

# Supporting Accessible Mathematics Instruction

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MAASE Lunchtime Presentation

Accessible Learning Environments, encompassing Michigan's Integrated Mathematics Initiative, is an *Individuals with Disabilities Education Act* (IDEA) Grant Funded Initiative through the Michigan Department of Education, Office of Special Education



**I LIKE TO  
PARTY  
AND BY PARTY  
I MEAN  
TEACH  
MATH**



MICHIGAN'S INTEGRATED  
MATHEMATICS INITIATIVE

# Third Grade Math Proficiency

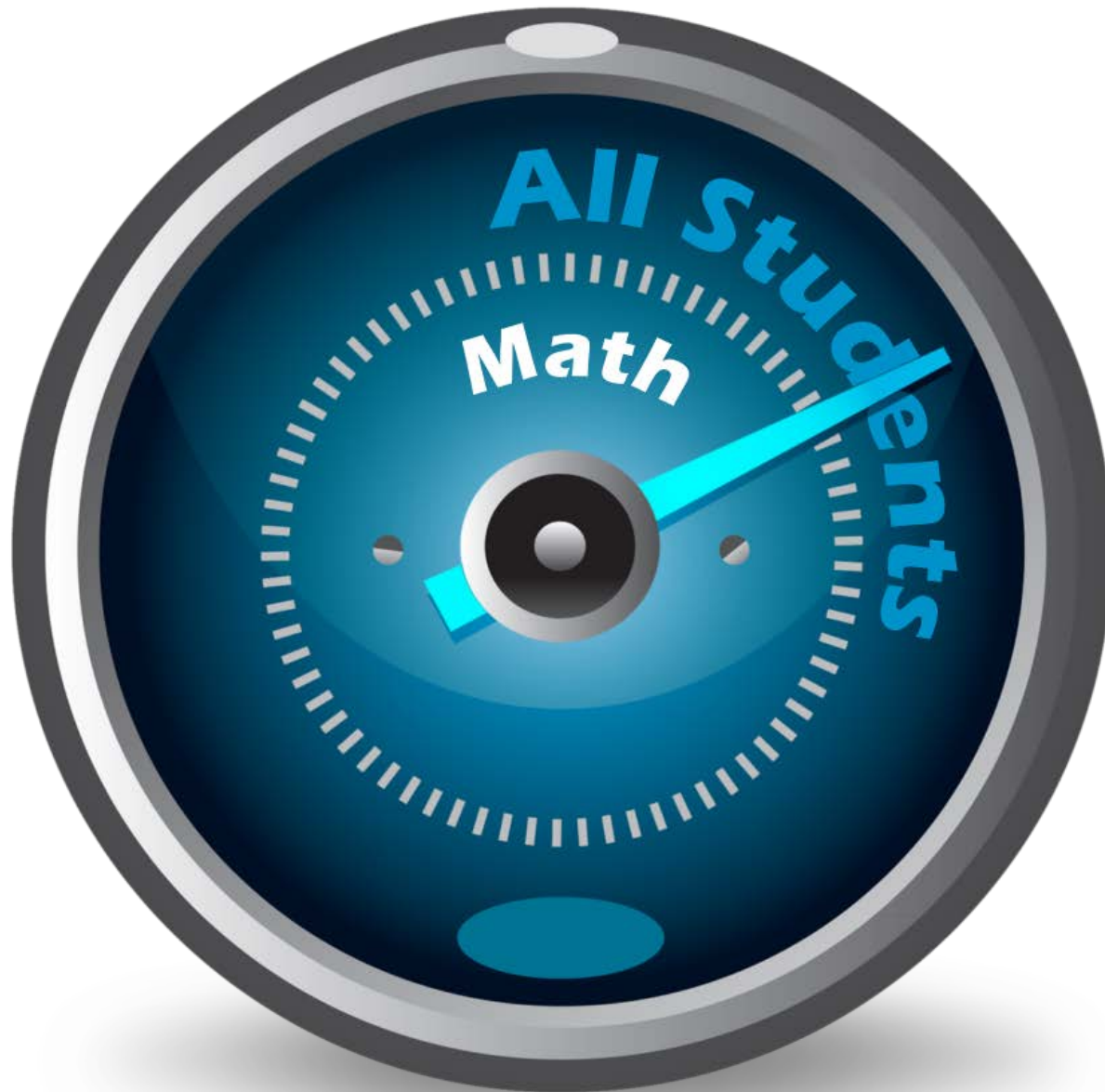
Group	2008-9	2012-13	Avg Change/yr	Number of years to 80%
All	39.8	40.9	0.3	141.18
African American	17.8	18.0	0.0	1239
Migrant*		10.1	-8.0	???
Economically Disadvantaged	24.8	26.8	0.5	105.40
English Learners	24.5	23.0	-0.4	???
Students with Disabilities	20.4	21.5	0.3	211.73

