



## End of Year Report

#MiMathEssentials

[Mathessentials.org](https://mathessentials.org)

### [Section 1: Student Achievement Results in Mathematics](#)

### [Section 2: EMPL Progress](#)

[Professional Learning](#)

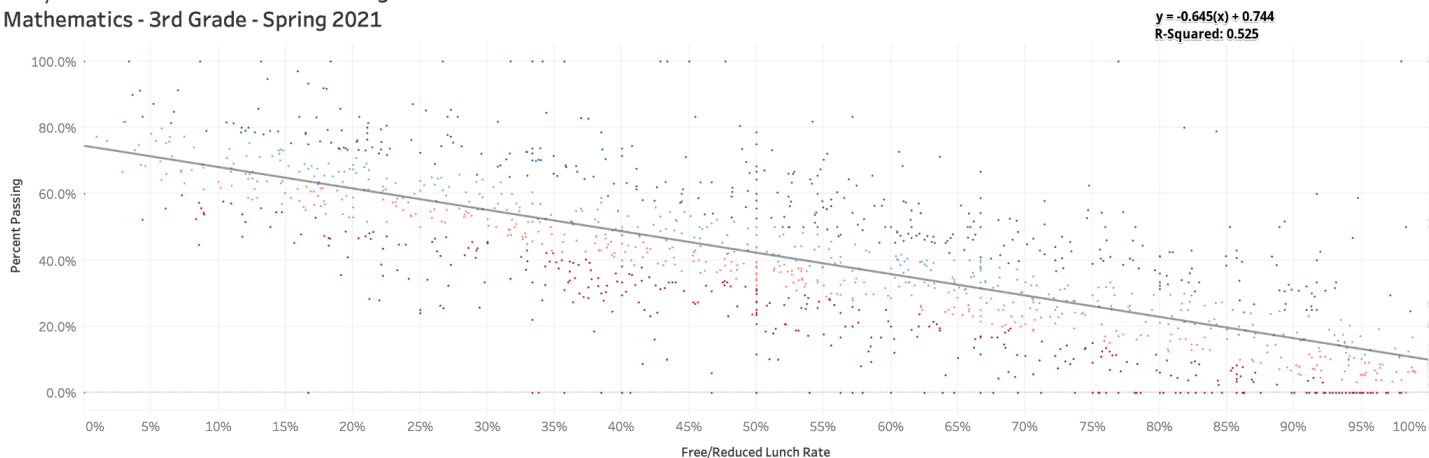
[System Development](#)

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### Section 1: Student Achievement Results in Mathematics

The following can serve as a baseline for student achievement results in early mathematics (Grades PK - 3) in Michigan. Following each set of data, a few key points are highlighted to pay particular attention.

