

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.

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?**



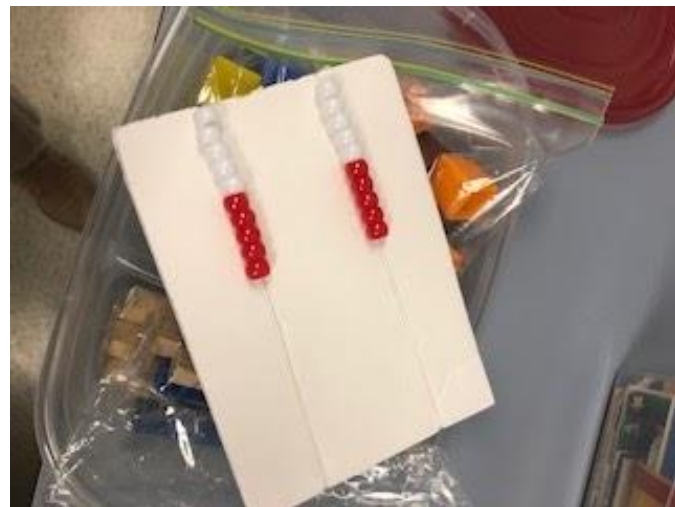
Using Manipulatives



- Central location
 - Accessible
 - Clearly labeled
 - Individual student tool boxes
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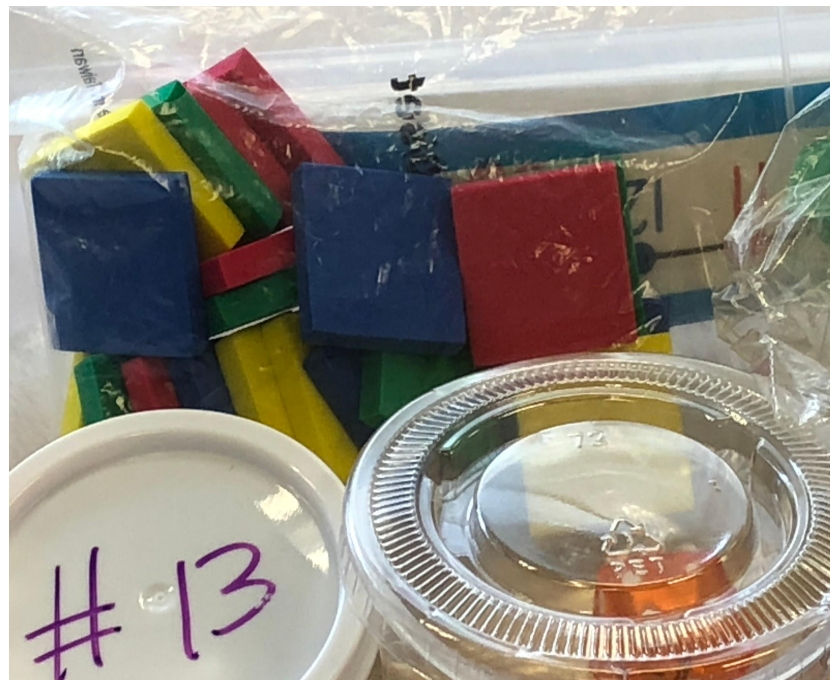
Student Tool Kits (K-2)

- 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

Thanksgiving 11/21/19

- Handshake
- Ball
- Squeeze

7
6
5
4
3
2
1

Days in School

5 8

hundreds tens ones

How many days have we been in school?

What TIME is it?

Hour Minutes

10
20
30
40
50











four 5 six seven eight nine ten eleven twelve thirteen fourteen fifteen sixteen seventeen eighteen nineteen

M A T H

What's a Double?

- When you add two of the same number.

