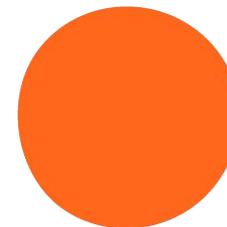
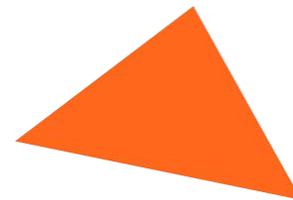
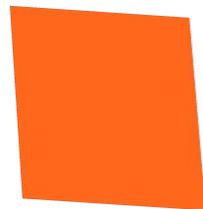




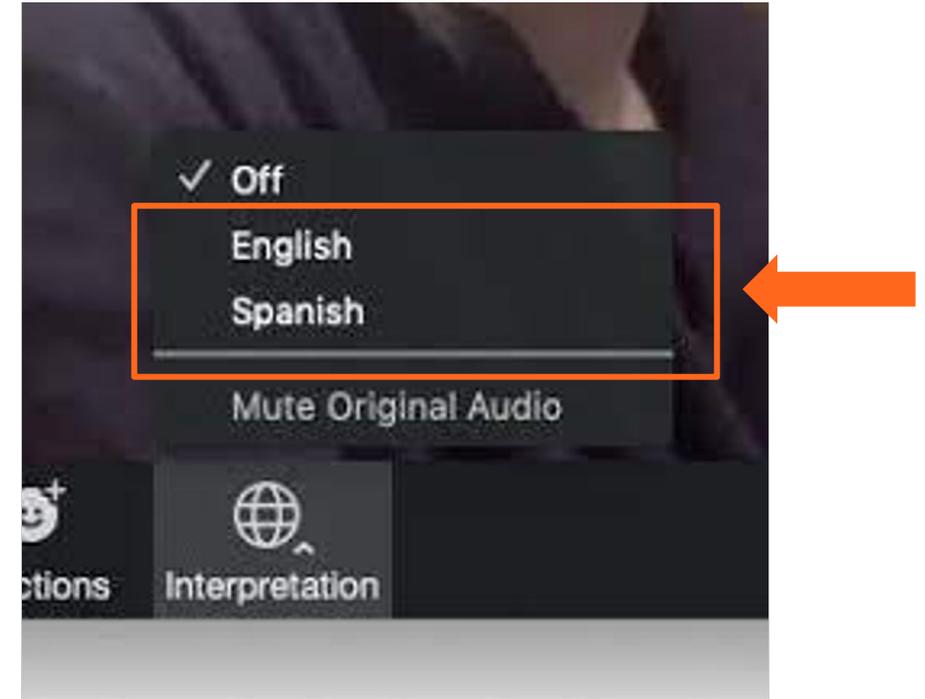
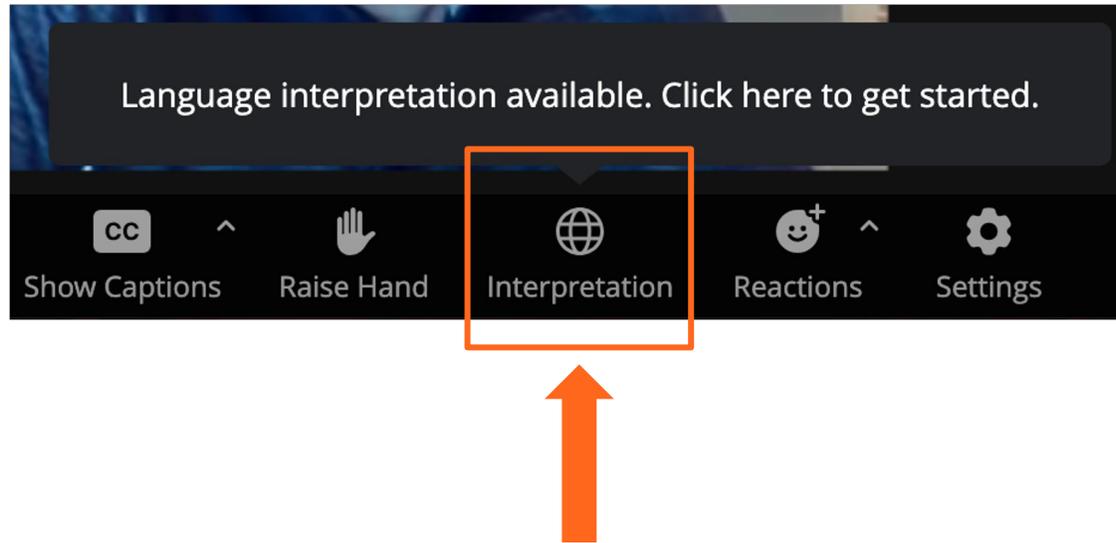
Foster Joyful Math Learning: Engage Families through Play-based Strategies