\* Migrant is based on one year change

# Eleventh Grade Math Proficiency

Group	2008-9	2012-13	Avg Change/yr	Number of years to 80%
All	25.7	29.0	0.8	60.82
African American	10.0	10.0	0	???
Migrant*		10.0	0.0	???
Economically Disadvantaged	10.5	13.0	0.6	106.2
English Learners	10.0	10.0	0	???
Students with Disabilities	10.0	10.0	0	???

\* Migrant is based on one year change





<http://changetheequation.org/press/new-survey-americans-say-%E2%80%9Cwe%E2%80%99re-not-good-math%E2%80%9D>



<http://changetheequation.org/press/new-survey-americans-say-%E2%80%9Cwe%E2%80%99re-not-good-math%E2%80%9D>

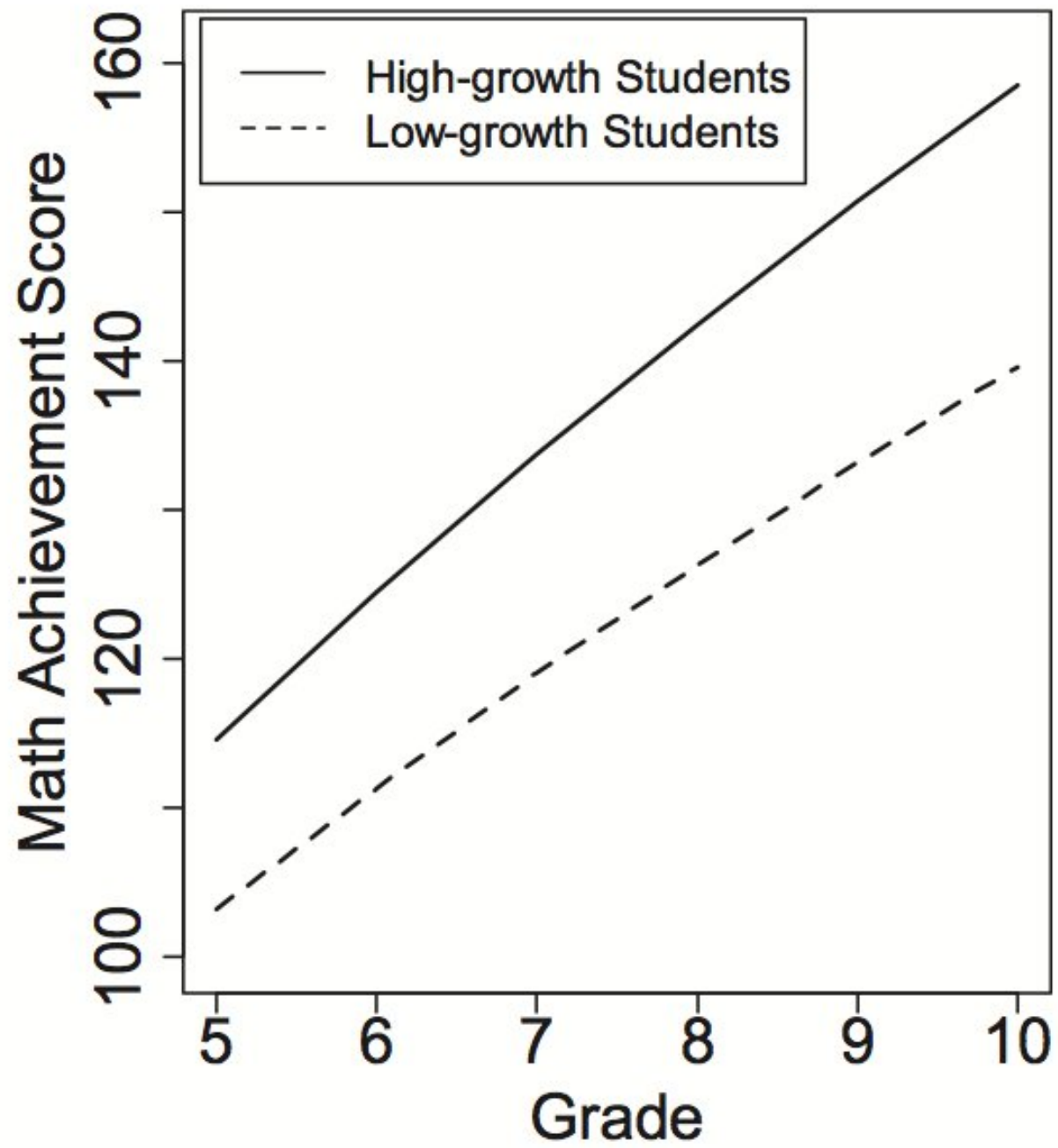




<http://changetheequation.org/press/new-survey-americans-say-%E2%80%9Cwe%E2%80%99re-not-good-math%E2%80%9D>



<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0048076>



**TAKE MATH**

**SERIOUSLY**

Math

What is  
 $(Mi)^2$ ?