Double

$1+1=2$		$1+1+1=3$
$2+2=4$		$2+2+1=5$
$3+3=6$		$3+3+1=7$
$4+4=8$		$4+4+1=9$
$5+5=10$		$5+5+1=11$
$6+6=12$		$6+6+1=13$
$7+7=14$		$7+7+1=15$
$8+8=16$		$8+8+1=17$
$9+9=18$		$9+9+1=19$
$10+10=20$		$10+10+1=21$

Counting On

7, 8, 9

What is $2+7$?

Start with the greater number.
put it in your head. → 7

Then 2 more is 8, 9

Counting Collections

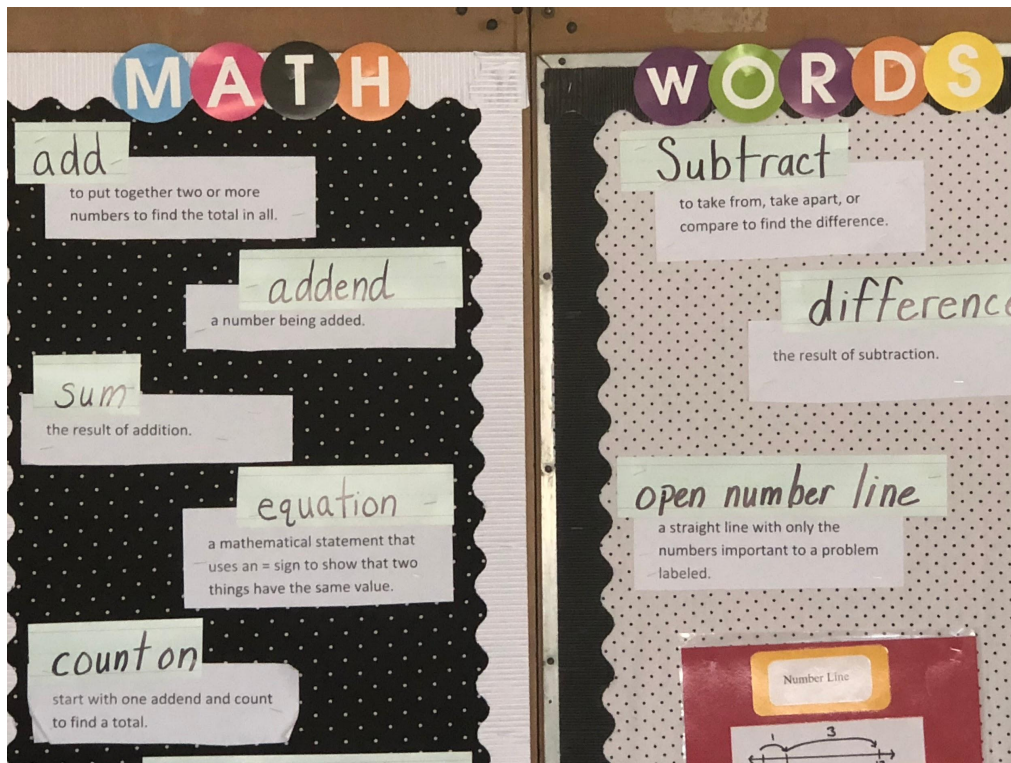
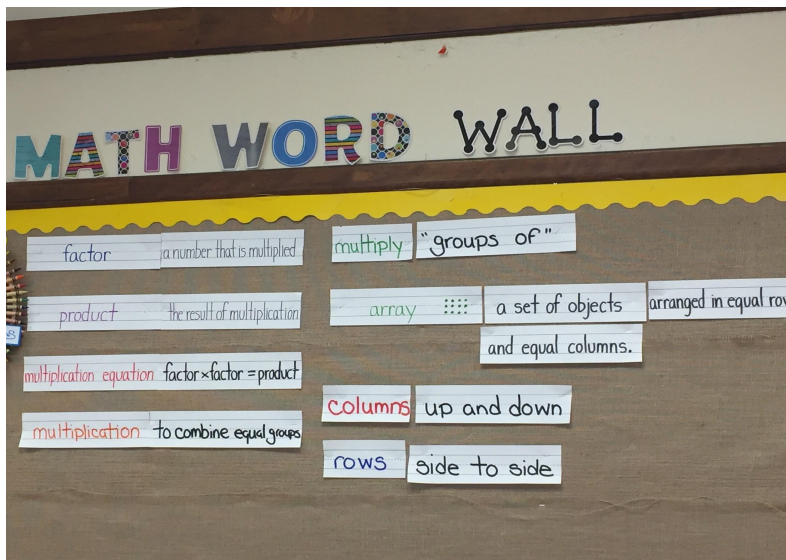
Practice counting time