A webinar for educators and families

2:00-3:00pm ET
February 26, 2025



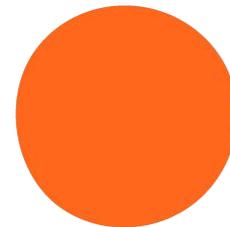
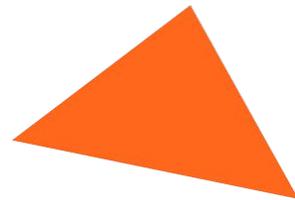
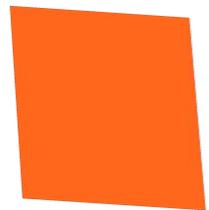
Language interpretation for this webinar is available



Please, select the language you would like to listen with

Por favor, seleccione el idioma que prefiere

Our co-Host



Consortium for Engaging Families Across Maine (CEFAM)

CEFAM helps Maine students and families grow and thrive. We work directly with communities at the ground-level and with key partner organizations to implement culturally responsive family engagement.

CEFAM, a program of MAEC, is a federally-funded Statewide Family Engagement Center.

ABOUT MAEC

MAEC is an education non-profit dedicated to increasing access to high quality education for culturally, linguistically, and economically diverse learners.



Consortium *for* Engaging
Families Across Maine

[Visit us online at maec.org/CEFAM](https://maec.org/CEFAM)





Center for
Family Math

NAFSCE Mission + Vision



OUR MISSION

Advancing high-impact policies and practices for family, school, and community engagement to promote child development and improve student achievement.



OUR VISION

A world where family engagement is universally practiced as an essential strategy for improving children's learning and advancing equity.



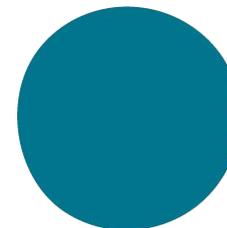
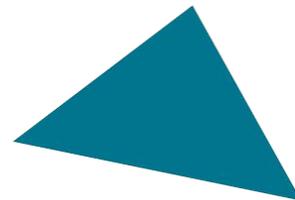
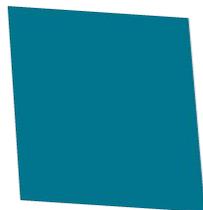
NAFSCE's Center for Family Math

Mission

Advancing research, policies, practices, partnerships, and systems that inspire, harness, and amplify the power and love of math through family and community engagement.

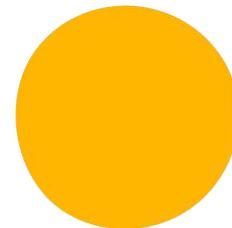
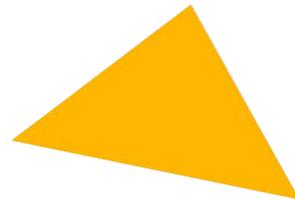
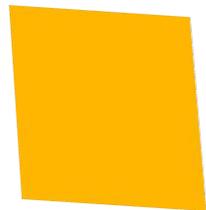
Vision

A world where Family Math advances learning and equity for each and every child.



What is Family Math?

Family Math is culturally relevant math concepts and interactions occurring in the everyday activities in which families engage with their children—from the day their children are born to the day they graduate high school. Research shows that everyday math conversations add up, creating better school and life outcomes.





