

Mathematics Department

State of the Department

Our Mission

In an environment of mutual respect, the Byram Hills School District and its community will provide students with the means, the knowledge, and the opportunity to excel in order to become productive and responsible citizens and leaders of the twenty-first century.

Through purposeful development of logic and reasoning skills, the mathematics department will empower students to identify and evaluate solutions to any given problem in order to develop confidence in critical thinking.

MISSION



Department Goals

Cultivate mathematical discourse and problem solving skills utilizing the book, **Building Thinking Classrooms in Mathematics**.

Improve feedback to students through supporting the development of **mathematical habits**

Support student engagement in **non-routine** problem solving.

Plan for/incorporate changes for the **NextGen** mathematical standards.

Continue the use of **data-driven instruction** and foster community relationships.

Building Thinking Classrooms

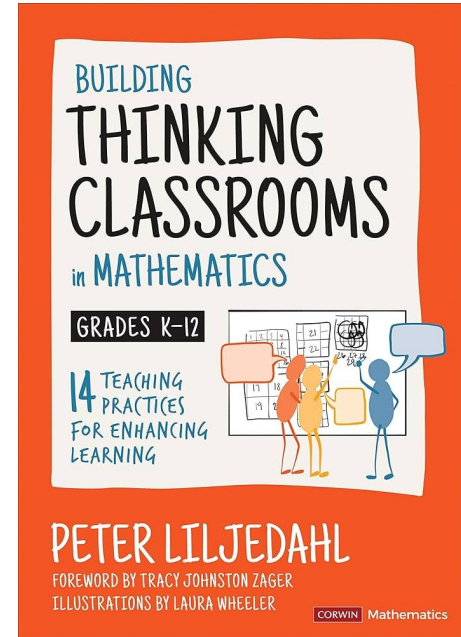
Vertical Non-Permanent Surfaces (VNPS)

Randomized Grouping

Curricular and Non-Curricular Rich Tasks

Assessment for Learning

Teacher Facilitates Learning Experiences



Overall, BTC advocates a student-centered approach to teaching and learning, with an emphasis on developing students' critical thinking skills, collaboration, and problem-solving abilities

Rich Tasks

Referred to as “low-floor, high-ceiling”

Offers students the ability to delve deeper into the mathematics

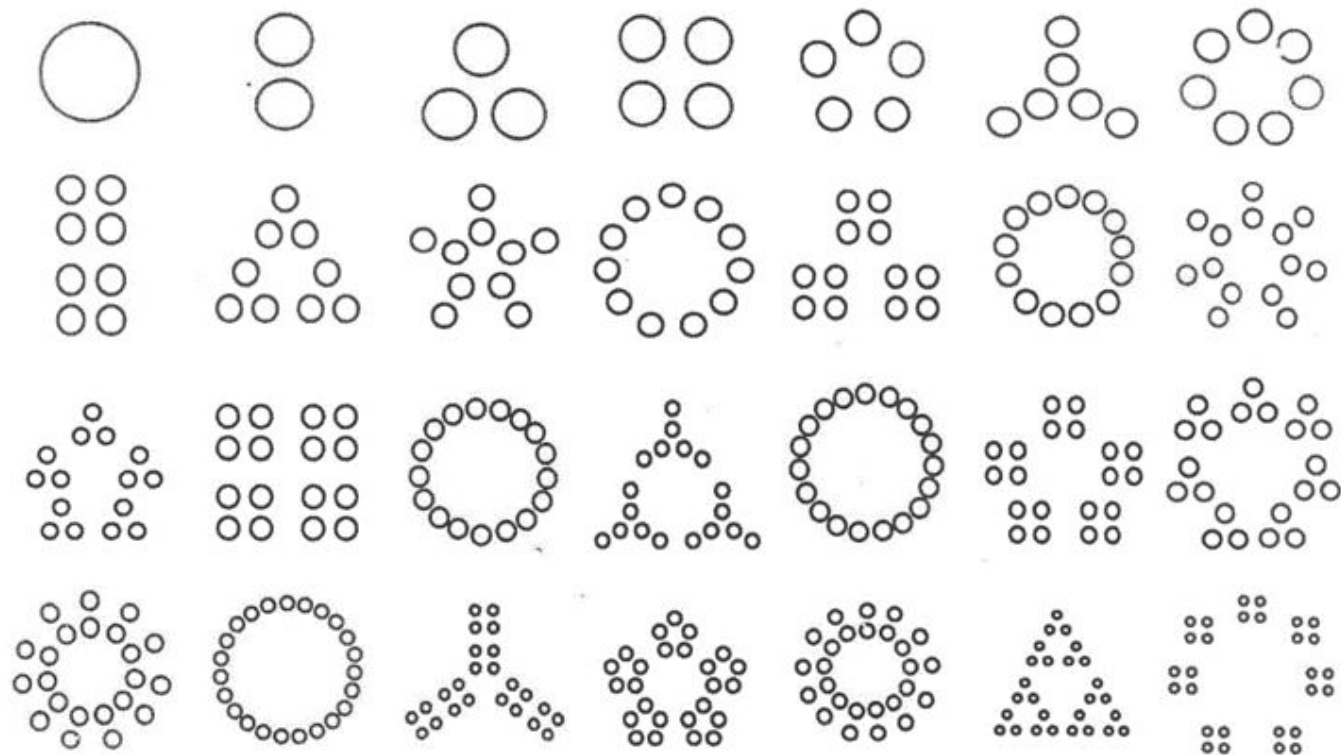
Can be open-beginning, open-middle, or open-ended

