Creating a Math Rich Classroom Environment

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http://bit.ly/mathrichenvironment

Goals for Today

- Define Math Rich environment
- Explore components of a Math Rich environment
- Think about ways to extend this new learning to your classroom

The only way to learn mathematics is to do mathematics

Physical Environment

Take a minute to jot down some words that come to mind when you think about your **physical** classroom environment.

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Physical Environment

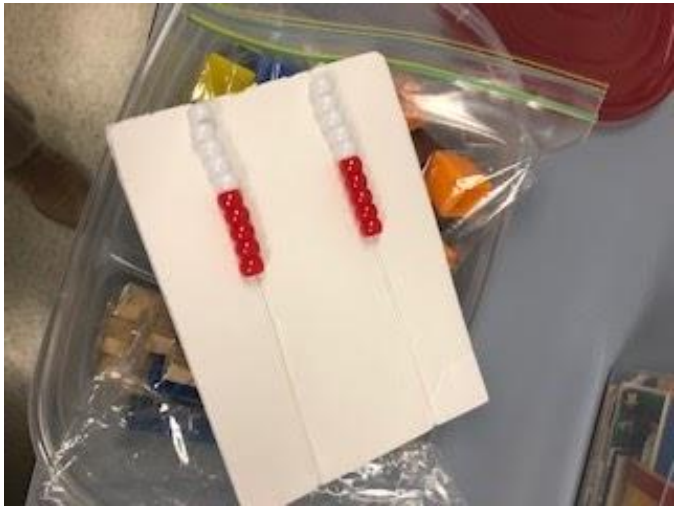
- What does your **space** look like?
- How are your **desks/tables arranged**?
- Where are your math **tools/manipulatives**?
- Do you have math **concept anchor charts** or a **word wall**?

Using Manipulatives

- Central location
- Accessible
- Clearly labeled
- Individual student tool boxes

Student Tool Kits（K-2）

- Unifix cubes
- Rekenrek
- 5, 10, & 20 frames
- Number path/line
- Dice
- 0-9 digit cards
- Red/Yellow counters
- Base Ten blocks



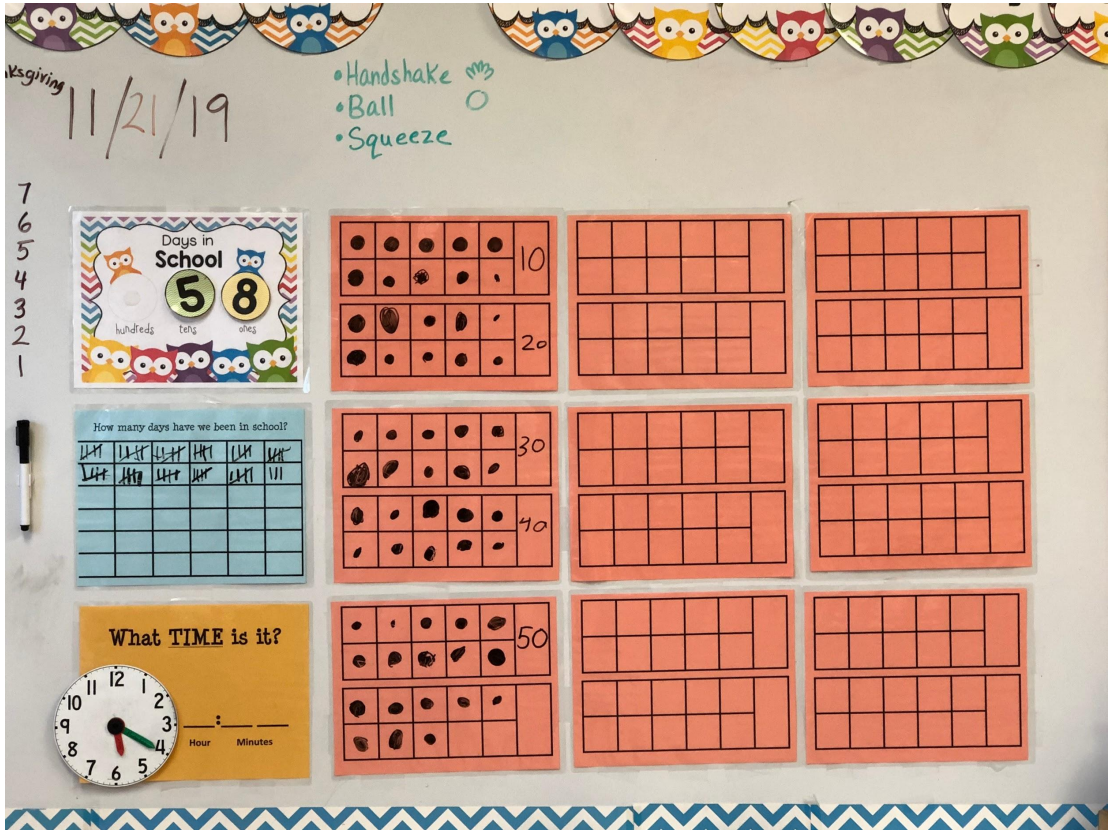
Student Tool Kits (3-6)