Foster Joyful Math Learning: Engage Families through Play-based Strategies

February 26, 2025

Introductions



Emily Amick

Managing Director, Products and Programs

Our Agenda Today

1. Introduction: Overview and Core Beliefs
2. Make Math Learning Joyful:
 - a) Play-based
 - b) Math Discourse
 - c) Culturally Relevant
3. Experience a Family Playlist
4. Q&A



About PowerMyLearning

Our mission is to empower each student, particularly those from historically marginalized communities, to thrive academically, socially, and emotionally by working hand-in-hand with educators to foster equitable learning environments.



Our Core Beliefs about Math

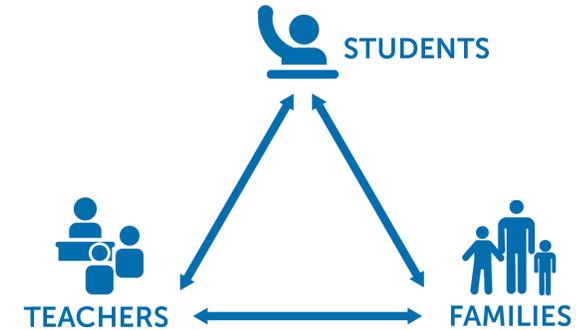
1. We are **ALL** math people.

2. Strong math instruction is an **equity** issue.

3. Math should be **joyful** and **relevant**.

The Power of Family Engagement

Decades of research shows that family engagement is a proven way to improve student outcomes



SEL Outcomes	Academic Outcomes	School Success
<ul style="list-style-type: none">• Self-efficacy• Social skills• Classroom behavior	<ul style="list-style-type: none">• Early literacy• Grades• Test scores	<ul style="list-style-type: none">• Attendance• Graduation rates

How To Make Math Joyful **AND** Impactful

1. **Incorporate Play:** engage students through play-based learning while fostering growth mindsets.
2. **Facilitate Math Discourse:** provide opportunities for students to talk about math in class and at home.
3. **Culturally Relevant:** connect math to students' identities and lived experiences.



1. Incorporate Play

Benefits of Play-based Learning

 **Boosts Student Confidence:** Encourages a growth mindset by making math engaging and low-stakes.

 **Enhances Fluency:** Builds number sense through repeated, interactive practice.

 **Develops Problem-Solving Skills:** Fosters curiosity, creativity, and critical thinking.

 **Provides Powerful Insights:** Helps families identify strengths and support growth through observation.

Play Nurtures Math Mindsets

Families can support their child's math development by:

1.  Playing math games together, and
2.  Bringing math into daily routines.

 Remember, mistakes aren't setbacks—they're opportunities for growth. Brain research shows that mistakes create new learning connections, especially for students with a growth mindset.

Resources to Get Started



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Math Myths vs. Facts

Myth:	Fact:
✗ Some people are "math people" and some people aren't.	✓ We can all be math people! If you didn't like math as a kid, try not to share that with your child. Try to get excited about learning <i>with</i> them.
✗ Math is boring and you don't use it outside of school.	✓ Math is all around us! When we cook, budget, and do chores, we are using math. Many games also use math. Math can be fun!
✗ Math is about learning the right steps to solve a problem.	✓ There are usually many different ways to solve a math problem. If one strategy doesn't work, encourage your child to try something else.
✗ Math is about getting the right answer.	✓ The questions we ask and the way we think about the problem are just as important. Mistakes help us learn!

2. Provide Opportunities to Strengthen Math Discourse

Math Discourse

The more parents talk about math with their children, the stronger their children's math skills.*



- The amount of mathematics talk that children **hear** is a strong predictor of math outcomes.
- For children in elementary school, **families' school involvement is a significant predictor** of children's math knowledge.

* Meta-analysis of 22 studies

Source: [Hechinger Report](#), January 2025

The Power of Learning By Teaching

When students teach others, they strengthen their understanding, build confidence, and retain knowledge longer.

Research shows that learning by teaching has a greater impact on student achievement than:

- ✓  Homework
- ✓  Test-taking strategies
- ✓  Individualized instruction



Resources

Flip traditional roles and let students **teach** you a math concept!

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6 Prompts to Help Your Child Take the Lead During Homework Time

Helping your child with homework can be stressful if you don't know a lot about what they're learning in school. The good news is that the best way to support your child is to let them show you what they're learning!

