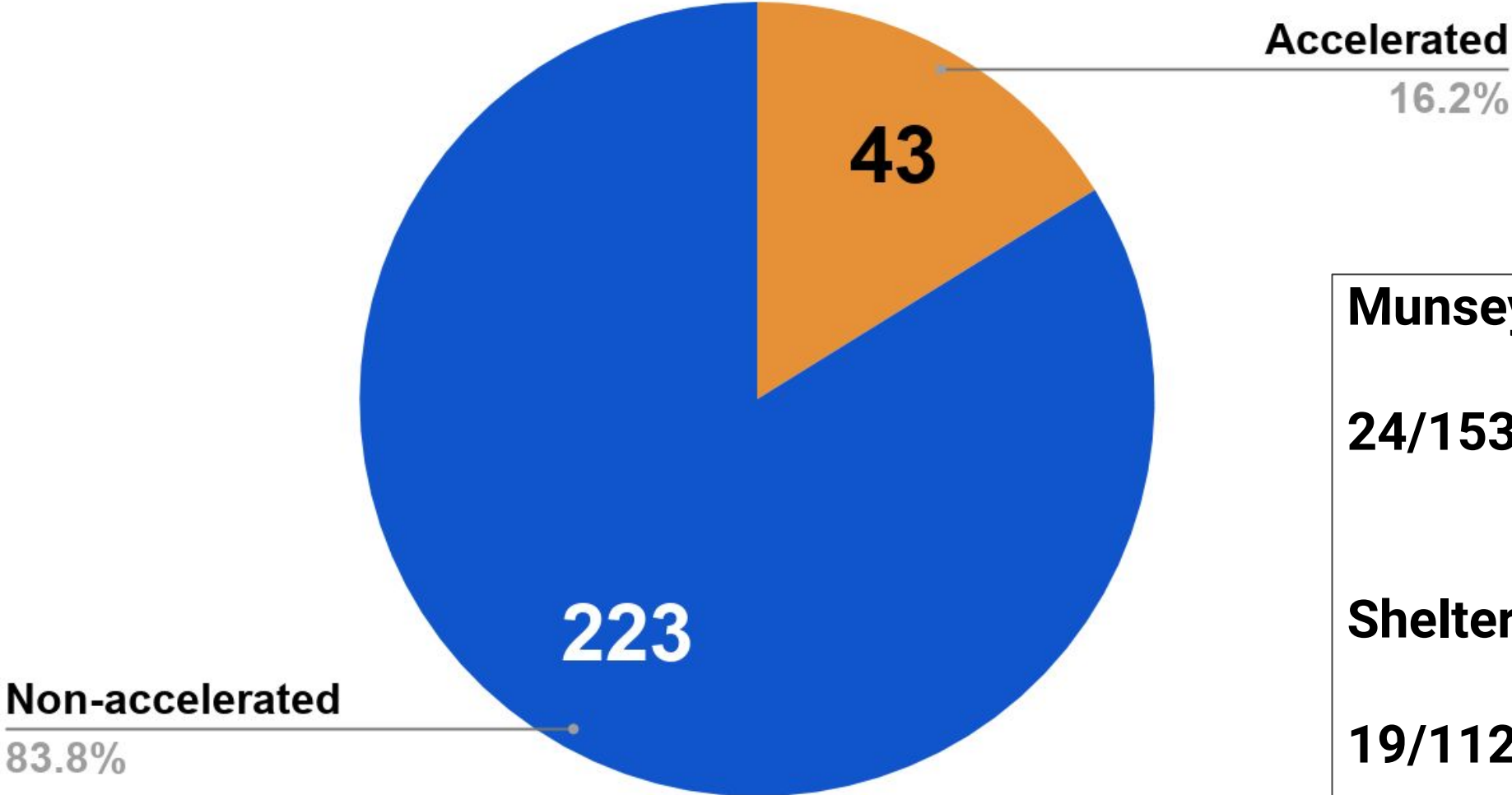
Evolution of Our Math Program



- At the time when elementary acceleration was introduced, a less rigorous elementary math program was being utilized and Common Core standards had not yet been introduced.
- Our new 2020 Math in Focus edition offers enrichment opportunities for each lesson, rather than for each chapter. Math In Focus leaders said, *“It is a bad idea to skip fifth grade math.”*
- Our aim is to continue to shift the study of mathematics from mechanical facts and procedures to multiple approaches through inquiry, collaboration, and a growth mindset ***for greater numbers of students.***

