

Math and Business Instructional Programs Overview



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K – 12
February 16, 2023

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PRESENTATION OVERVIEW



- **K-12 Mathematics Overarching Instructional Themes**
- **Elementary-Specific Program Highlights**
- **Secondary-Specific Program Highlights**

The Math & Business Departments' work is at the intersection of the following district priority areas:



PRIORITY AREA 1: CONNECTIONS

PRIORITY AREA 2: PROFESSIONAL PRACTICE

**PRIORITY AREA 3: STUDENT INCLUSIVITY,
OPPORTUNITIES, AND SUPPORT**

K-12 MATHEMATICS OVERARCHING INSTRUCTIONAL THEMES

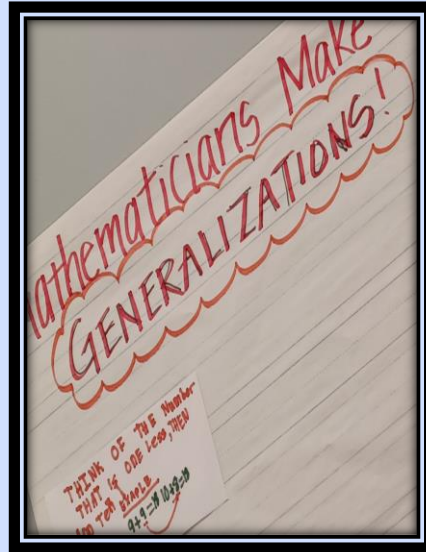


NEXT GENERATION LEARNING STANDARDS IN MATHEMATICS K - 12

- **Sequence and pacing**
- **Grades 3 – 8 assessed this spring**
- **Algebra – June 2024**
- **Geometry – June 2025**
- **Algebra 2 – June 2026**

STANDARDS OF MATHEMATICAL PRACTICE

- Make sense of problems and persevere in solving them
- Reason abstractly and quantitatively
- Construct viable arguments and critique the reasoning of others



- Model with mathematics
- Use appropriate tools strategically
- Attend to precision
- Look for and make use of structure
- Look for and express regularity in repeated reasoning

COMPUTER SCIENCE/DIGITAL FLUENCY STANDARDS

- Impacts of Computing
- Computational Thinking
- Networks and Systems Design
- Cybersecurity
- Digital Literacy

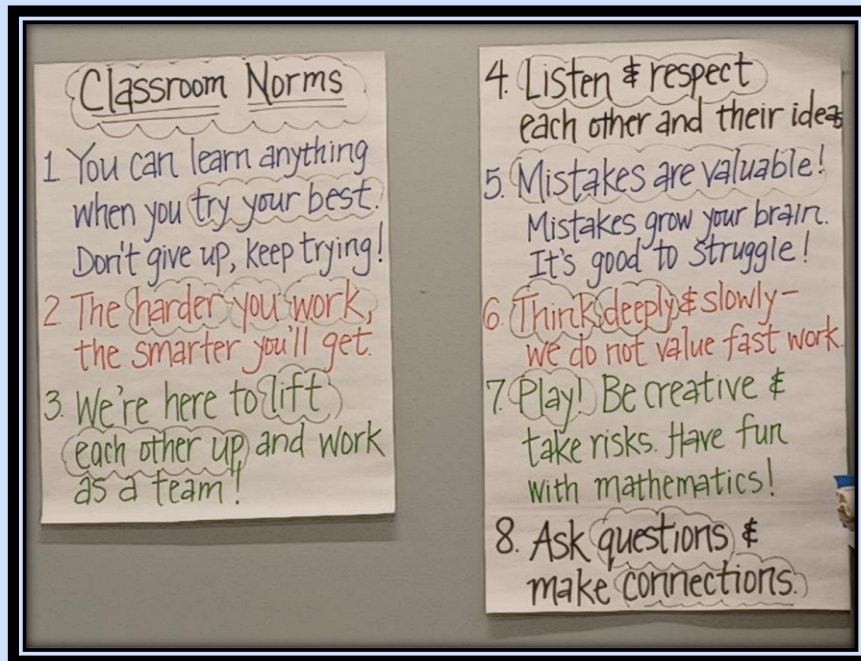


ACTIVE LEARNING & COLLABORATION

- Thinking instead of mimicking
- Finding one's mathematical voice
- Checking for understanding
- Learning vs. earning



ELEMENTARY INSTRUCTIONAL PROGRAM HIGHLIGHTS



ELEMENTARY MATH SPECIALISTS' ROLES

- Provide ongoing support for our students, teachers, and families
- Partners with our Special Education and ENL departments
- Provide Academic Intervention Services (AIS)
- Serve as instructional coaches for our teachers
- Push-in to classrooms to co-teach/model math lessons
- Serve as curriculum specialists
- Represent our department at IST, CSE, and 504 meetings
- Instruct the 6th grade accelerated math class
- Etc...




MATH IN FOCUS PROFESSIONAL DEVELOPMENT

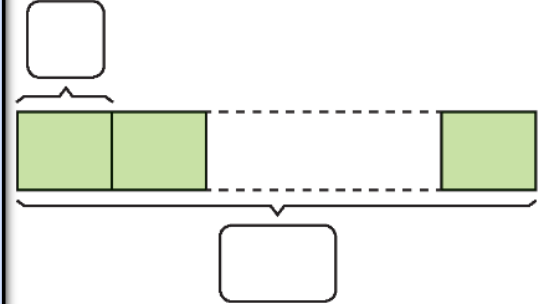
- Visualization
- Embedded Problem Solving
- Number Sense



TEACHERS' WORK TO CULTIVATE MATHEMATICAL THINKING

- Help students to take on another's point of view
- Find the correct thinking in every incorrect answer
- Lean in to the visuals
- Step away from 'answer-getting'