- Choose a Partner
- Get a Collection
- Make a Sign
- Get Tally
- Count your Collection
- Represent your Collection
- Repeat with a new collection
- Repeat with a new collection

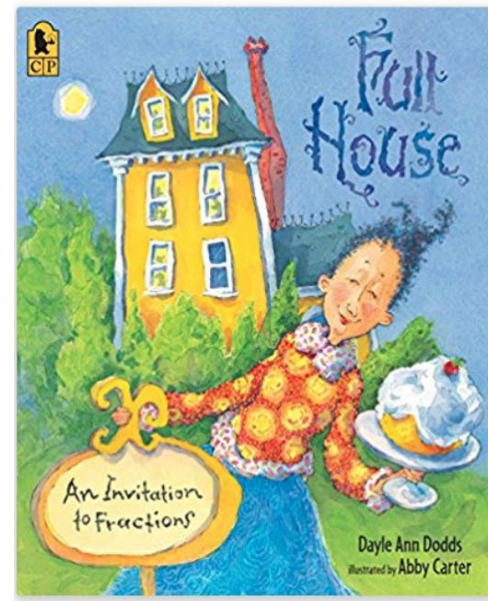
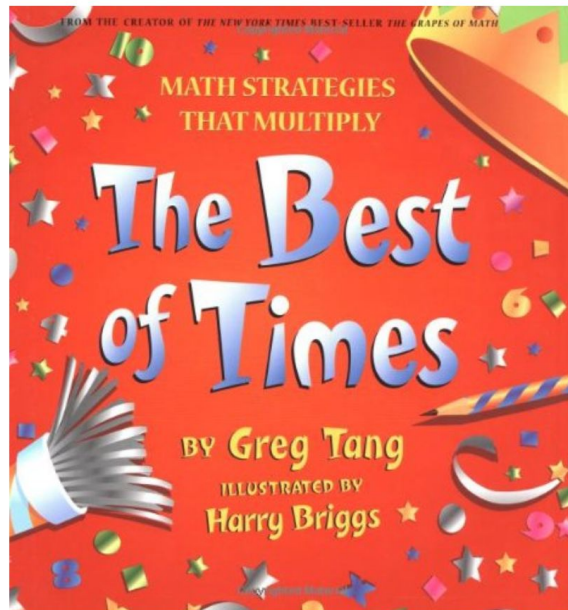
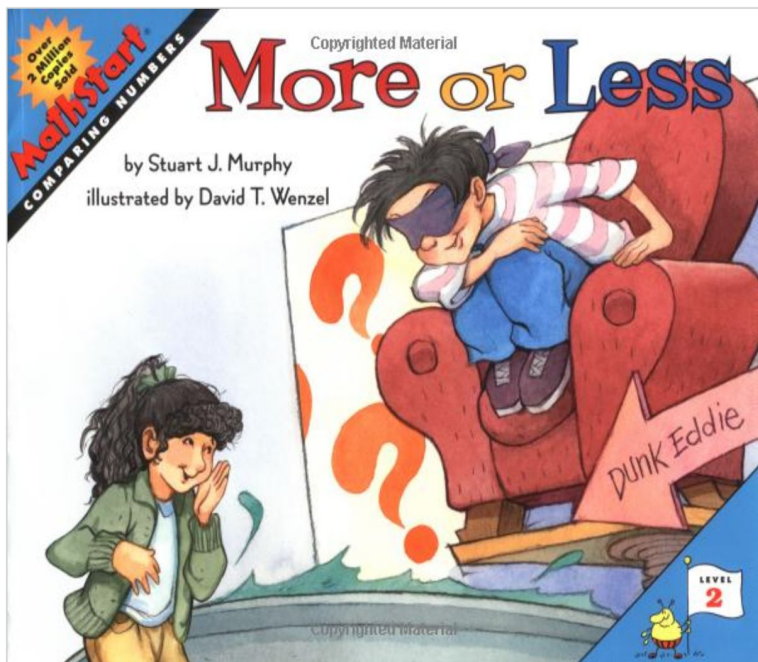
Write your numbers