Encourages or requires multiple representations of mathematics

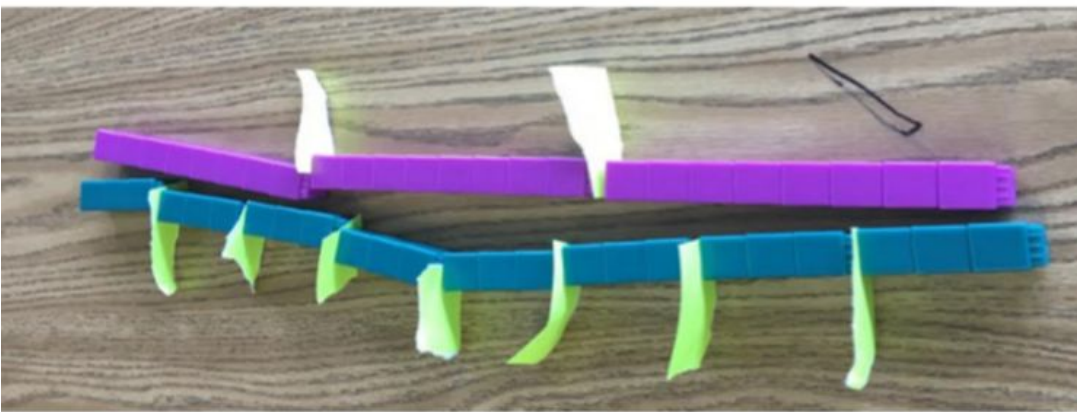
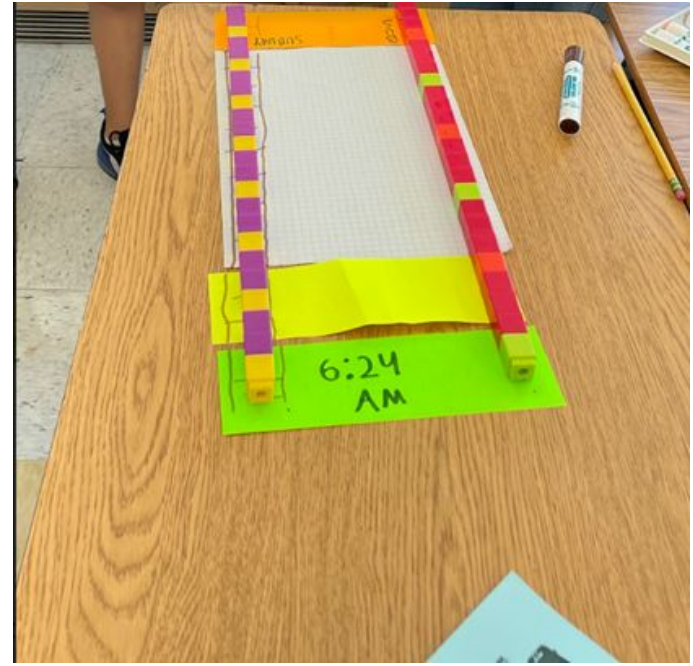
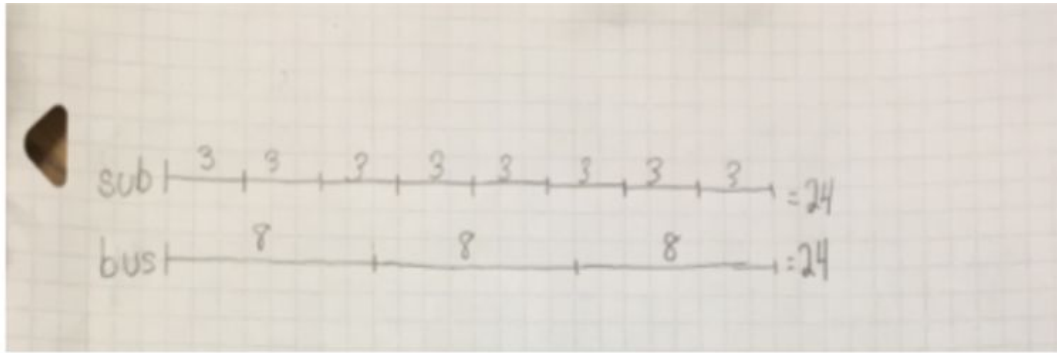
Promotes opportunities for mathematical discourse