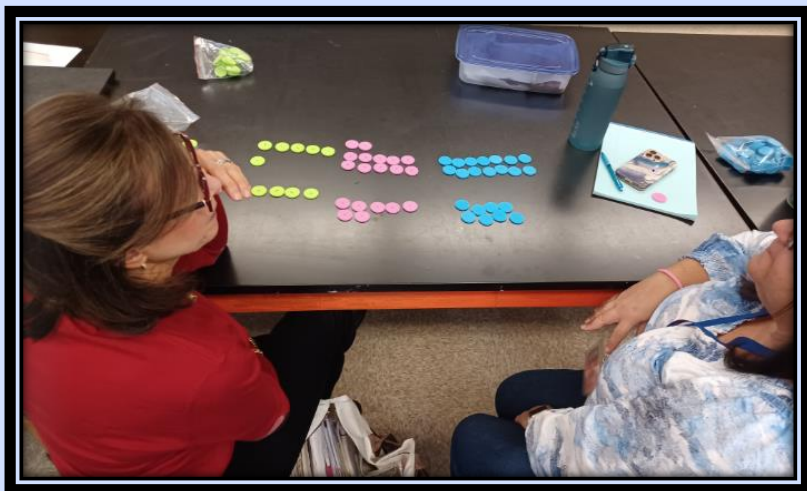
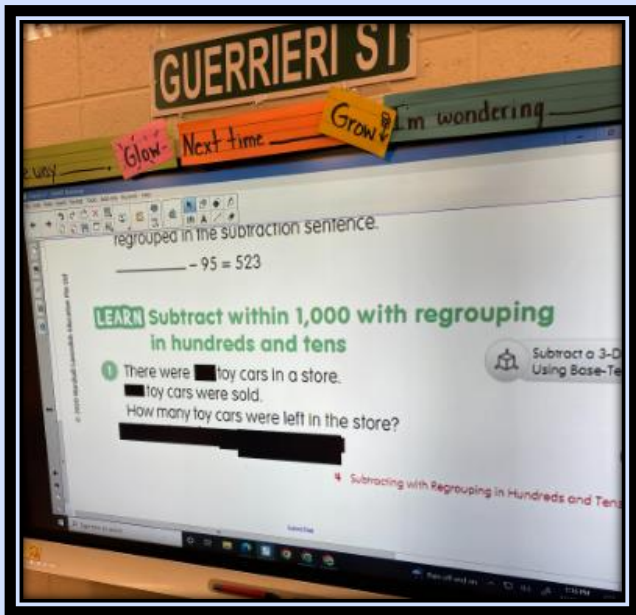
Kevin had  balloons.
He tied them in bundles of 7.
How many bundles did he have?



$\underline{\quad} \div \underline{\quad} = \underline{\quad}$

He had $\underline{\quad}$ bundles.

TEACHERS' WORK TO CULTIVATE MATHEMATICAL THINKING



ENRICHED CURRICULUM

- Critical Thinking
- Low Floor, High Ceiling Tasks
- Interactive & Collaborative
- Non-routine Problem Solving



Name: _____

NUMTANGA

Step-by-step examples at tangmath.com/puzzles

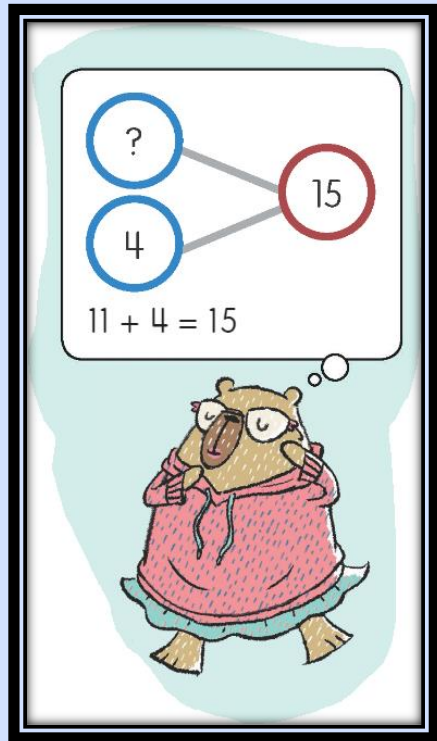
TANGY TUESDAY™		
PACK	LEVEL	WEEK
1	B	1

In each empty box, write the matching value between adjacent cards.

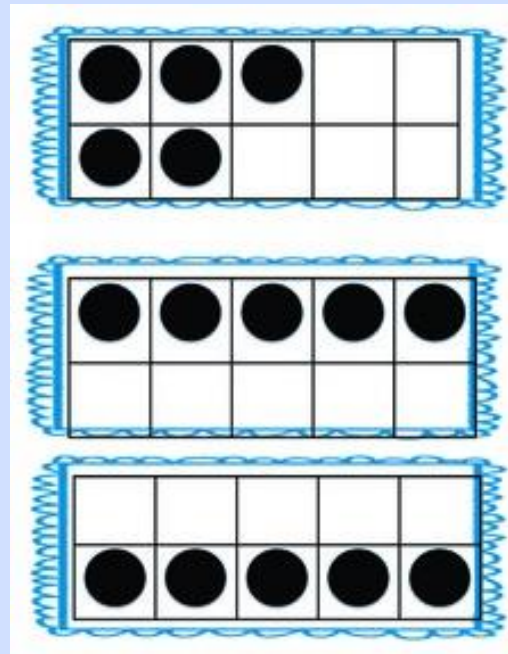
16	10+7		12	10+4		28	10+9
	twenty eight			nineteen			fifteen
17	10+1		21	20+4		14	10+5
	twenty four			twenty nine			sixteen

	+		+		=	27
	+		+		=	36
	+		+		=	40
	+		×		=	?