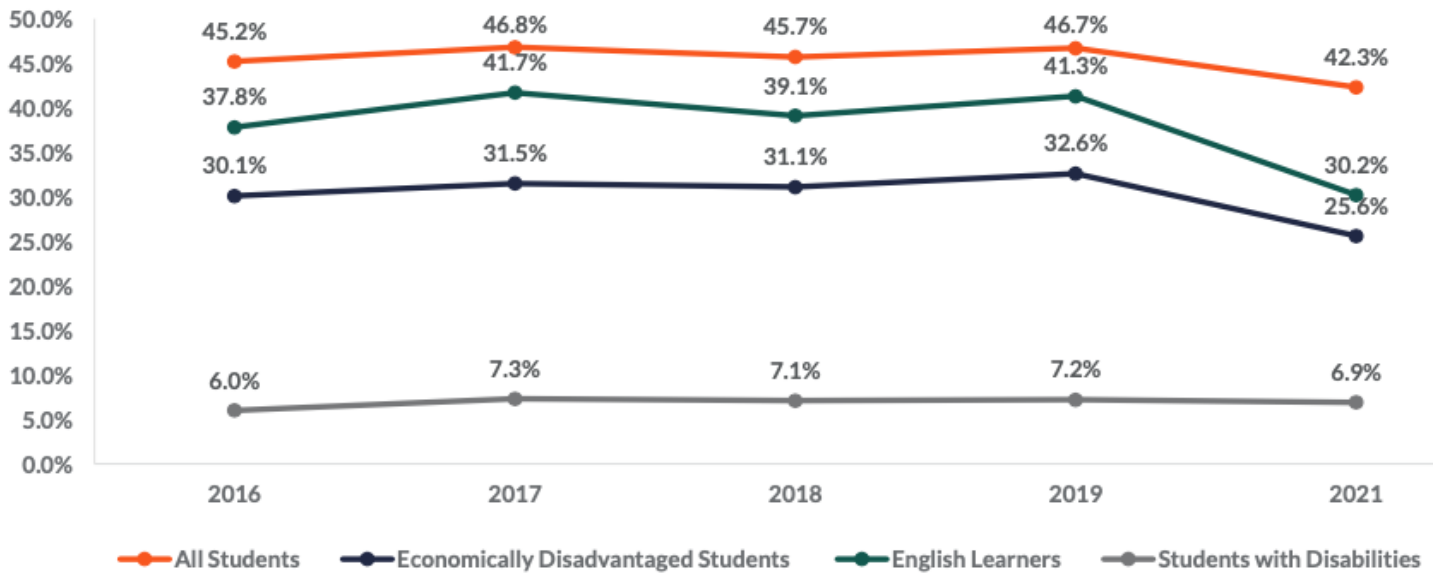
Free/Reduced Lunch vs Percent Passing  
Mathematics - 3rd Grade - Spring 2021



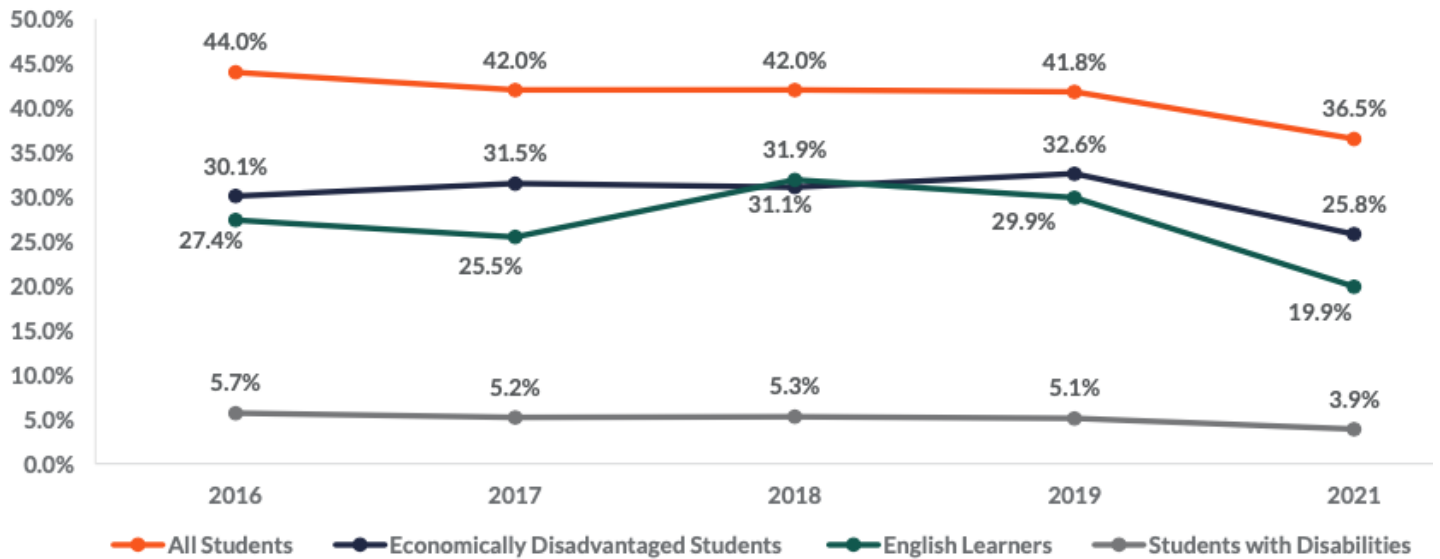
#### Key Points:

- Mathematics achievement measured by M-STEP across 3rd grade classrooms in Michigan in Spring of 2021 is predictable by the Free/Reduced Lunch Rate.
  - As the Free/Reduced Lunch Rate increases, the school's percent passing in 3rd grade generally decreases.
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### Percent of Grade 3 Students Scoring Proficient or Advanced on the M-STEP in Mathematics



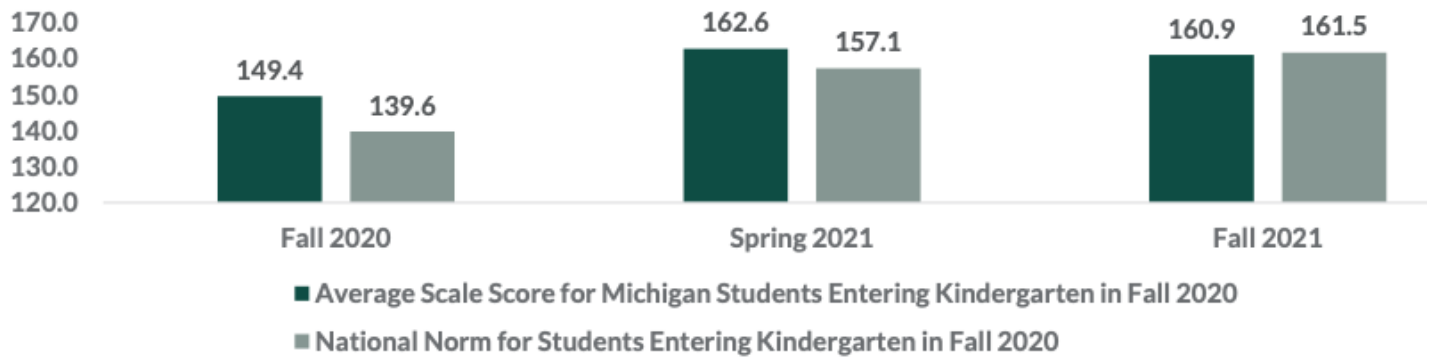
### Percent of Grade 4 Students Scoring Proficient or Advanced on the M-STEP in Mathematics



#### Key Points:

- The percent of students in Grades 3 and 4 scoring Proficient or Advanced on the M-STEP in mathematics declined substantially from 2019 to 2021.
- The decline was especially strong for economically disadvantaged students and English learners.
- Clearly, the pandemic negatively impacted student content knowledge as measured by the M-STEP.