Anchor Chart Resource Wall

Fostering Mathematical Literacy



Read alouds launch topics and engage students.

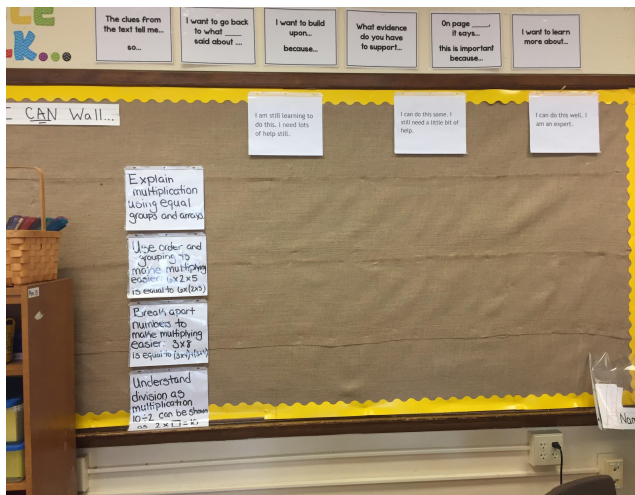


Social Environment



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

Community of Mathematicians



Community
A group of people sharing the same space and following the same rules.

We are a community of mathematicians!

As a community of mathematicians, we need to:

- Share our thinking
- Model our thinking
- Ask each other questions
- Prove what we are doing is correct
- Justify our thinking with examples
- Help each other and use our tools.



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?

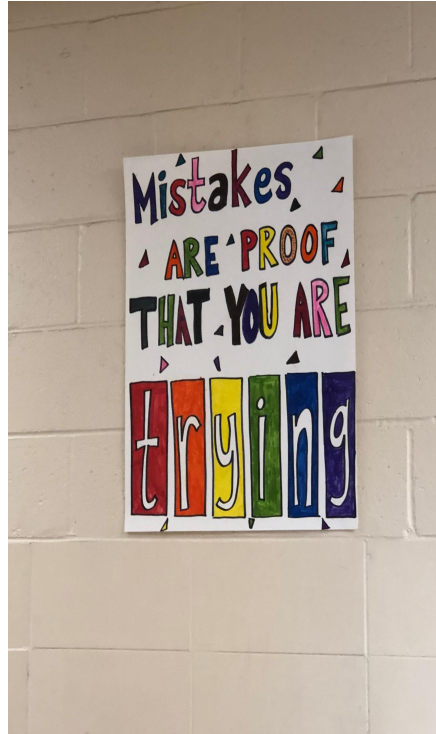
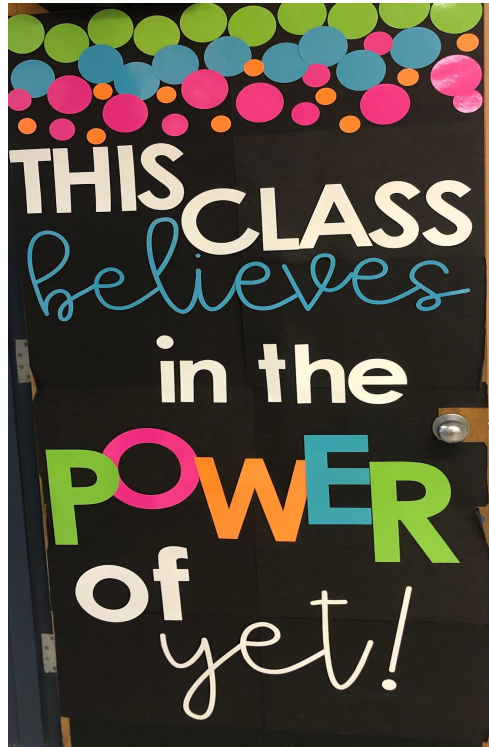
I'm confused when
you say X. Can you
elaborate?