Learning By Teaching

Learning by teaching is considered one of the best learning strategies and has been proven to improve student understanding and memory of what they are learning. Plus, it creates an opportunity for you to be more involved in your child's learning!



Let Your Child Take the Lead

Ask guiding questions to help your child problem-solve using the resources they have from class.

-  **Find Resources**
 1. "What are you learning in school that can help with this?"
 2. "Where can we find more information?"
-  **Explain the Process**
 3. "What strategy do you want to use? Why?"
 4. "Where should we start? What comes next?"
-  **Make Connections**
 5. "How does this connect to what you learned last week?"
 6. "When would you use this in the real world?"

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Learning by Teaching: Family Math Prompts

Encourage your child to teach you what they're learning in math! Use these prompts to help them along the way.

<h3>Explain the...</h3> <h4>Big Idea</h4> <ul style="list-style-type: none">• What is the problem asking us to do or find?• What is this problem about?• What kind of solution will this problem have?	<h3>Describe the...</h3> <h4>Thought Process</h4> <ul style="list-style-type: none">• How do we get started thinking about the problem?• What would be the different parts if we broke it down?• Can we draw a picture or make a model to show it?
<h3>Overcome...</h3> <h4>Obstacles</h4> <ul style="list-style-type: none">• What other method can we try?• What do we think comes next?• What do we know about this part?	<h3>Encourage...</h3> <h4>Reflection</h4> <ul style="list-style-type: none">• What is another way we could have solved this?• How are we sure this is correct?• What is another example of this type of problem?

Toolkit



3. Connect Math to Students' Lived Experiences

Making Math Culturally Relevant

1. I am a Math Person



2. Math is Everywhere!



Windows and Mirrors

Instruction should offer students both windows and mirrors.

-  **Mirrors:** Help students see their own identities, cultures, and experiences reflected in math problems and instruction.
-  **Windows:** Expose students to new perspectives, cultures, and ways of thinking about math beyond their own experiences.



Using Everyday Objects



Resources to Get Started



Math Is All Around Us

Print and post this on your fridge to remind your family how to turn everyday moments into joyful, spontaneous math learning opportunities that honor your family's experiences, traditions, and skills!

Moment	Activity	Simple Starter Prompts
In the Kitchen	Talk about family recipes and the math behind cooking. Unpack the importance of measuring, ratios, and timing while cooking. Compare food portions or grocery budgets.	What happens if we change an ingredient or measurement? If we split this meal for everyone, how much does each person get?
On a walk	Notice patterns in nature, buildings, or street signs. Count steps, look for symmetry, or discuss distances.	How many steps do we take from here to the store? What shapes do you see around us?
Watching or playing sports	Connect math to keeping score and movement. Discuss angles in dance, speed in running, or force in martial arts.	What math do you use in your favorite sport, dance, or activity? How does math help you improve?
Commuting to an activity	Explore navigation and directions. Talk about routes, speed, travel time, or bus schedules.	What's the best way to get from here to [destination]? How would you explain directions to someone else?

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Name: _____ Date: _____

Family Math Interview

Directions: Pick an adult to interview about math. It could be a parent, neighbor, babysitter, or older sibling. Ask them to read the letter first. Then, ask them these questions and draw a picture of what they say!

	How do you use math inside the home?	
	How do you use math outside the home?	
	What do you do when you get stuck solving a math problem?	