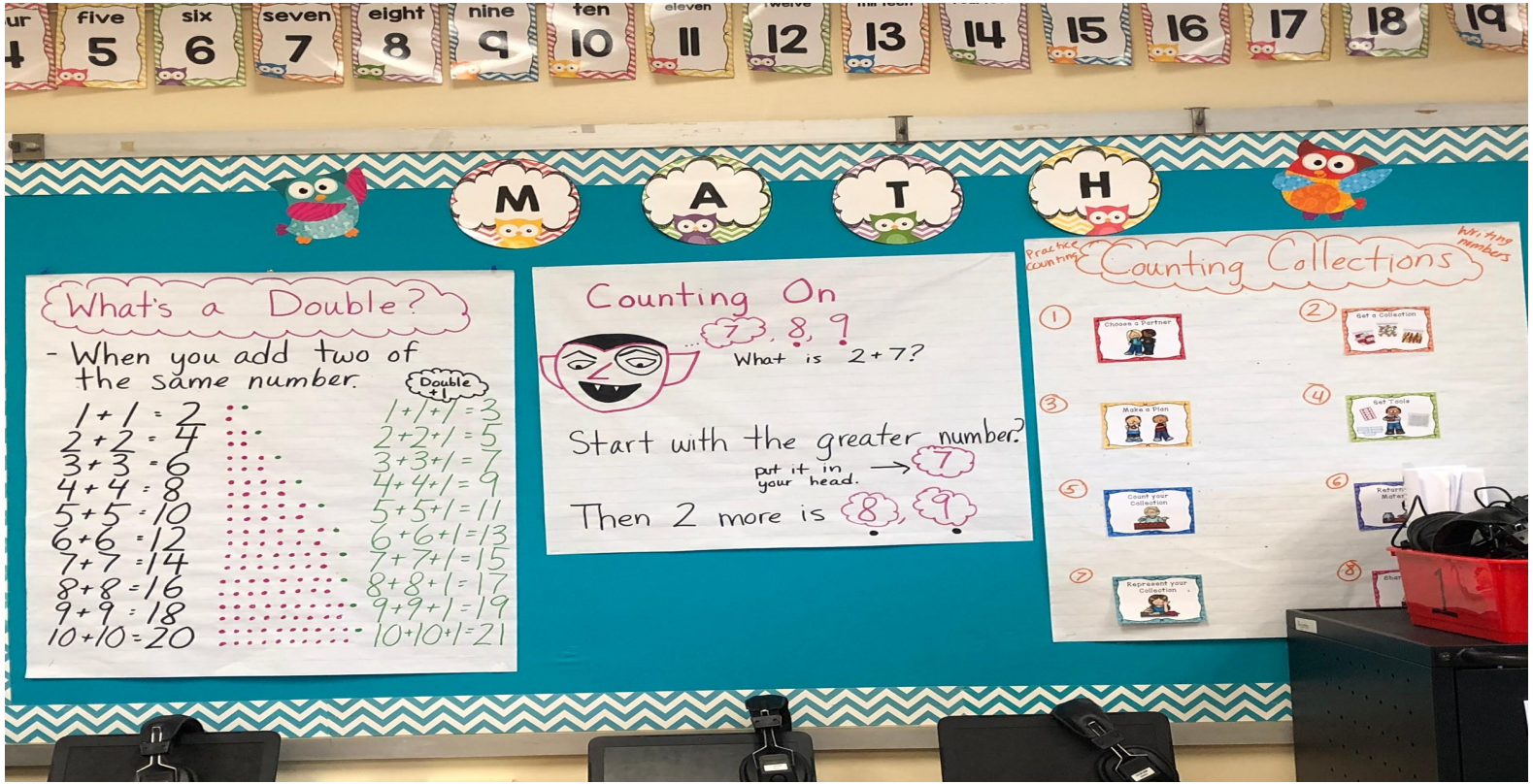
- Colored tiles
- Dice
- Open number line
- Set of base ten blocks
- Fraction bars
- 1000 chart
- Plastic chips