Enrollment in Accelerated Math: Grade 5

Current 5th Grade Class - Mathematics



Munsey Park:

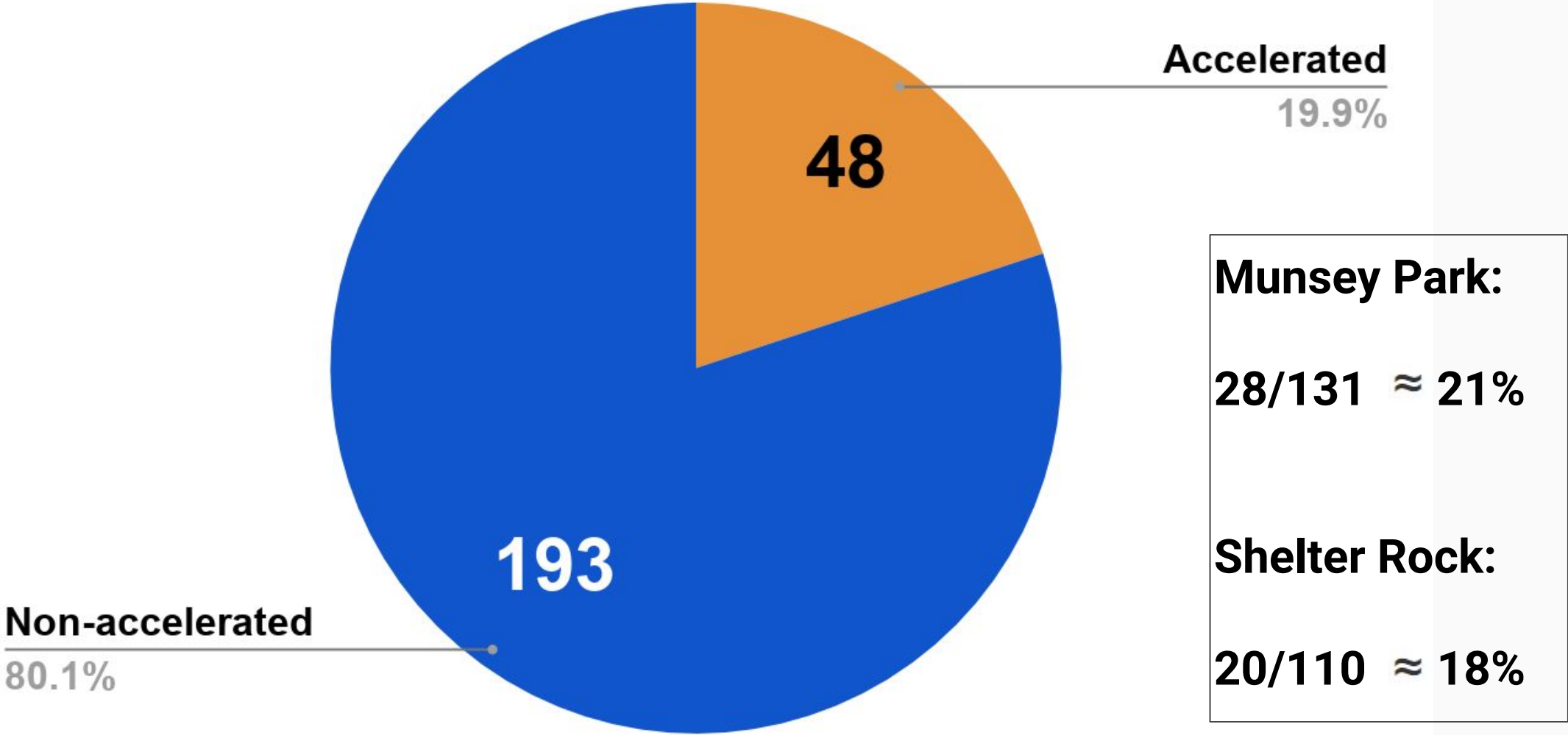
24/153 \approx 16%

Shelter Rock:

19/112 \approx 17%

Enrollment in Accelerated Math: Grade 6

Current 6th Grade Class - Mathematics



Comparable School District Models

Jericho

- **Accelerates students beginning in Grade 7**

Syosset

- **Accelerates approximately 10 students beginning in Grade 6**

Herricks

- **Accelerates students beginning in Grade 7**

Roslyn

- **Accelerates approximately 8 - 10 students in Grade 6**

East Williston

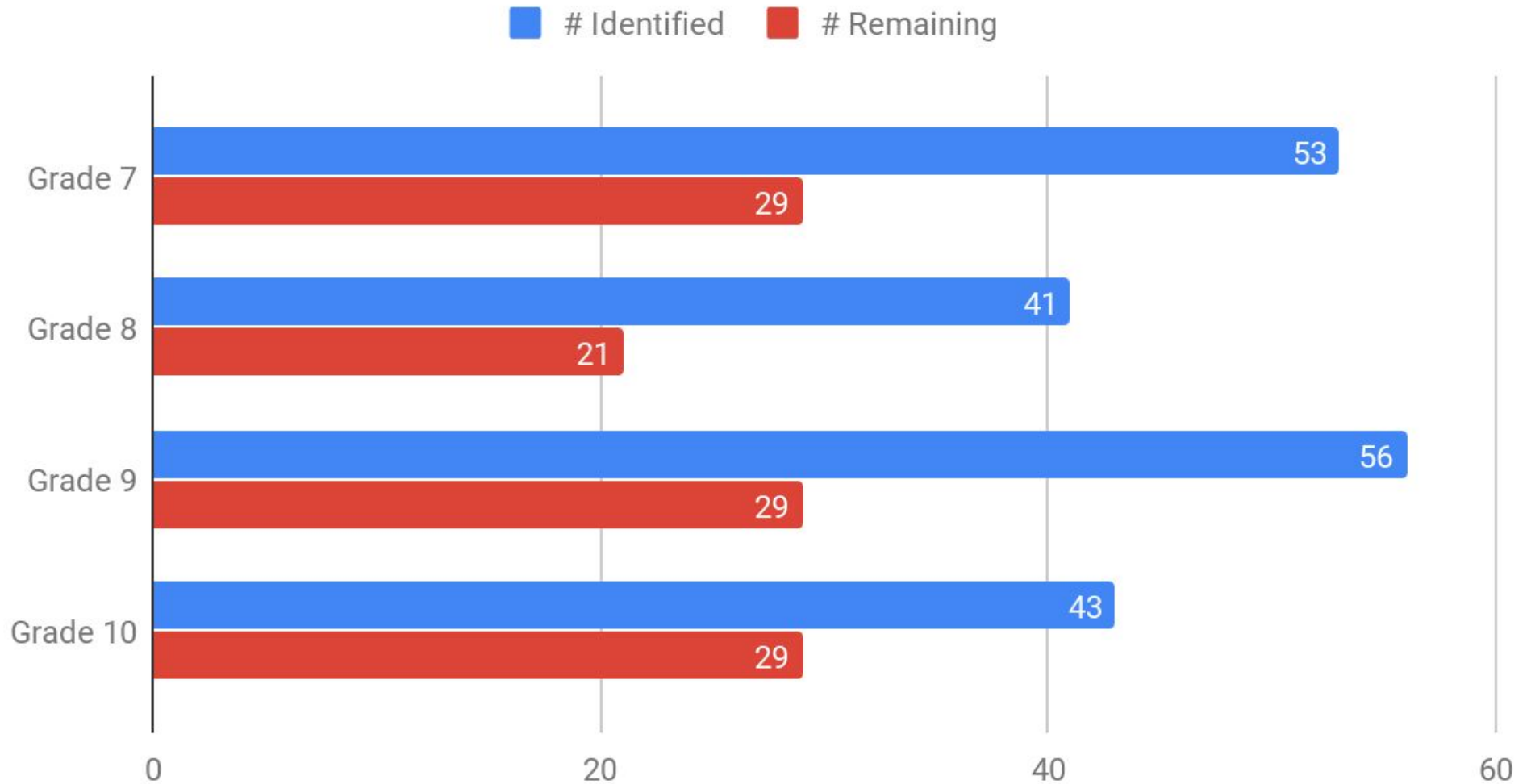
- **Accelerates students beginning in Grade 7**