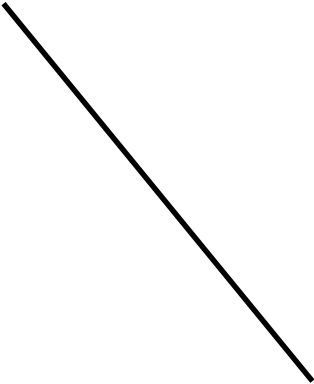
Professional  
Learning

Students  
with Special  
Needs

Research existing products and services

Math Instruction

Facilitator Network





# Accessible Math Instruction

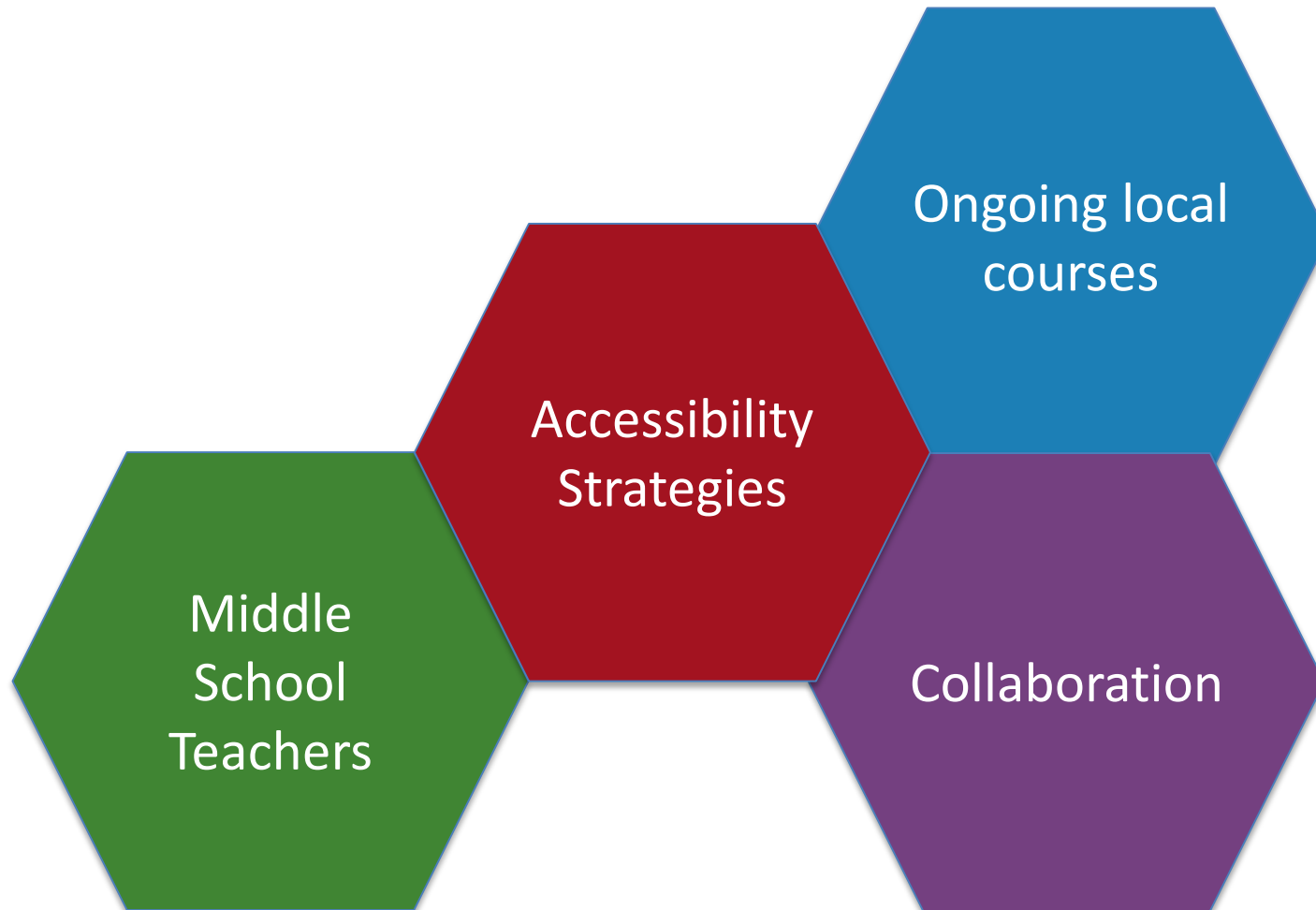


$(Mi)^2$