Math Meeting Area

Number of the day represented in a variety of ways

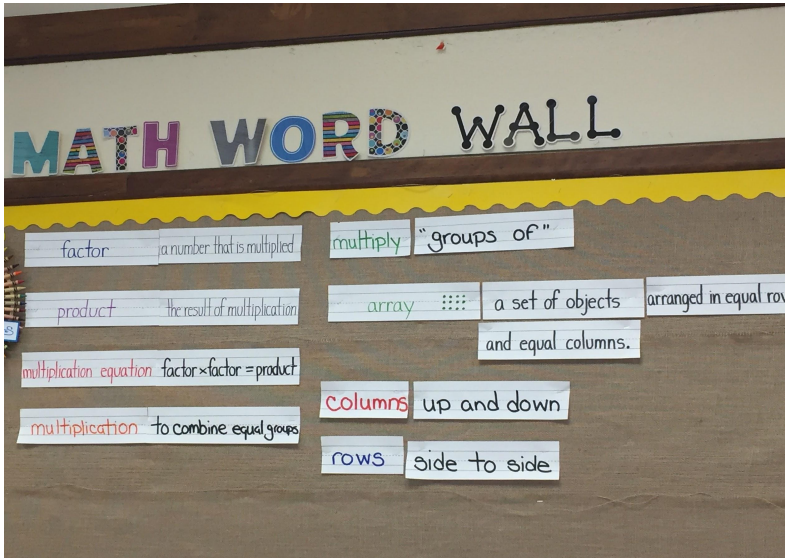
- Tally marks
- Ten frames
- Standard form
- Expanded form