Half Hollow Hills

- **Accelerates 3-5 students beginning in Grade 6; additional 1-3 students in Grade 7**

Attrition Rates from Accelerated Math (as of June, 2019)

Identified and # Remaining



Why is this attrition significant?

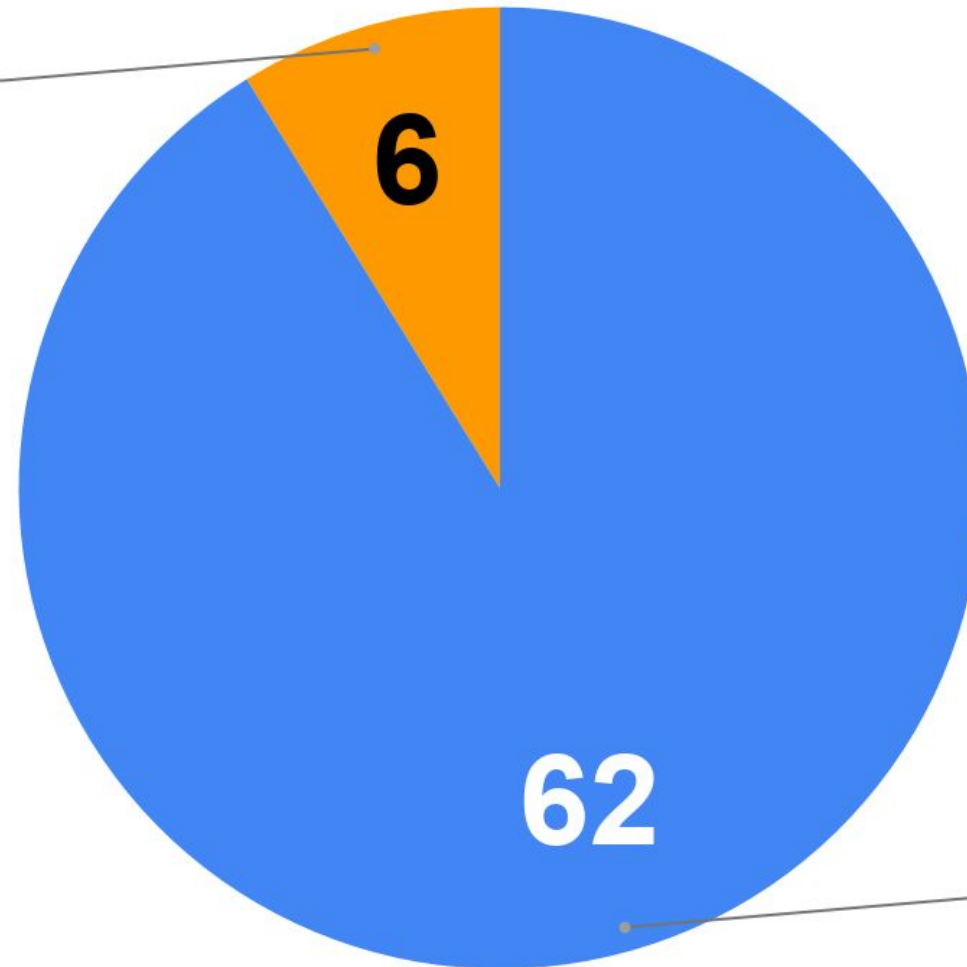
- Students who fall short of grade prerequisites are placed in non-honors classes with peers 2 years older
- It's often detrimental to a student's social-emotional well-being to be asked to step out of the program
- Foundational concepts within shallow/skipped curriculum do not get revisited

Equity of Access: *A Look at Multivariable Calculus*

5th Grade Academic Math Track (last 3 cohorts)

General Ed.

