

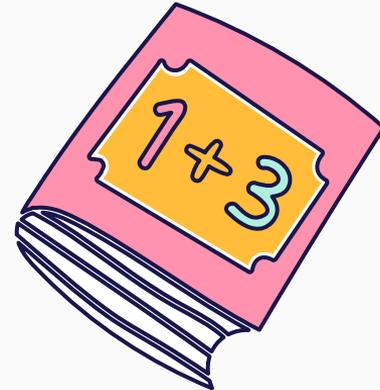
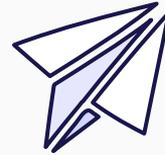
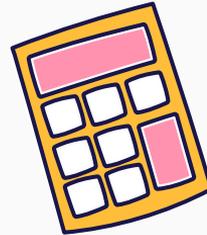
BUILDING MATH CONFIDENCE TOGETHER

Roxbury Public Schools
Parent Math Night

Crystal Nzegwu
P-6 Supervisor of Math and Applied Sciences

$2 + 2$

K-6 Math





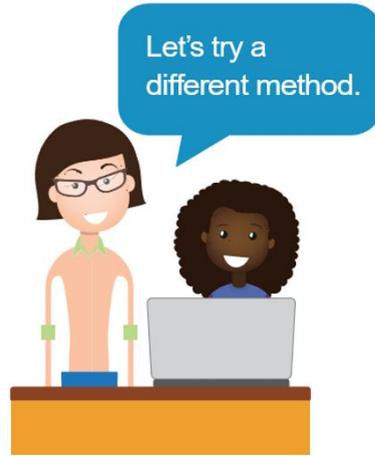
Children who believe they can be successful in math are more willing to put in effort, even when they struggle, and this results in better performance.

Students who complete higher level math in high school are more likely to enroll in college.

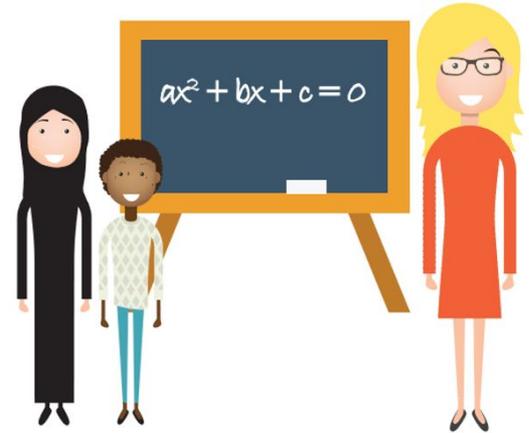
The math courses students take in high school are related to their earnings ten years later.



praising effort and modeling positive math attitudes.



encouraging children to seek help and try new strategies when they are stuck.



confronting stereotypes about who is good at math.

What are Math Standard Domains?

- **Math Standard Domains:** Broad categories of math skills that students learn throughout their education.
 - These domains build on each other as students move from one grade to the next.
 - Think of domains as **math “big ideas”** that students explore at deeper levels each year.

The Major Math Domains (K-5)

- **Counting & Cardinality (K):** Learning to count, compare numbers, and understand how numbers represent quantity.
- **Operations & Algebraic Thinking (K – 5):** Understanding addition, subtraction, multiplication, and division and how numbers work together in patterns.
- **Number & Operations in Base Ten (K – 5):** Developing place value understanding and working with larger numbers.
- **Number & Operations – Fractions (Grades 3 – 5):** Learning about fractions and their relationships.
- **Measurement (K – 5):** Measuring length, weight, volume, time, and representing data using charts and graphs.
- **Data Literacy (K – 5)** → Reading and interpreting graphs, tables, and data sets; understanding probability.
- **Geometry (K – 5):** Identifying and working with shapes, angles, symmetry, and spatial reasoning.

Advanced Math Domains (6th Grade)

- **Ratios & Proportional Relationships (6th Grade)** → Understanding ratios, rates, and percentages in real-world contexts.
- **The Number System (6th Grade)** → Extending number knowledge to include negative numbers, absolute value, and division of fractions.
- **Expressions & Equations (6th Grade)** → Introducing algebraic expressions, equations, and inequalities.
- **Geometry (6th Grade)** → Working with area, surface area, and volume of 3D shapes.
- **Statistics & Probability (6th Grade)** → Deepening data analysis skills and exploring probability concepts.