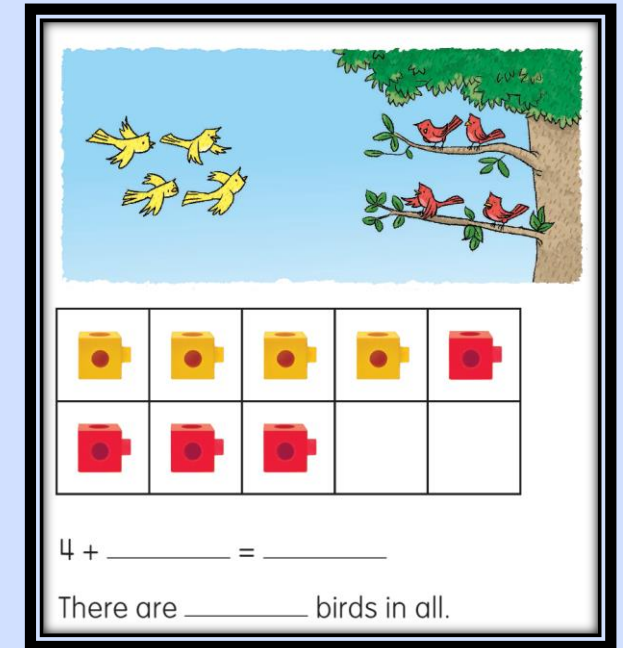
ROLE OF VISUALIZATION IN MATHEMATICS



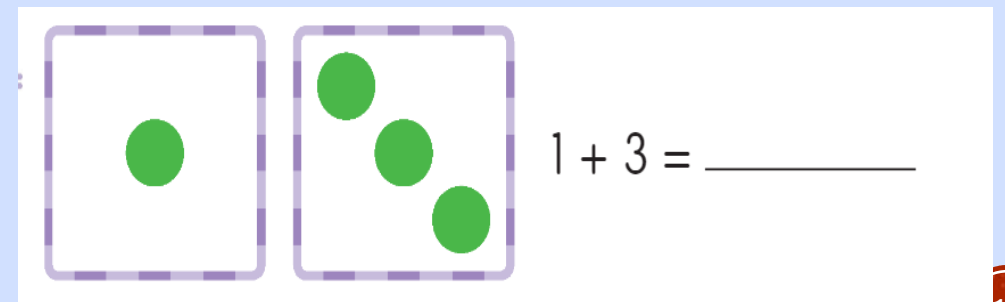
A cartoon bear wearing glasses and a pink sweater is thinking. A thought bubble above it shows a math problem: a circle with a question mark, a circle with the number 4, and a circle with the number 15. Lines connect the question mark and 4 to 15. Below the circles is the equation $11 + 4 = 15$.



Three ten-frames are shown, each with a blue wavy border. The first ten-frame has 3 black dots in the top row and 2 black dots in the bottom row. The second ten-frame has 5 black dots in the top row. The third ten-frame has 5 black dots in the bottom row.

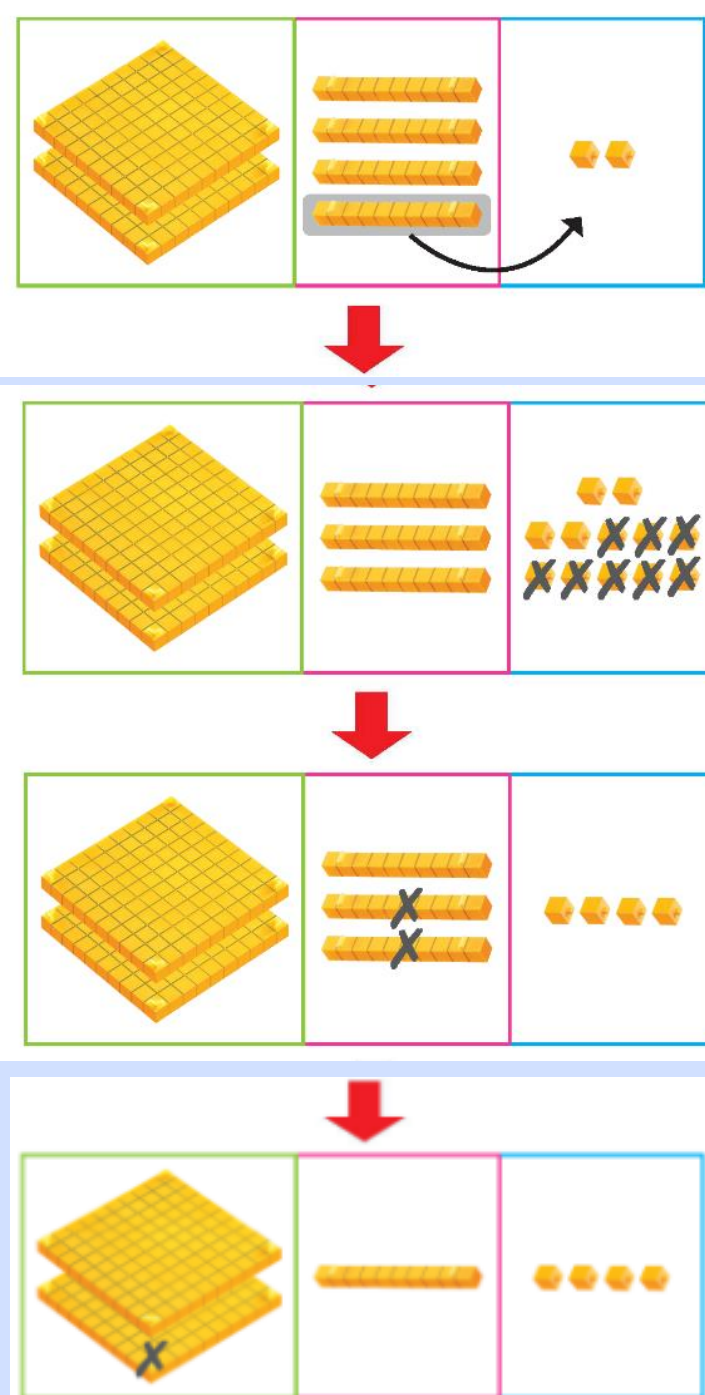


An illustration of a tree with yellow birds flying and red birds on branches. Below it is a 2x5 grid of colored squares: the top row has 4 yellow squares and 1 red square; the bottom row has 3 red squares and 2 empty squares. Below the grid is the equation $4 + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$ and the text "There are _____ birds in all."