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Toolkit

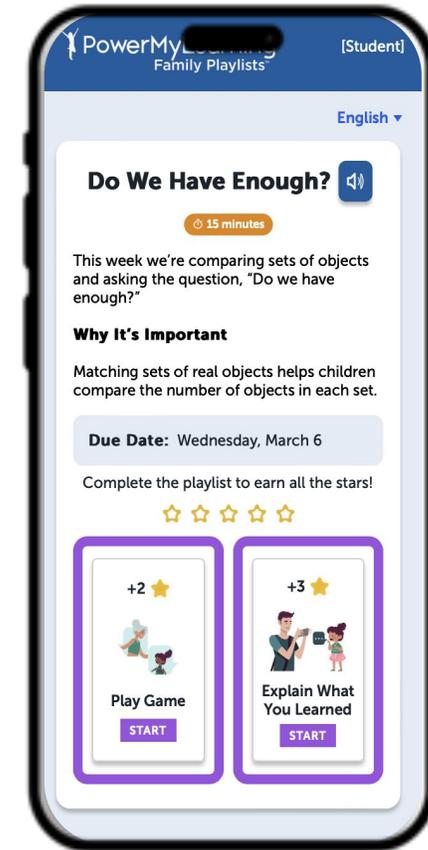


Family Playlists

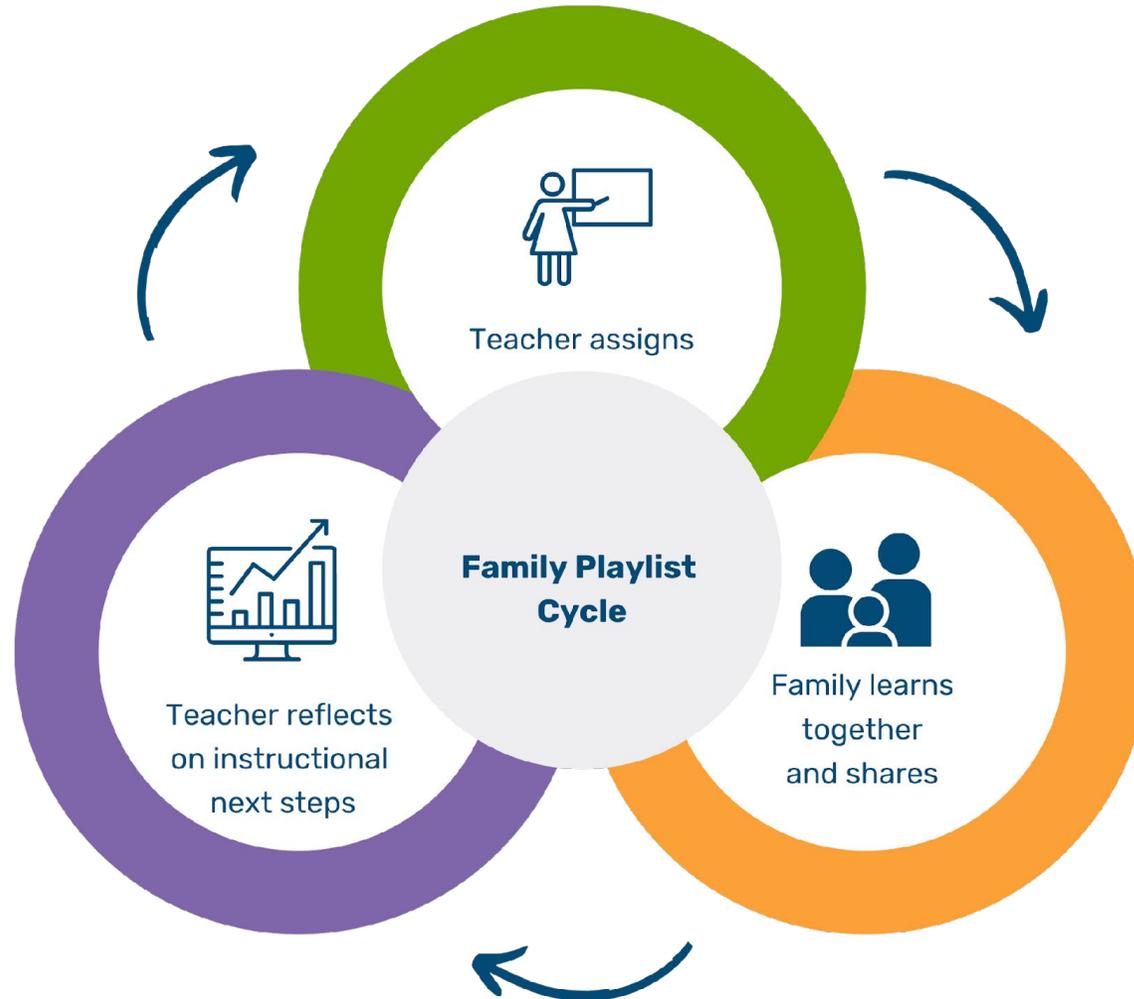
What are Family Playlists?