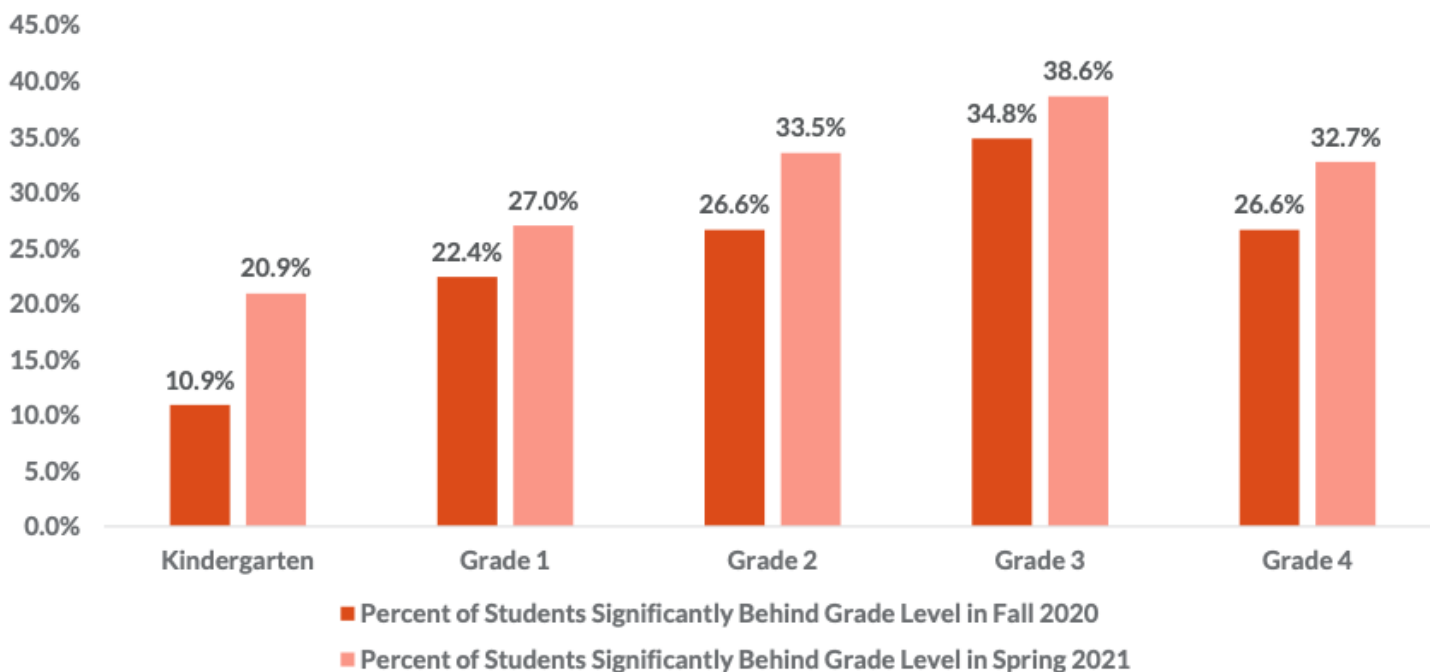
## Average MAP Scale Scores in Michigan and Nationally, Grades K-2



### Key Points:

- Students beginning Grades K-2 in Michigan earned higher average MAP scale scores than the national norm in the fall semester of 2020.
- However, students in the national sample experienced higher growth rates than our students in Michigan.
- Michigan's "lead" entering Kindergarten in the one year of instruction dissipates significantly. Similar trends happen for Grades 1 and 2.

## Percent of Michigan Students Significantly Behind Grade Level, Grades K-4



### Key Points:

- The percent of students with MAP scores significantly behind the expected scores for their grade level increased across Grades K - 4 during the 2020 - 2021 school year.
- This effect was strongest in Kindergarten, where the percent of students significantly behind grade level increased by 10 percentage points.

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In summary, Early Mathematics student achievement data in Michigan can be summarized by:

1. As Free/Reduced Lunch Rate increases, student achievement decreases.
2. Children in early grades see lower growth in Michigan than those in the United States.
3. The pandemic has significantly negatively impacted student achievement.

## Section 2: EMPL Progress

### Professional Learning

#### Early Mathematics Leadership Institute

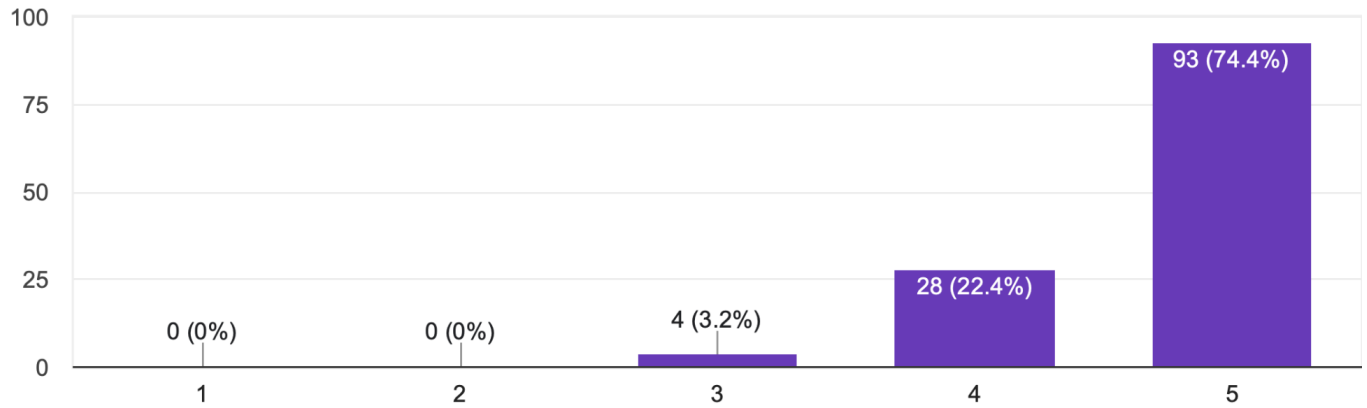
The purpose was to bring Michigan educators and leaders together to expand their vision of early mathematics teaching and learning and engage with resources, build community and inspire a systems approach to implement transformation. This institute built capacity in our leaders to support, sustain and inspire high-quality math instruction for all children in pre-k through 3rd grade classrooms.