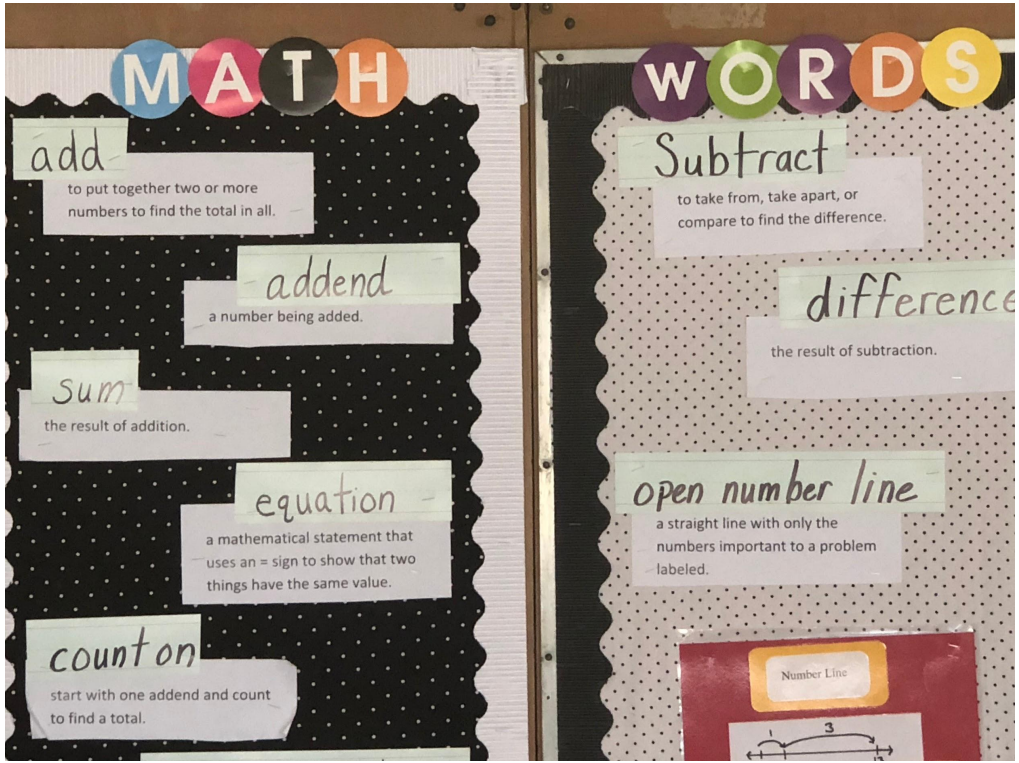




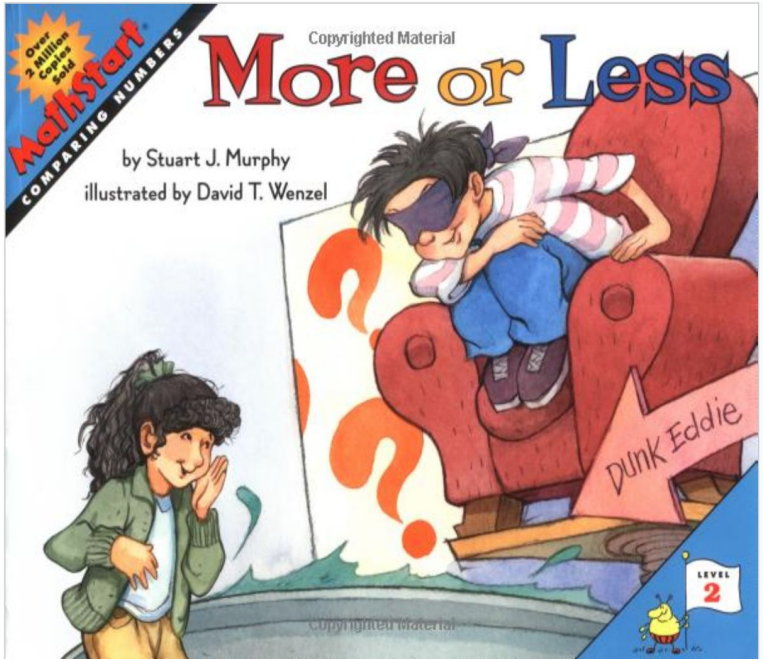
Anchor Chart Resource Wall

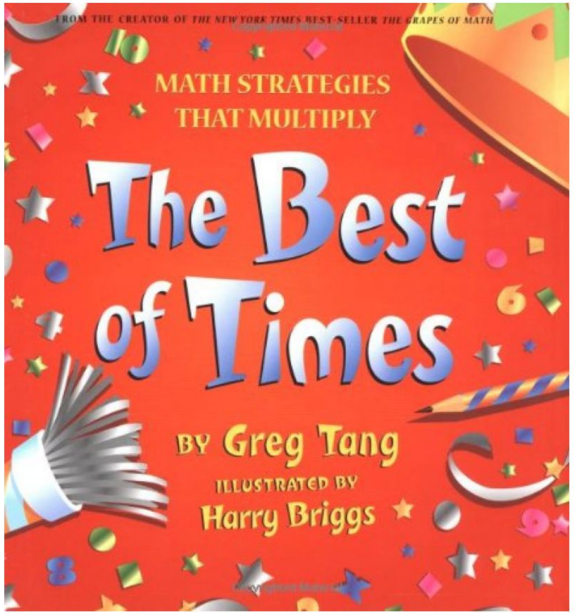
Fostering Mathematical Literacy

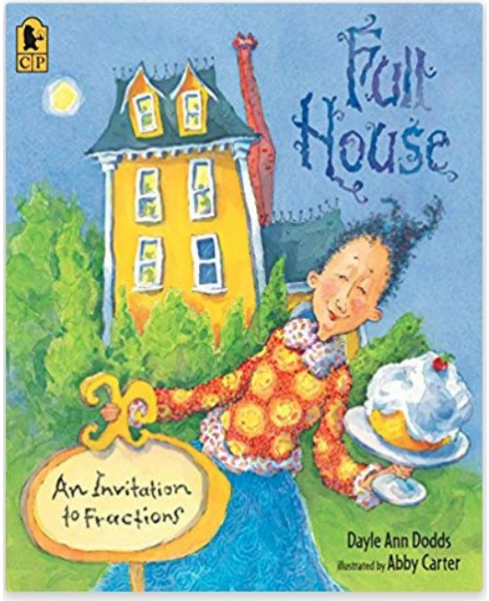




Read alouds launch topics and engage students.