I agree with
_____ because

Adding to what
you said,

Can someone
repeat what
_____ just said?

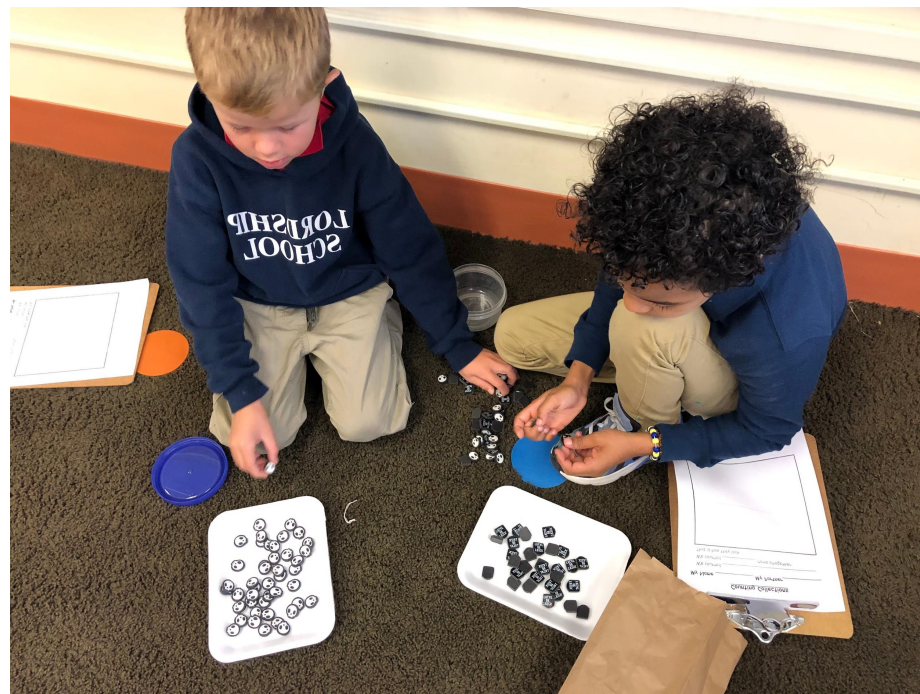
Promoting a Growth Mindset



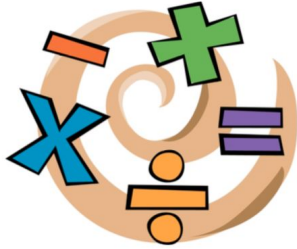
Growth Mindset Messages

- 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



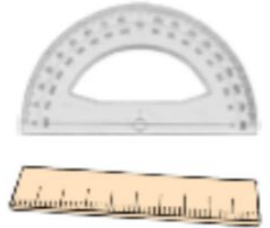
Math Practices



PRECISION

Good mathematicians...