#### Key Points:

- 219 Mathematics Education Leaders attended from across Michigan
  - MAISA, ISD Teams, Michigan Department of Education, MI-STEM, Alt+Shift, University of Michigan, Michigan State University, University of Colorado Boulder, Great Start to Readiness, Early Childhood Support Network
- Feedback from participants
  - *“I feel more capable of articulating aspects of implementation and adult learning. I have more confidence in my organization moving forward and creating and using tools to ground our thinking and reflect on our progress. (Becoming, thinking traps, resistant->internalize)”*
  - *“Having team time to process throughout day 1 and plan on day 2. And how could I not mention those videos!!! Also a chance to have us think deeply about disrupting inequities and writing new stories.”*
  - *“Planning for the continued work around the EIPs for my building’s teachers. I will use lenses of joy, of learning/doing/becoming, of authorship, of identities, of transformation to do this work. I also can’t wait to pull in JOY and STORYLINES to empower teachers to positively impact the math learners in their classrooms.”*
  - *“The conference was so well thought out. Loved each session and the opportunity to have time to collaborate.”*
  - *“Connections were made both within my ISD and across the regions surrounding it as well as statewide connections.”*
- Participant overall rating:

The whole group sessions pushed me to consider ideas, topics or perspectives I had not previously considered.

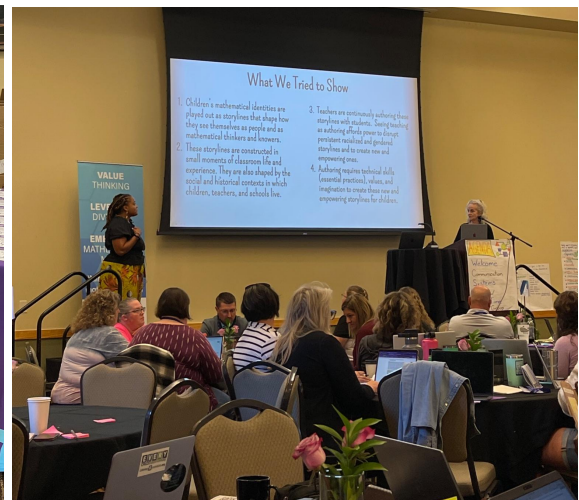
125 responses



● Pictures from the event:







## The Surprising Importance of Early Math for Everyone (Webinar)

Learn about surprising research findings about early mathematics, including its predictive power, children's potential for learning, and what we know about effective teaching using research-based learning trajectories. Takeaways include new supports ([learningtrajectories.org](http://learningtrajectories.org)) for teaching and learning early math playfully and joyfully.

We had 199 educators across Michigan attend the webinar! We will share [the recording of the webinar](#) on our website and via email for everyone to view at a time that works best for them if they were unable to attend.