Social Environment

Take a minute to jot down some words that come to mind when you think about your classroom **social** environment.

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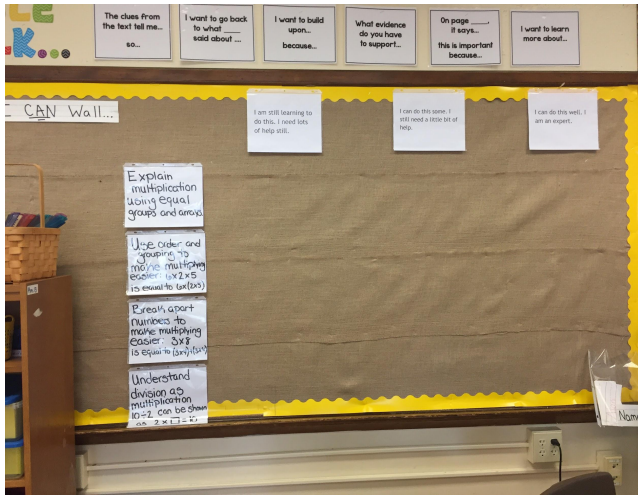
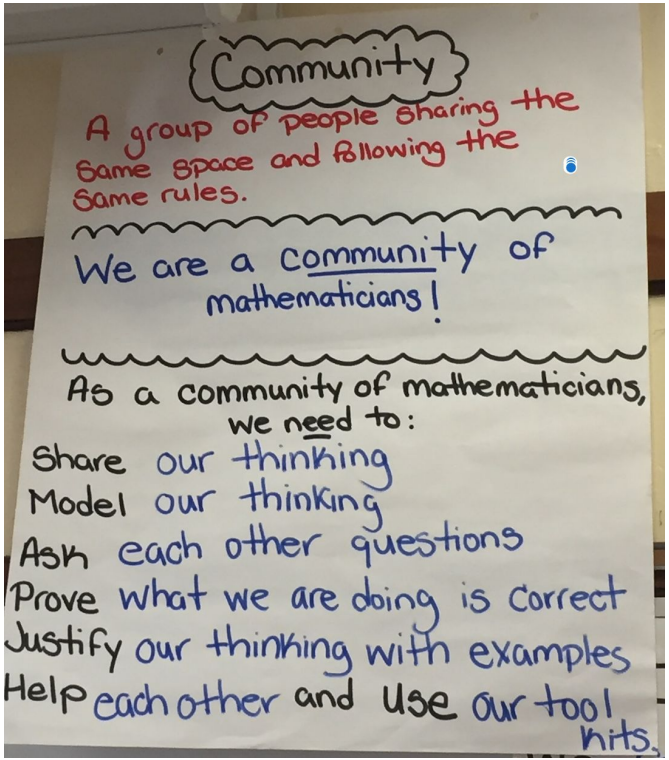
Community of Mathematicians