Two square boxes with dashed purple borders. The first box contains 1 green dot. The second box contains 3 green dots. To the right is the equation $1 + 3 = \underline{\hspace{1cm}}$.

CONNECTING VISUALS WITH AN ALGORITHM TO SUPPORT DEEP CONCEPTUAL UNDERSTANDING



		3	12
	2	4	8
-	1	2	8
	1	1	4

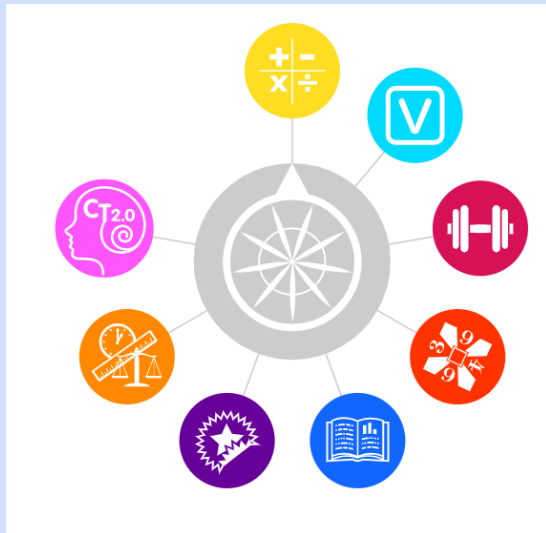
SUPPLEMENTARY K – 6

MATH SOFTWARE

- Reflex
- Frax
- First in Math



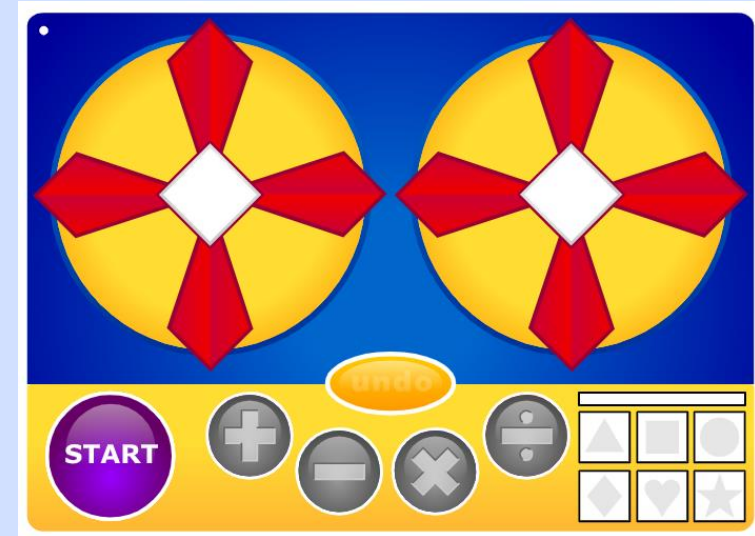
FIRST IN MATH



Martin is making a red, white, and blue friendship bracelet. He needs 85 cm of yarn. He has 21 cm of blue, 23 cm of red. How many centimeters of white does he need?

- 64 cm
- 62 cm
- 44 cm
- 41 cm

Points Earned:
0



SUMMER PROGRAMS

- **Academic Intervention Services for grades K – 6**
- **Partnership with the EOC**



ELEMENTARY ACCELERATED MATH PATHWAYS

What's happening in Grade 5?

- Heterogeneously grouped classes
- Dedicated enrichment time
- Adjusted identification measures
- Supplemental AIS time

What's happening in Grade 6?

- Grade level classes
- Early acceleration class instructed by math specialist
- Supplemental AIS time

IDENTIFICATION TIMELINE

- **Mid-May: CogAT exam for Grade 4 & 5 students**
- **Early June: Secure exam (On-Demand Mathematical Tasks) for invited students**
- **Mid-June: Committee meets to review secure exam results, teacher feedback, and student work samples**
- **Early July: Notification about acceptance to accelerated math pathway**

AFTER-SCHOOL ELEMENTARY ENRICHMENT PROGRAM

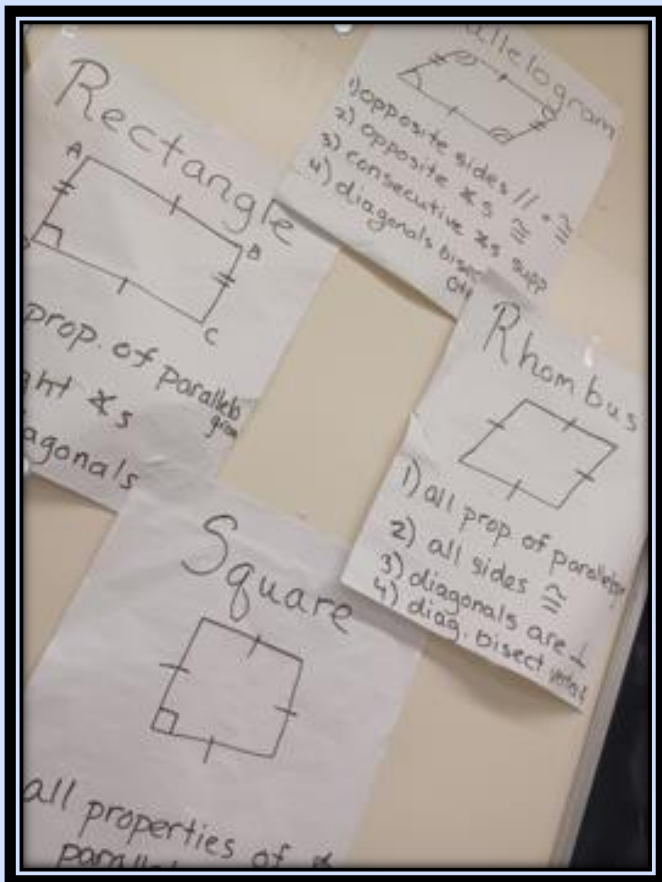
- **Shifted from criteria-based admission to interest-based selection**
- **Located at student's home building**
- **All interested students accommodated**