Leaves “mathematics residue”

What could a rich task look like?







Curriculum Development and Alignment

Content for
Subsequent
**Math & Science
Courses**

Align content horizontally: Course teachers meet regularly for planning and assessments

**State and
National
standards**

Align content vertically: Department meeting time as well as teacher use of prep periods and summer work

**SAT/ACT
content**

Review assessment results: Prioritize areas of need from the 3-8 testing and Regents examination; shift focus based on trends in standardized tests (SAT, ACT, and APs)

Reflect and revise curriculum: Summer work focuses on grade level work, and course level work for new courses and curriculum changes

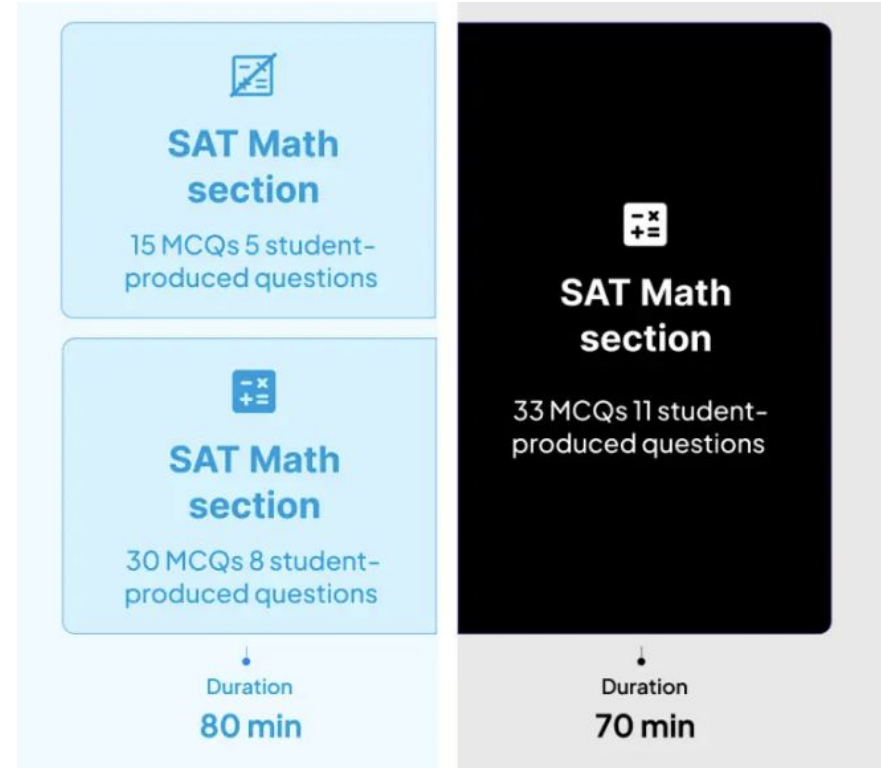
The new SATs

Desmos technology built into the exam

Questions are adaptive, with the later level of difficulty (second module) being based on the performance of the test taker at the beginning (first module)