Creating a Positive Classroom Climate

Teacher Role:

- Motivate students
- Foster mutual respect
- Manage classroom routines
- Set standards for appropriate behavior
- Create an environment that values student work & ideas

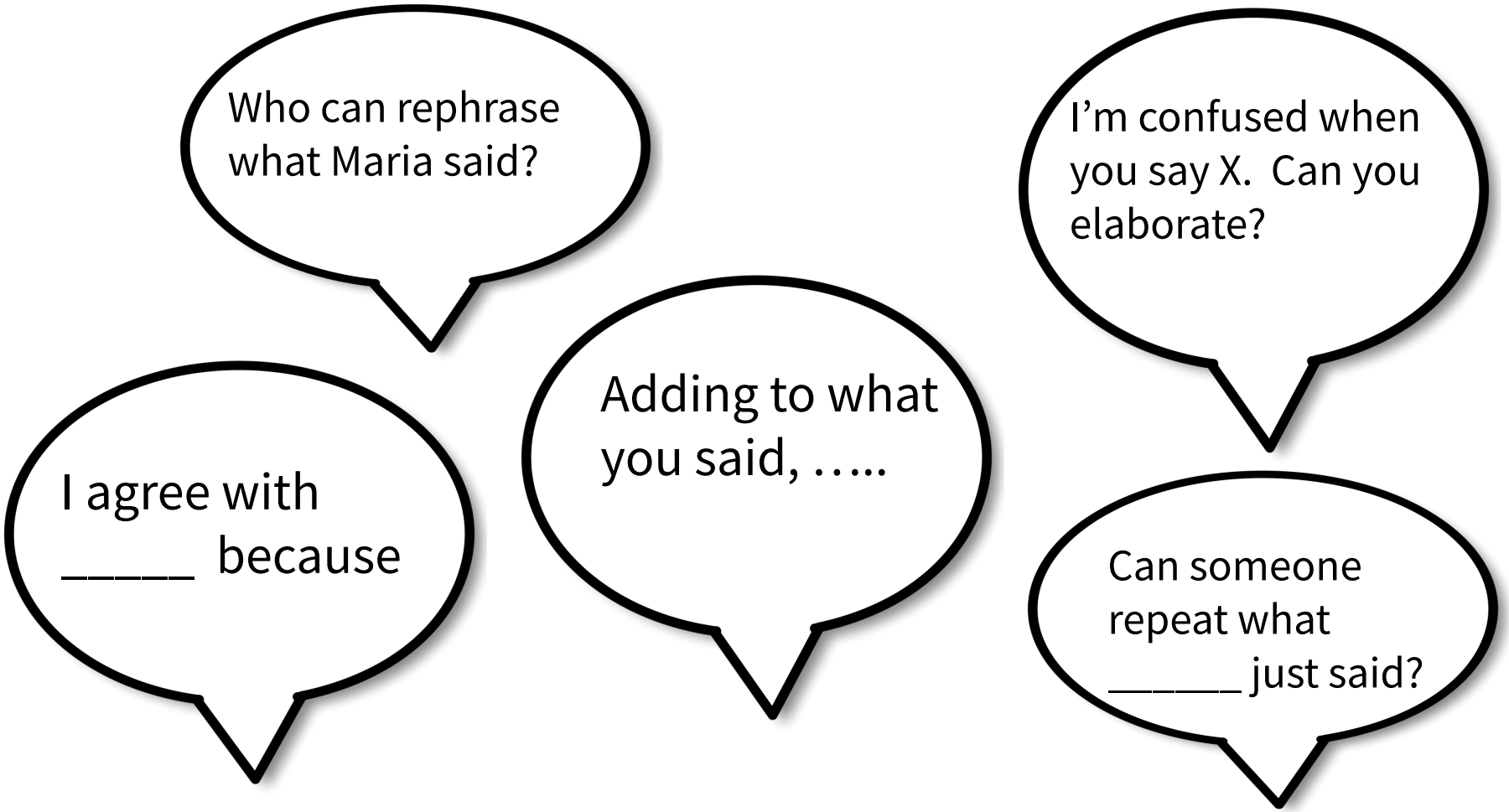
Creating a Positive Classroom Climate

Students role:

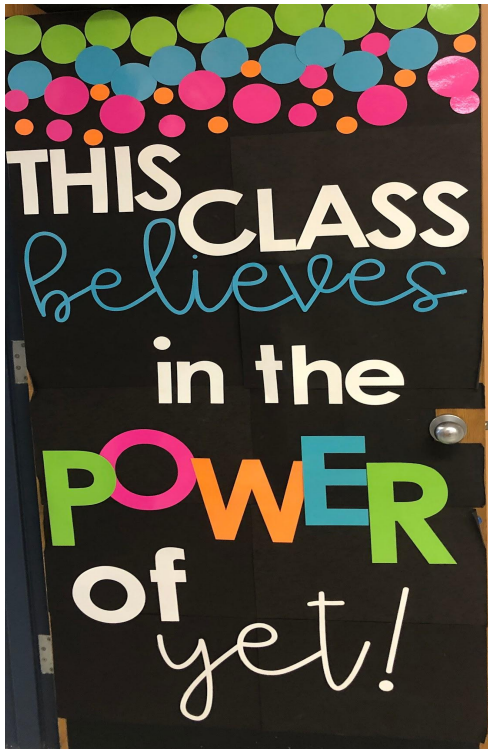
- Actively participating
- Accept responsibility for learning
- Collaborating in groups
- Exhibit confidence
- Take risks
- Choose tools and solution paths

Accountable Talk: "The person who does the talking does the learning."

Through various activities in the beginning of the year, teachers explicitly teach **norms for accountable talk**, practice **sentence starters & stems** and set expectations for **partner & group discussions**.


Who can rephrase what Maria said?
I agree with _____ because
Adding to what you said, …..
I’m confused when you say X. Can you elaborate?
Can someone repeat what _____ just said?

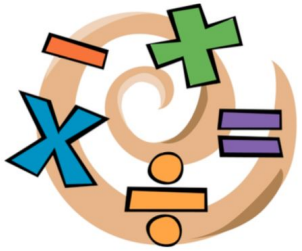
Promoting a Growth Mindset



Growth Mindset Messages

- Students learn more with hard work & perseverance
- Everyone can learn math to high levels
- Mistakes are valuable
- Questions are very important
- Math - creativity & making sense
- Math - connections & communicating
- Mathematical thinking is about depth & not speed

Tasks & Games

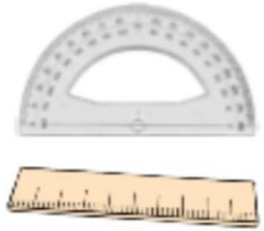


Math Practices

PRECISION

Good mathematicians…

1. make sense of problems and keep trying even when problems are challenging.
2. use numbers to describe situations.
3. justify their strategies and listen to see if other people's ideas are logical.
4. make models of situations
5. use a variety of mathematical tools.