EXTRACURRICULAR OFFERINGS

**Elementary
Math
Olympiads**

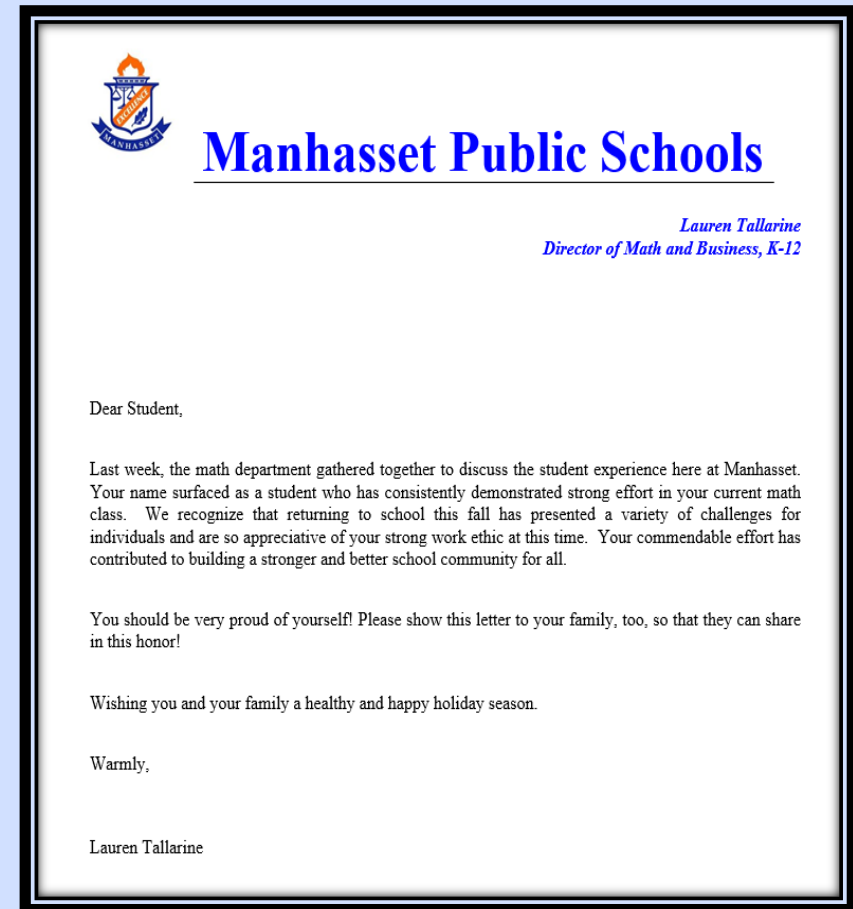


SECONDARY INSTRUCTIONAL PROGRAM HIGHLIGHTS



RECOGNITION LETTERS FOR SECONDARY SCHOOL STUDENTS

- Each teacher identified 5 – 10 students who demonstrated strong work ethic, character, and/or effort
- Students received a letter mailed to their home



DEPARTMENTAL CONNECTIONS

- Maintaining a cohesive department
- Connecting teachers
- Honoring Traditions



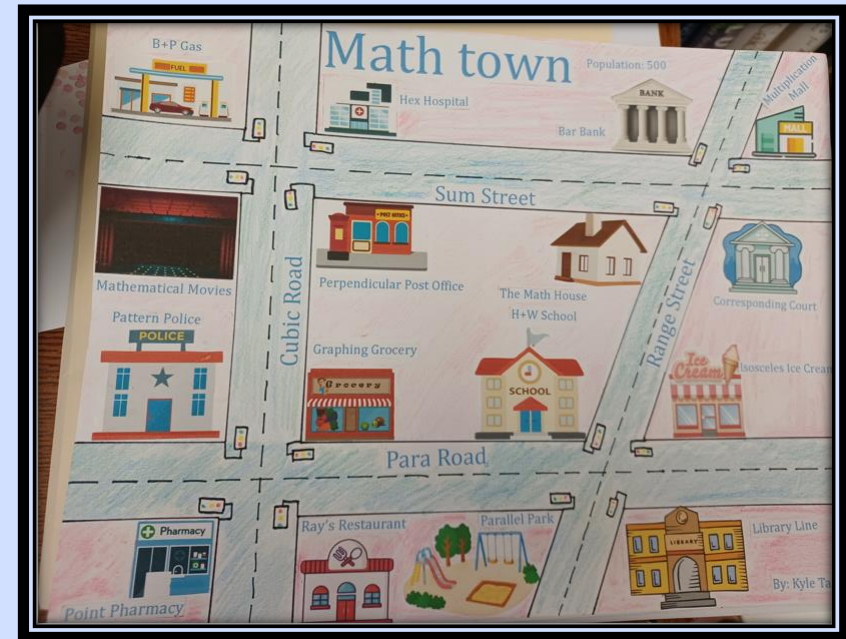
TEACHER COLLABORATION

- Formal & informal professional development
- Time and people are our most precious resources



SECONDARY SCHOOL COURSE OFFERINGS

- 5 Advanced Placement Course Offerings
- Additional on-ramps for advanced course access
- Various support classes for 7th grade through Calculus
- Integrated Co-teaching classes through Algebra 2
- Applied Geometry and Intermediate Algebra courses



COMPUTER SCIENCE PATHWAY

- Introduction to Computer Programming
- Advanced Placement Computer Science A
- Advanced Placement Computer Science Principles