Standards for Mathematical Practice

1. Make sense of problems and persevere in solving them.

2. Reason abstractly and quantitatively.

3. Construct viable arguments and critique the reasoning of others.

4. Model with mathematics.

5. Use appropriate tools strategically.

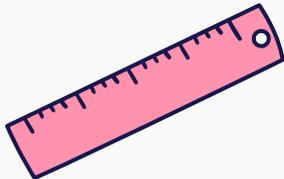
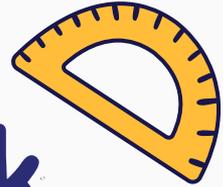
6. Attend to precision.

7. Look for and make use of structure.

8. Look for and express regularity in repeated reasoning.



Let's Rethink How We Talk To Our Children About Math



Instead of saying...

I'm not good at math either.



Why are you solving the problem like that? That's not how I learned.



What are all these words I have never heard of? Array? Tape diagram? ...



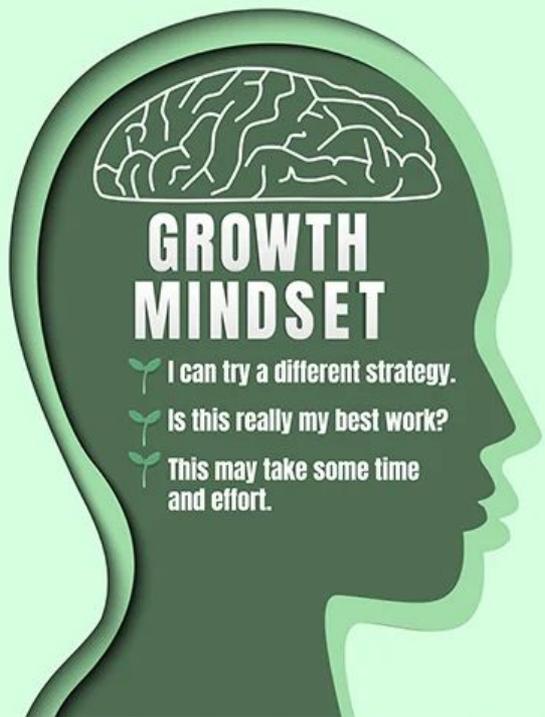
Let's try saying...

Math can be challenging but if you keep working at it, it will start to make more and more sense.

What do you call this? Oh, an area model? How does that help you understand multiplication? Can you teach me this strategy?

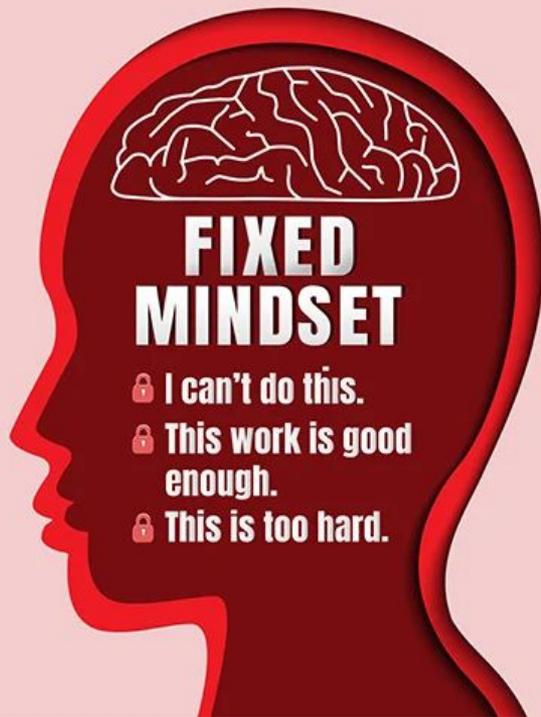
Can you explain to me what a tape diagram is? How did it help you solve this problem?





GROWTH MINDSET

-  I can try a different strategy.
-  Is this really my best work?
-  This may take some time and effort.



FIXED MINDSET

-  I can't do this.
-  This work is good enough.
-  This is too hard.