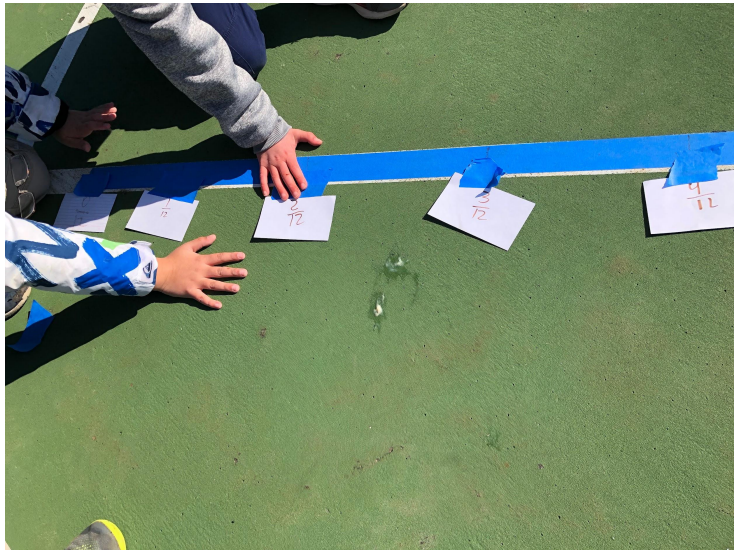


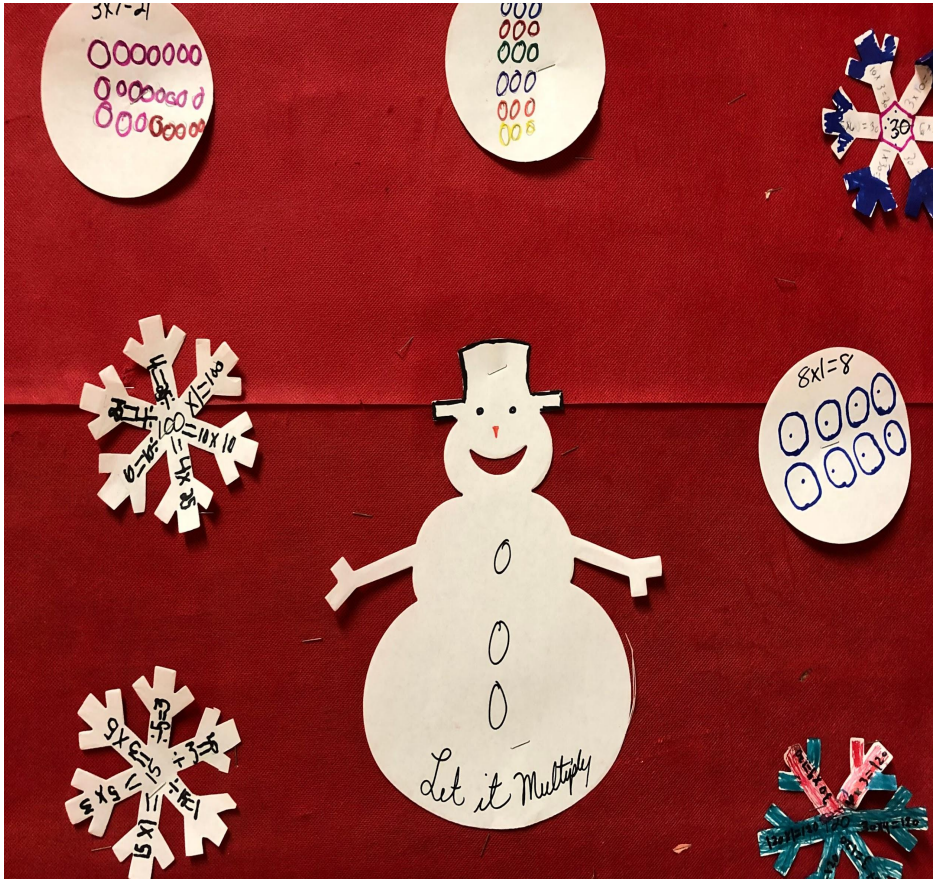
6. try to be accurate and revise their thinking when they make an error.
7. use the structure of a problem to help them find answers.
8. look for and use patterns.

EFFICIENT

Beyond the Classroom

Extend student learning outside of the classroom




Let it Multiply

Questions - Final Thoughts

Thanks for coming!

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