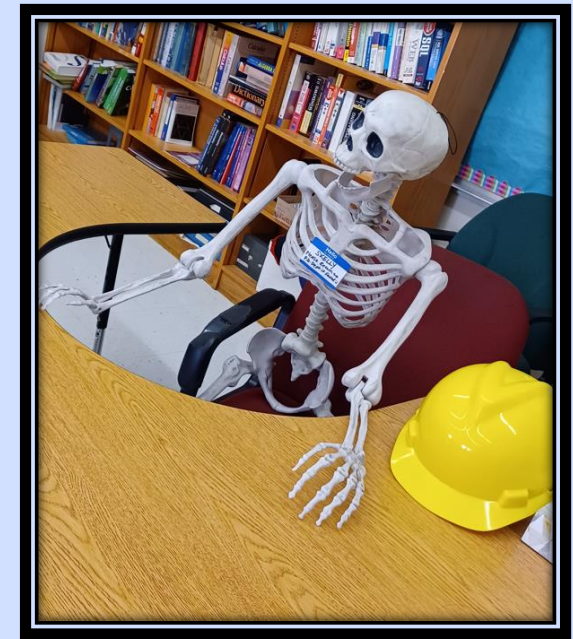
BUSINESS DEPARTMENT PATHWAY

- Introduction to Business
- Business Marketing
- Applied Business Law
- Accounting



MATH LAB

- Staffed from 7:30 – 3:08
- TA-staffed
- New gamefied vibe



EXTRACURRICULAR OFFERINGS

- Middle School and High School Mathletes
- Business Marketing Club
- American Mathematics Competition
- Math Honor Society



EXTRACURRICULAR OFFERINGS, CONT'D.



HIGHLIGHTS...



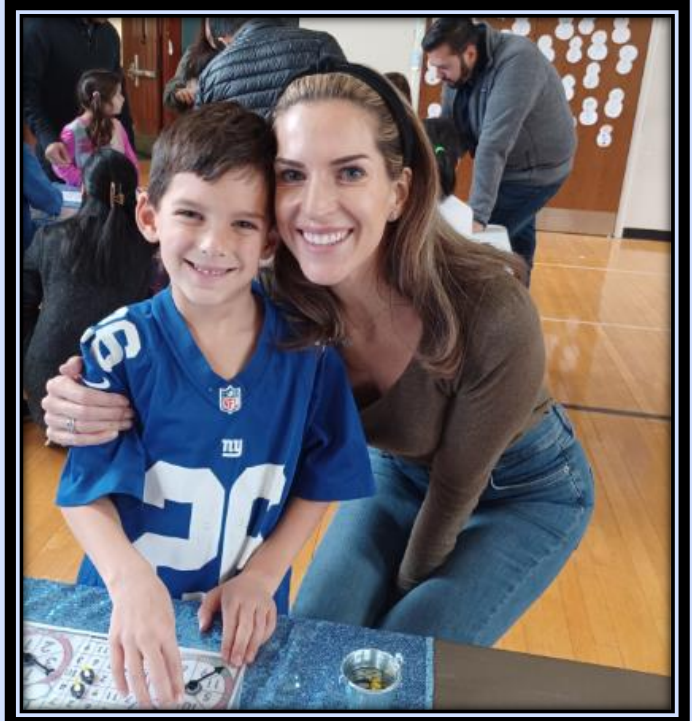
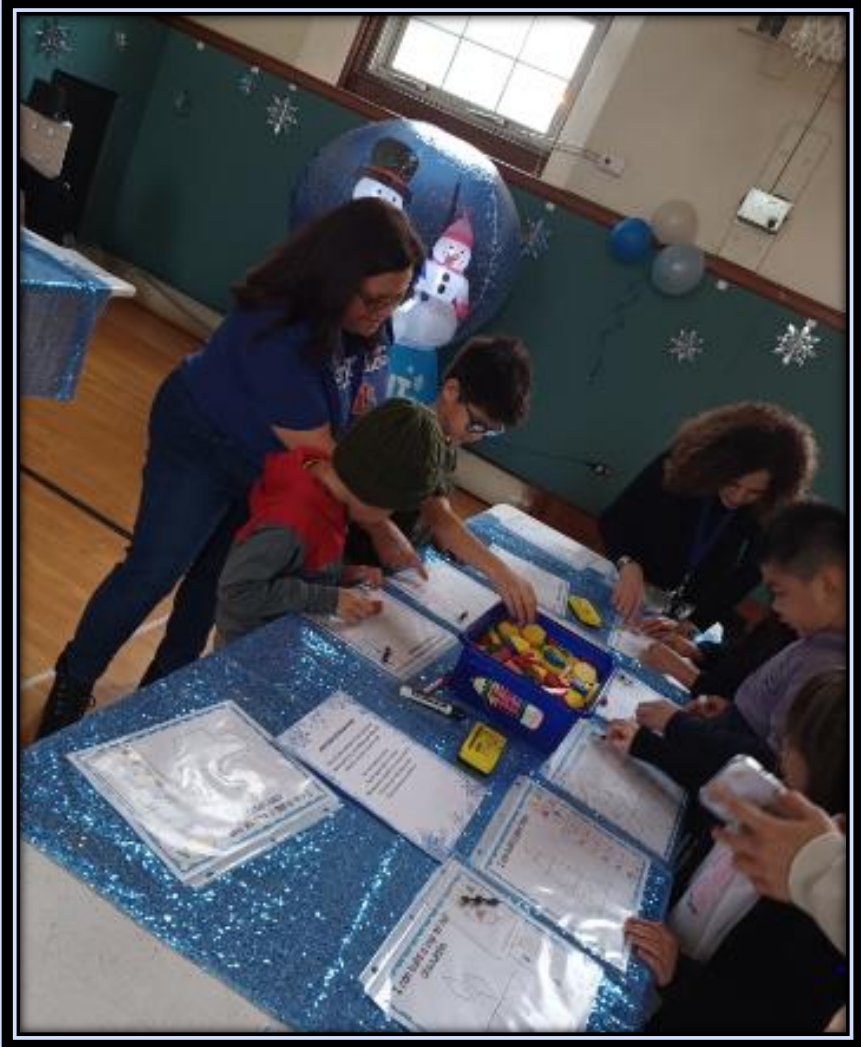
Lower Division: In the top 10 out of about 50 teams
Upper Division: In the top 10 out of about 50 teams

HIGHLIGHTS...