Shorter testing time

Same curricular content, but we are watching for any shifts in focus and adjusting course standards as needed



Shift in the Regents Sequence

All students now take Algebra 1 within one year*

Newly revised Regents sequence (“Regents Algebra”, “Regents Geometry” and “Regents Algebra 2”) allows all students to receive full NCAA credit

All students now graduate with having completed higher level math courses aligned to college readiness standards

More flexibility allows for more math for more students!

*We still offer a self-contained expanded class when required by a student's IEP.

How are students performing now?



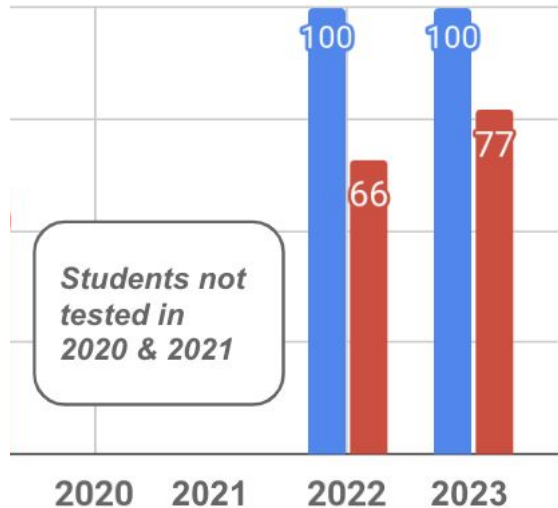
2023	MATH					
	3	4	5	6	7	8*
N	178	151	152	151	171	124
4	40	50	40	52	57	67
3	50	42	47	37	36	31
Level 3 + 4	90	92	88	89	93	98
Δ	+10	+12	+8	+4	+10	+20
2	8	7	10	9	6	1
1	2	1	3	3	1	1

* Only 8th grade students in Math 8 were tested. These results do not reflect students who took the Algebra 1 Regents exam.

% Reaching Proficiency

% Change from 2022

In **2022** and **2023**, **ranked #1** in Putnam, Westchester, and Rockland for students scoring levels 4 & 5 on the Algebra 1 Regents exam!



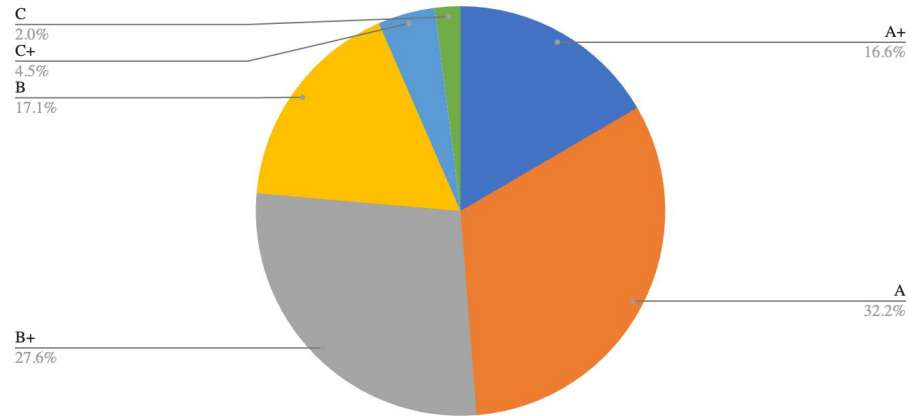
Accelerated Pathway: Then and Now

Prior to 2018: 1 in 5 students scored a C, D, or F in math by 11th grade.