Encourage & praise effort and learning!

Not everyone is a math person. You're so good at other subjects.



You can do it! Let's try another strategy.

You got a higher grade on this assignment. You must be really smart.

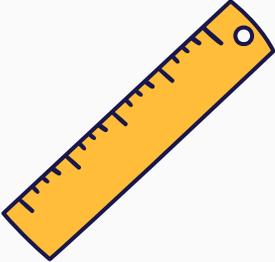


You got a higher grade on this assignment. You must have worked really hard.



**Capitalize
on the Power
of "YET".**





**BUILDING NUMBER
SENSE THROUGH
EVERYDAY MATH
OPPORTUNITIES**



$2+2$

Cooking & Baking Grades K-2

Opportunities

Counting & One-to-One Correspondence – Have children count ingredients (e.g., “Can you put 10 blueberries in the bowl?”).

- **Measuring & Comparing** – Let kids help measure flour, sugar, or milk while discussing **more, less, or equal**.
- **Simple Fractions** – Show how half a cup is smaller than a whole cup. Cut food into halves and quarters.
- **Sequencing & Following Directions** – Ask kids to put steps in order (e.g., “What comes after cracking the eggs?”).
- **Sorting & Categorizing** – Sort ingredients by color, size, or shape (e.g., “Let’s separate the big and small pasta shells!”).
- **Patterns & Repeating Sequences** – Arrange toppings in a pattern (e.g., cheese-pepperoni-cheese on a pizza).
- **Estimating** – Estimate how many cookies will fit on a tray before placing them.

Cooking & Baking Grades 3-6

Opportunities

- **Fractions & Multiplication** – Adjust recipes by **doubling, halving, or tripling** ingredients.
- **Conversions & Measurement** – Convert between cups, tablespoons, and teaspoons. Discuss metric vs. customary units.
- **Ratios & Proportions** – Discuss ingredient ratios (e.g., “For every 2 cups of flour, we need 1 cup of sugar”).
- **Elapsed Time** – Ask kids to figure out when food will be ready based on cooking times.
- **Division & Equal Sharing** – Have kids divide cookies or pizza slices equally among family members.
- **Budgeting & Cost Analysis** – Compare grocery store prices for ingredients or calculate the cost per serving of a meal.

Shopping – Grades K-2 Opportunities

- **Counting & One-to-One Correspondence** – Have kids count items as they place them in the cart (e.g., “We need 6 apples—help me count them!”).
- **Recognizing Numbers & Prices** – Point out price tags and ask kids to read the numbers.
- **Comparing & Estimating** – Compare package sizes (e.g., “Which box of cereal is bigger?”) or estimate how many items will fit in a bag.
- **Sorting & Classifying** – Group items by category (fruits, vegetables, dairy) or shape (round, rectangular).
- **Identifying Shapes & Patterns** – Look for geometric shapes in packaging and store signs.
- **Following a Budget** – Give kids a small amount to spend and help them choose items within their limit.
- **Simple Addition & Subtraction** – Ask kids to add prices of two items or figure out how much more they need to reach a certain amount.

Shopping – Grades 3–6 Opportunities

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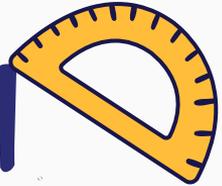
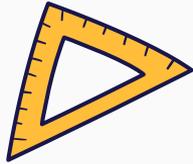
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3 ✓

- **Rounding & Estimation** – Estimate the total cost before reaching checkout.
- **Multiplication & Unit Prices** – Compare unit prices (e.g., “Which is a better deal: 3 for \$5 or \$1.75 each?”).
- **Percentage & Discounts** – Ask kids to calculate savings on sales (e.g., “This is 20% off—how much do we save?”).
- **Weight & Measurement** – Weigh produce and discuss how weight affects price.
- **Budgeting & Making Change** – Give kids a set amount to spend and let them track their total while shopping.
- **Comparing & Decision-Making** – Discuss price vs. quantity trade-offs (e.g., “Is it cheaper to buy the big pack or two smaller ones?”).