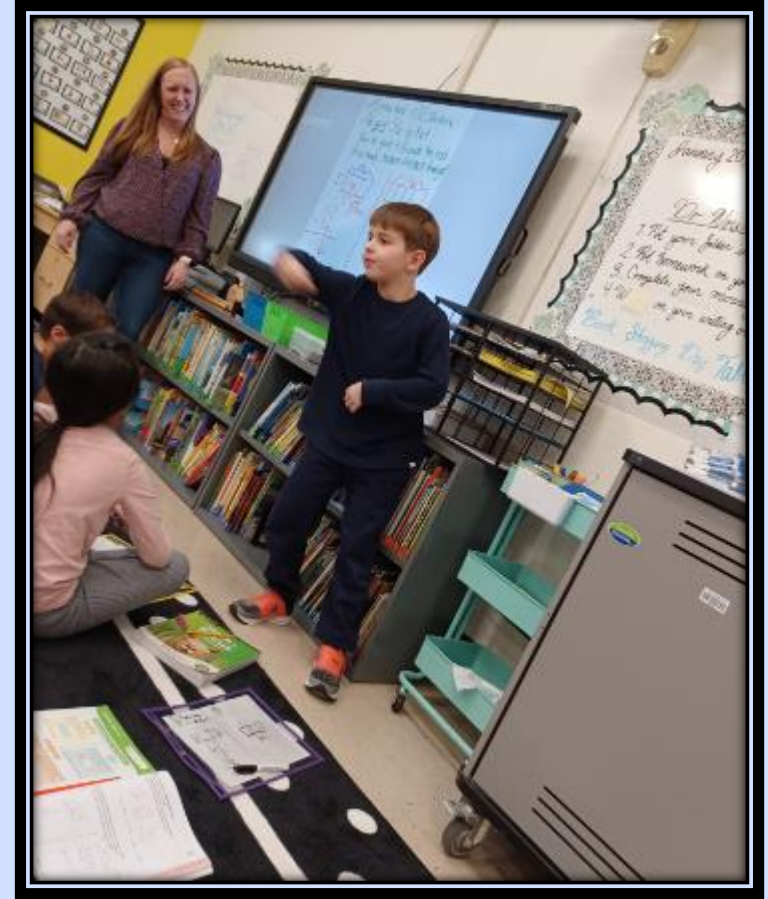
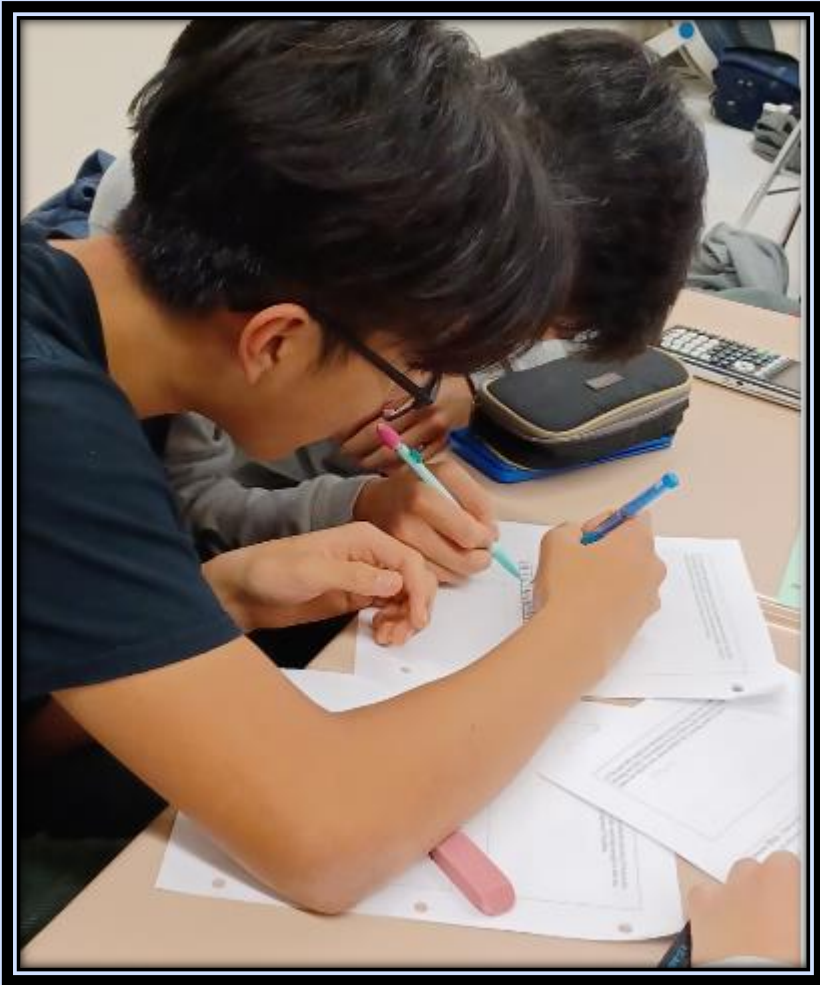
HIGHLIGHTS...