Sets of weekly **play-based** math activities for students in K-2 students to complete with a family partner at home

- ✓ Aligned to your math curriculum
- ✓ Provides **additional math practice** at home (aligned to what's happening in classroom)
- ✓ Delivered via text in **140+ languages**
- ✓ Support teachers in evaluating **student understanding and mastery** of math standards
- ✓ Positive impact on student **SEL development**



How They Work: Family Playlist Cycle



Steps 1 and 2

Teacher assigns a Family Playlist

Family Partner and Student learn together and share



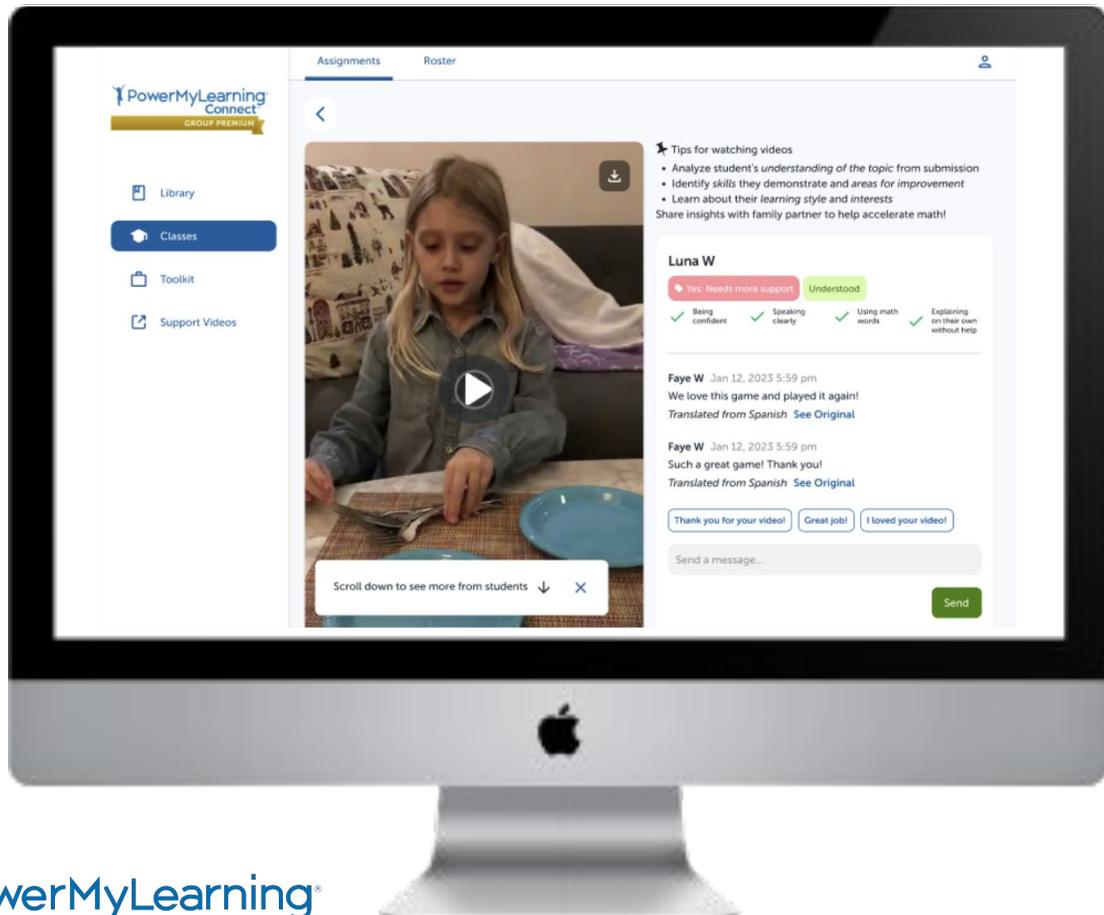
Scan the code to open a Sample
Family Playlist for Kindergarten
on your phone



Step 3

Teacher reflects on next steps

Teachers receive *student videos* and *family feedback* via our reports page



Teachers can use this reports page to:

- ✓ Gain insights into student learning and their math talk
- ✓ Learn more about their students as whole children
- ✓ Send messages and feedback to families

Program Overview

The Early Grades Math Program with Family Playlists (K-2) program invites each member from a student's circle of support into their learning to increase math and SEL achievement.