8.8%



Accelerated

91.2%

Our Goals

*Restructure the program to **expand access** to students **when they demonstrate** their readiness for higher-level mathematics without skipping grade level content.*

*Proposed
alterations to
our accelerated
model...*



Proposed Alterations to our Accelerated Model

- Heterogeneously group students in grade 5 and 6.
- Build time into the 5th and 6th grade schedule for enrichment, extension and support.
- Continue to offer a compact curriculum course to allow for single acceleration in grade 7.
- Create concurrent enrollment opportunities in the secondary school to allow students to accelerate:
 - Geometry & Algebra 2 (grade 9 or 10)
 - AP Calculus BC & Multivariable Calculus (grade 12)

Possible Impact of the Proposed Alterations

Geometry H - 9th Grade

All of the 9th grade accelerated Geometry H (52) students are enrolled in **at least one elective or study hall**:

- 38% (20) have a **study hall**
- 23% (12) are enrolled in a **2nd math course**
- 21% (11) are enrolled in a **2nd English course**

Multivariable Calculus - 12th Grade

All of the Multivariable Calculus students (20) are enrolled in **at least one elective or a free period**:

- 45% (9) are enrolled in a **2nd AP social studies course**
- 35% (7) are enrolled in a **2nd AP math course**
- 30% (6) have a **free period**

H.S. students will choose courses based on their interests.

Proposed Acceleration Pathway

Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Grade 5 Math	Grade 6 Math	Grade 7/8 Math	Algebra	Geometry	Algebra 2	Pre-Calc	AP Calc Or AP Calc & Multivariable Calc
				Or			
				Geometry & Algebra 2	Pre-Calc	AP Calc	Multivariable Calc

Strengthen Foundational Math Skills for ALL Students by Building In Additional Time For Targeted Instruction

- Examine the 5th and 6th grade schedule to increase Math and ELA instruction by 40 minutes every other day.
- During the additional 40 minutes of instruction provide all students with the instruction they need:
 - Support Time - AIS services can be a pull-out to supplement instruction
 - Enrichment Time - Delivered in the classroom by the classroom teacher
 - Extension Activities - Delivered in the classroom by the classroom teacher

Proposed Criteria For 7th Grade Acceleration

- Holistic approach based on multiple measures:
 - NYS Assessment Scores in grades 3, 4, 5
 - Course Performance in grades 5 and 6
 - Teacher Recommendation
- Eliminates the need for the CogAT
- 7th grade single acceleration allows greater flexibility in identification (63% of the current 7th grade class is accelerated - compared to 16% in grade 5).

Impact on Science

AP Intensive Pathway

Under the restructured Math proposals:

- The restructuring of the math program would eliminate the AP Environmental Science option for 8th graders.
- Students would have the opportunity to take 3-4 AP science classes in secondary school instead of 4-5.
- All students would have access to the new science sequence that accelerates students into Living Environment in Grade 8.
- Students taking Algebra Honors in Grade 8 would be eligible to earn their way into Earth Science Honors/AP Environmental Science in Grade 9.

The **BIG** Idea

- **Current Model:** Based on 4th grade data, students are double accelerated in a single step
- **Proposed Model:** Based on multi-year data, students are single accelerated in 7th grade with opportunities for a second acceleration based on interest in high school

Why?

- Build stronger foundational math skills in elementary school
- Increase time for targeted math instruction
- Easier to catch up if not initially identified
- Easier to fall back if it becomes too much or if the student develops other interests



Feedback:

Group discussion to surface thinking:

1. Organize your post-its into two categories--questions and thoughts/comments--on the large chart-paper at your table.
2. Ask and discuss clarifying questions.
3. Share out patterns and themes from your small group discussion