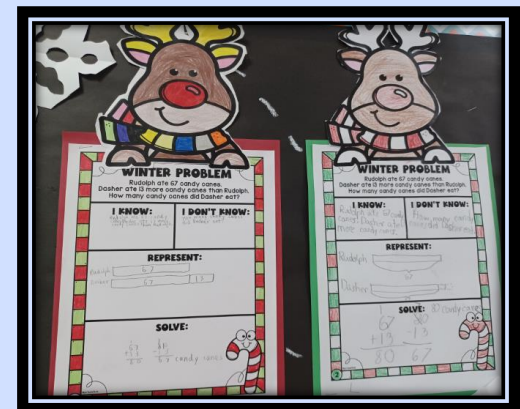
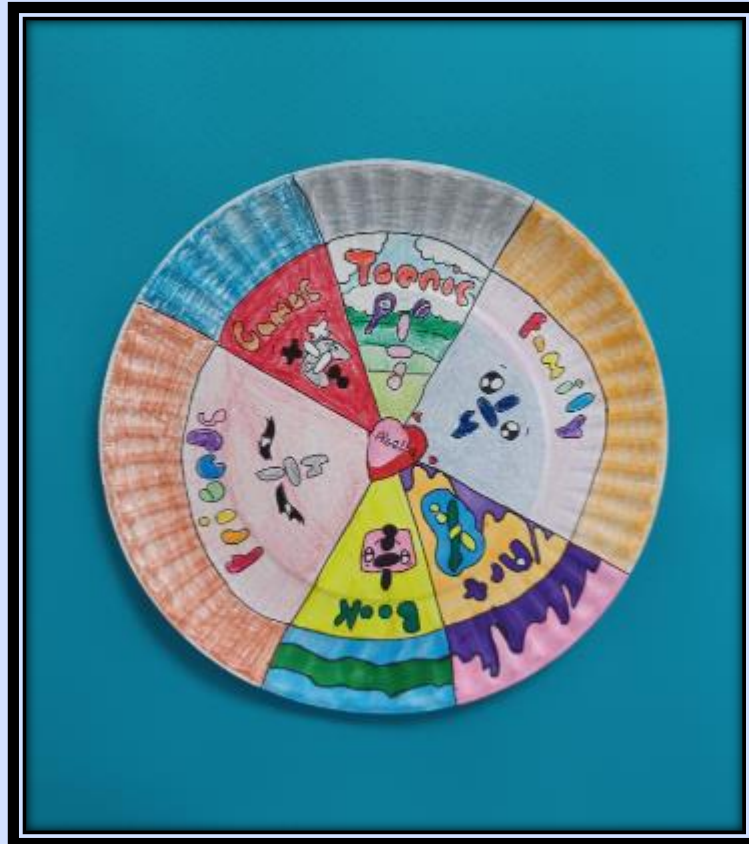
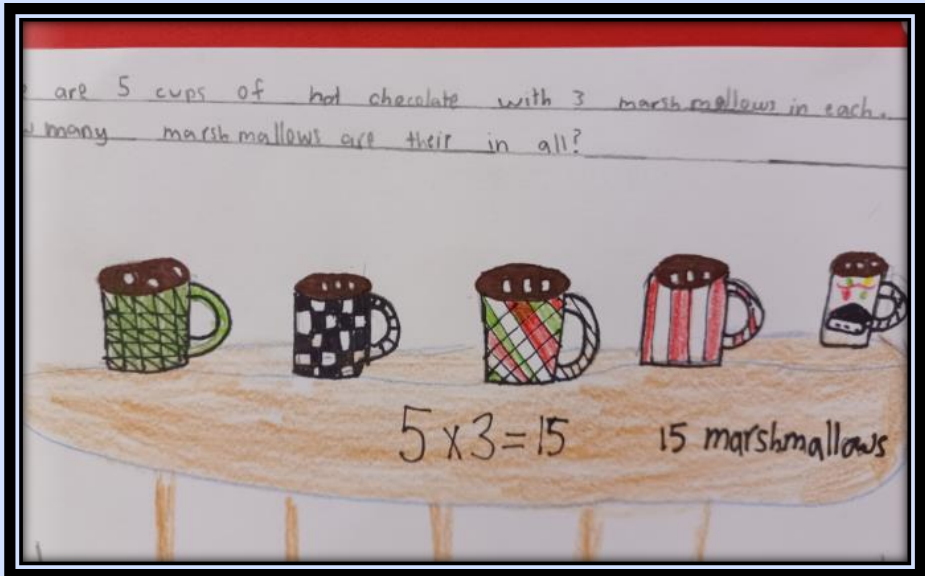
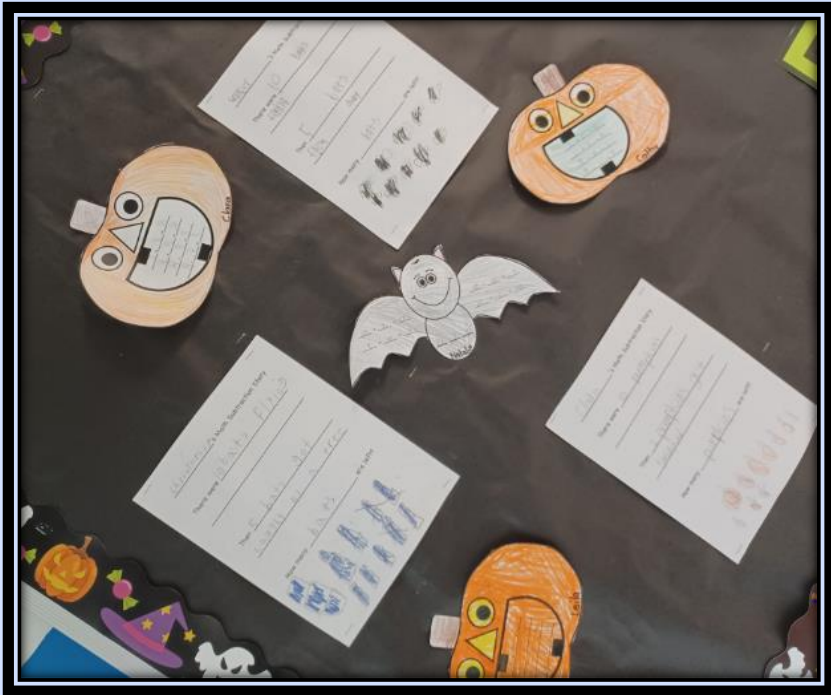




MORE HIGHLIGHTS...



MORE HIGHLIGHTS...



THANK YOU FOR YOUR ONGOING SUPPORT!

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