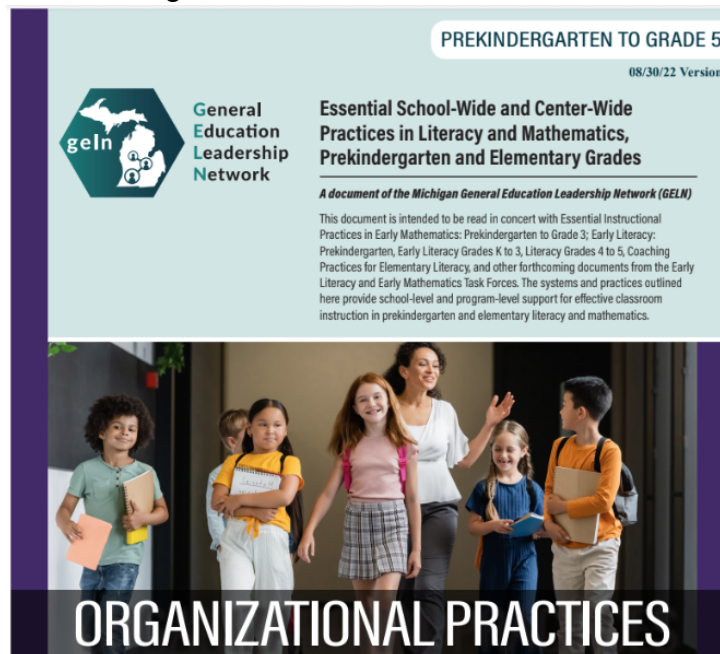
## System Development

### School Wide / Center Wide Essentials

The purpose of this document is to increase Michigan's capacity to improve children's literacy and mathematics learning by identifying systematic and effective practices that can be implemented at the organizational level in educational and care settings that serve young children. To meet the needs of all young learners, organizational practices must support literacy and mathematics development in ways that systematically impact learning throughout elementary schools, early childhood learning centers, and other learning environments and programs.

Over the past year, our team of researchers have worked to revise the existing Organizational

Practices for literacy to be inclusive of mathematics and include updated research. The [new document](#) was released in August of 2022.



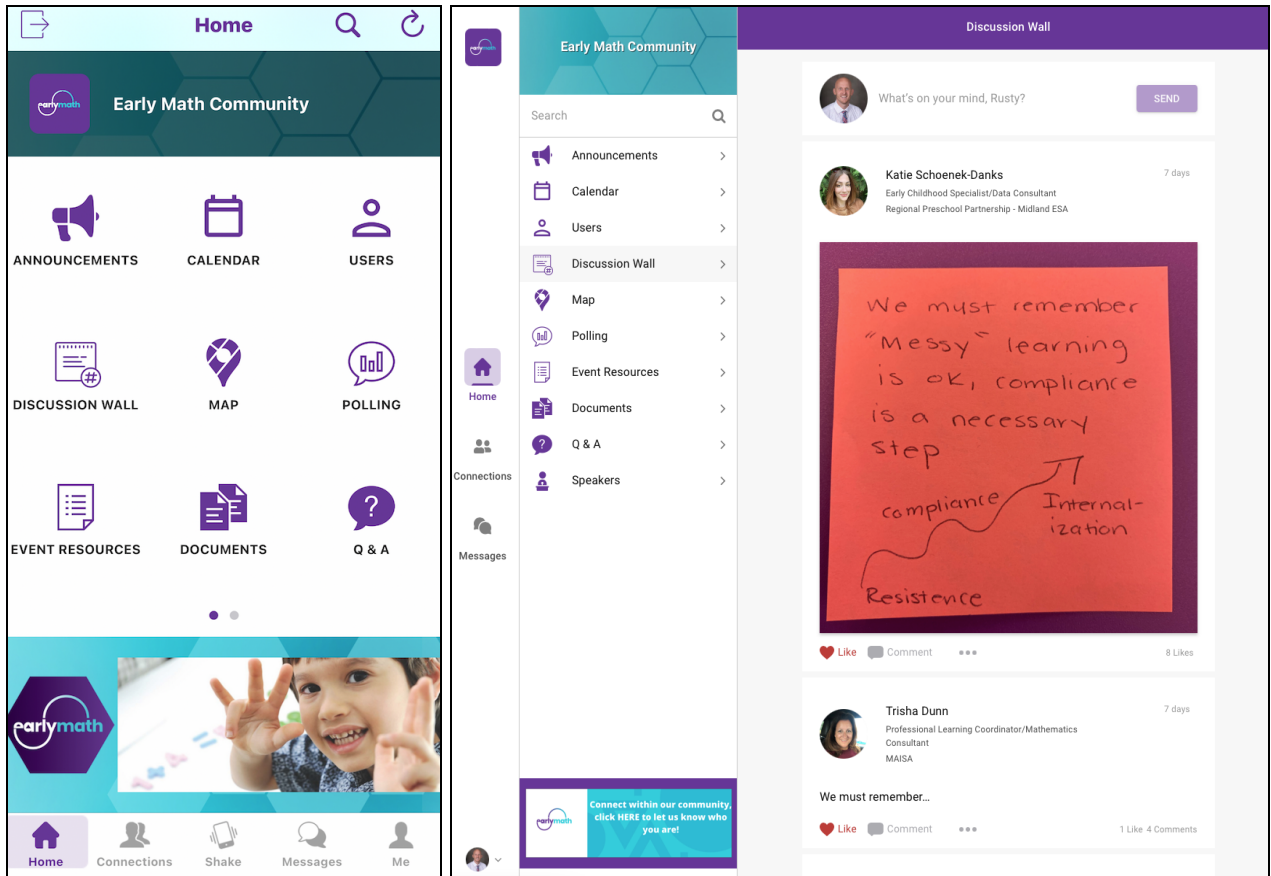
#### Modules: Essential Instructional Practices in Early Mathematics