Ways PowerMyLearning can support

FAMILIES

Family Playlists for K-2

- Play-based activities to your district's math curriculum for the home
- Sent via text/email to families in their preferred language (translated in +140 languages)
- Demonstrated impact on math outcomes, SEL, and family engagement

FAMILIES

Family Workshop Toolkits

- Turnkey resources to facilitate 60-minute family workshops in English and Spanish
- Facilitator Training: includes a virtual coaching session on how to best deliver the workshops

TEACHERS

Math Professional Learning

- Educator Workshops & Collaborative Learning Series
 - ✓ Strengthen math mindsets
 - ✓ Team up with families
 - ✓ Learning by teaching
 - ✓ Support math discourse
- Instructional Coaching

PowerMyLearning's Evidence Base



Math Academic Achievement

- +10pp increase in K-5 math scores
- +70% students improved grade placement level
- +34% students met or exceeded grade-level standards
- Students struggling in math improved 4.5pp more than students at grade level



Social Emotional Learning (SEL)

- Statistically significant improvement in overall student SEL (+7pp, $p=.02$)
- More pronounced SEL impact on high needs students, including Black and Hispanic students, Multilingual Learners (MLLs), and students with learning differences



Teacher Practice

- Statistically significant improvement across core areas of instructional practice including instructional planning and design, student agency, data-driven instruction, and learning environment.
- +8pp increase in teacher retention



EAmick@PowerMyLearning.org

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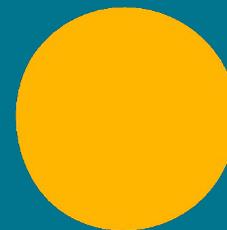
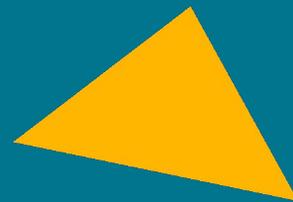
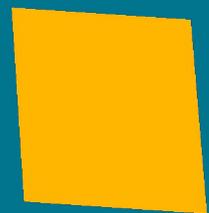
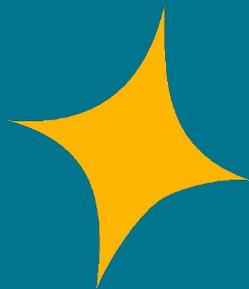
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Discussion and Questions

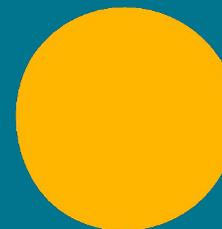
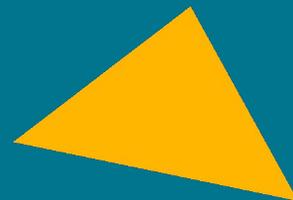
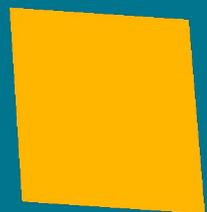
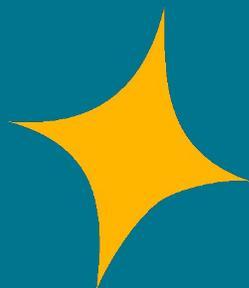




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Find resources at:

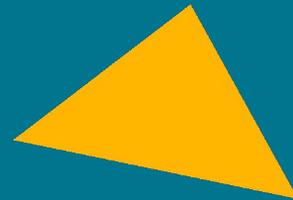
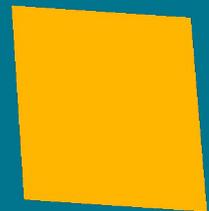
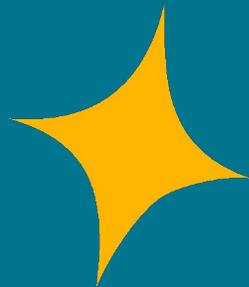
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