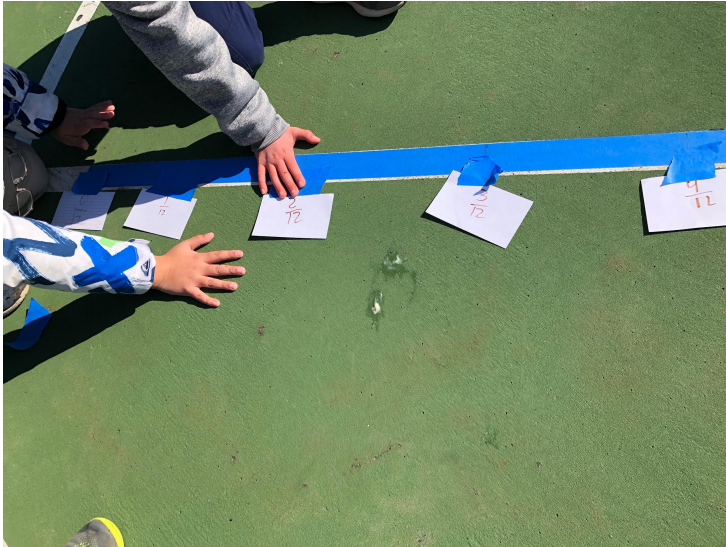
1. make sense of problems and keep trying even when problems are challenging.
2. use numbers to describe situations.
3. justify their strategies and listen to see if other people's ideas are logical.
4. make models of situations
5. use a variety of mathematical tools.
6. try to be accurate and revise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

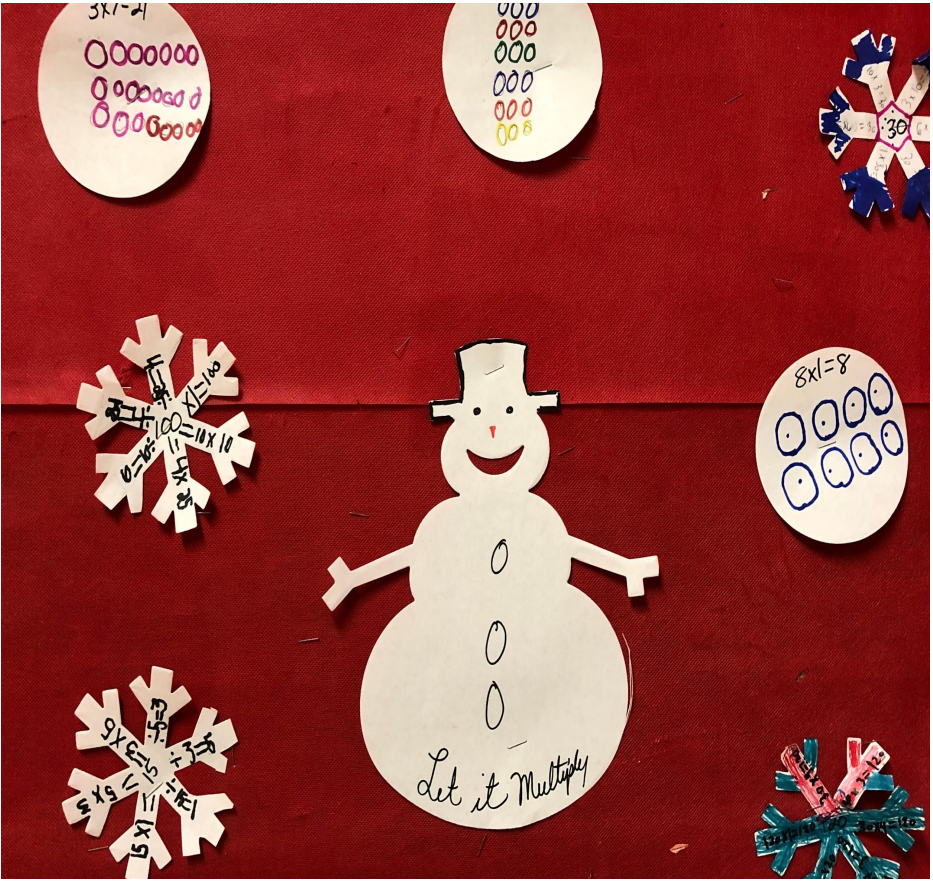


EFFICIENT

Beyond the Classroom

Extend student learning outside of the classroom





Questions - Final Thoughts

Thanks for coming!

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