We have created modules to support educator learning across Michigan around the [Essential Instructional Practices in Early Mathematics](#). These modules will begin to launch in September of 2022! To be able to get a look at two of the modules, use the following links:

- [Foundations Module](#)
- [Video-Based Case Module](#)

#### Michigan Early Mathematics Application

Part of our need in Michigan is a way to authentically connect mathematics leaders and educators. As a vital part of our network, we have launched our Michigan Early Math Community. This application (Apple, Google Play, and Web based) will support our ability to connect educators to resources. Here are a few pictures to showcase the power of the application:



## YouTube Channel

We have launched our [YouTube channel](#)! This channel (Early Math in Michigan | MAISA) will house our videos from classrooms across Michigan, our recorded professional learning events, and our leadership series. As a part of our module development, we have captured and produced 80 videos of actual classroom instruction. Each of these videos will be publicly available on our channel.

## Early Mathematics Website ([mathessentials.org](http://mathessentials.org))

We have launched our website where we will house all important information pertaining to our work in Michigan. This space will serve as a one-stop resource for communication and resources for Early Mathematics Educators across Michigan.

## Course Development

Course development is a vital part of our work. As we continue to build capacity in Early Mathematics across Michigan, we need to do it in ways that create coherence and work toward the Vision. Each of these courses are able to run with multiple cohorts over time. ([Event Website](#))

## Adult Learning Principles

As we develop common expertise across Michigan, we know that having capabilities of working with adults in productive ways is a priority. We have developed a course with resources to support mathematics education leaders in learning about and applying a research based approach to facilitating groups of adults. This course launches September 12th!

Artifacts: [Memory Mat](#)



### The Building Block of Pre-K Mathematics LEADERS (Facilitated by Dr. Doug Clements)

In this full day professional learning experience, early math leaders will engage with research findings regarding the importance of early math and consider what children know and can learn about math. Leaders will define learning trajectories and how they contribute to coherent education and the role they play in early education. They will engage with resources and research around learning trajectories to support the teaching and learning of early math.

### The Building Blocks of Pre-K Mathematics TEAMS (Facilitated by Dr. Doug Clements)

In this professional learning experience, TEAMS of early math leaders and up to 4 teachers will engage with research findings regarding the importance of early math and consider what preK children know and can learn about math. Teams will engage in learning trajectories for subitizing, counting and geometry and connect the trajectories to instructional activities. Activities will be assigned between sessions to support implementation, conversation and growth throughout the year.

**In summary, we have made significant progress in creating leadership momentum in early mathematics and have developed a system that will support our work far into the future. The work is not done but has just begun. Our children in Michigan deserve the opportunity to learn mathematics in ways that live into [our values](#). We, as adults in the system, will continue to develop supports for everyone across our state to live into this vision.**