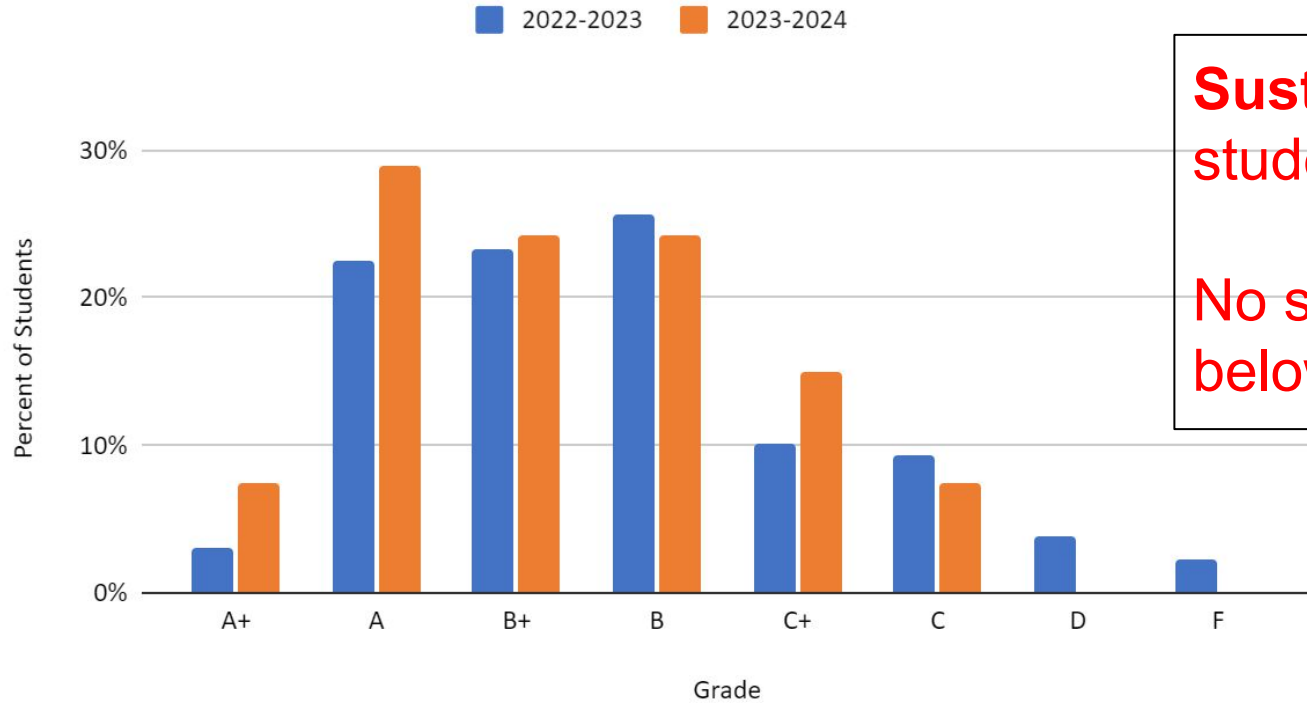
Now: 1 in 16 students scored a C in math by 11th grade.

0% D, F GRADES
6.5% C, C+ GRADES

PERCENTAGE OF EACH GRADE FOR ACCELERATED CLASSES



Algebra 1 - 3rd Quarter Year-to-Year Comparison



Sustained increase in students earning A, A+

No students achieving below a C

Student Survey Quotes

“Maybe do [grouping] less often like only for extensions or when separation is needed so when we are learning new units it is in the original classes.”

“You get to hear multiple different perspectives on one unit, which can really aid my learning.”

“I liked that I was put in classes with people who liked to go at their own pace, so I could learn at my speed, and I liked being able to switch it up and not be in the same classroom everyday.”

“I think [grouping] would be better to stay with the teacher you're assigned for a longer period of time, or there is a schedule posted at the beginning of the week of [which teacher] you go to.”

“I believe that the rotation of class rooms fit many need that aren't addressed with having only one teacher such as new environments and hearing explanations in different ways to better understand what I am doing.”

Next Steps

Continue to revise curriculum based on student performance and changes in state standards

Continue to examine grading and assessment practices, including work on common assessments

Continue to survey student experiences to inform instruction (including for use in the HCC Data Story)

Explore the potential for a parent focus group follow up