On-the-Spot Conversations

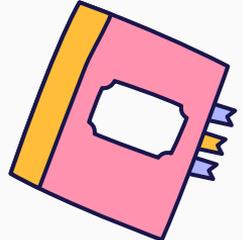


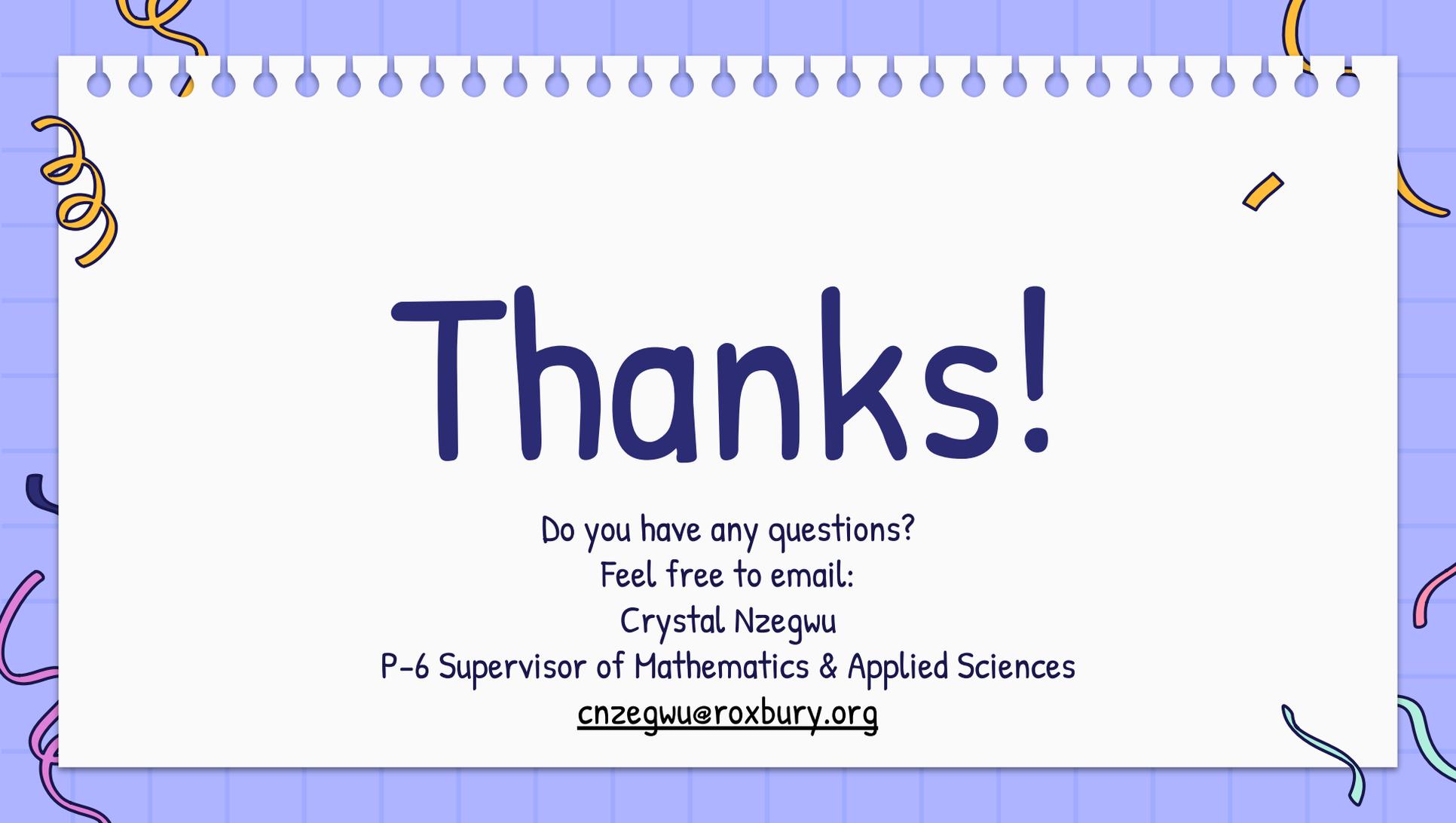


Let's Explore!



12 low-prep games that you can play at home with your child to build number sense!





Thanks!

Do you have any questions?

Feel free to email:

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