**YOU**



# Enhancing Mathematics Instruction for Students with Learning Difficulties

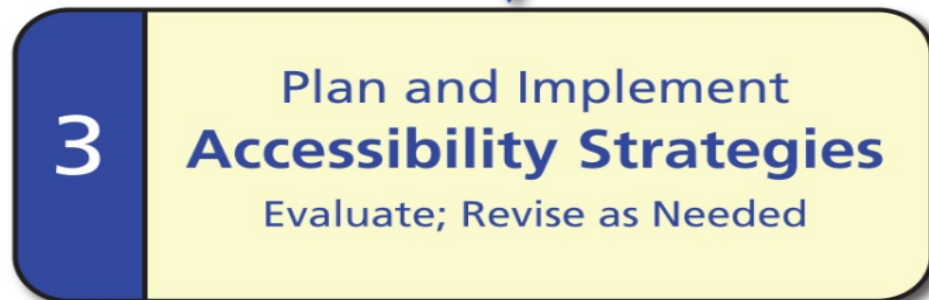
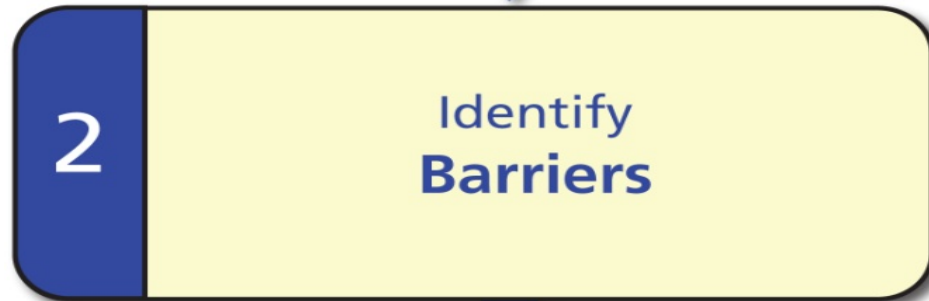
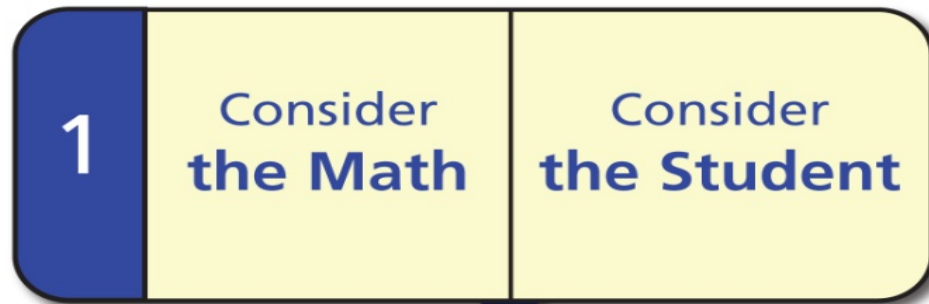


Gained ideas and strategies for “healthy” collaboration.

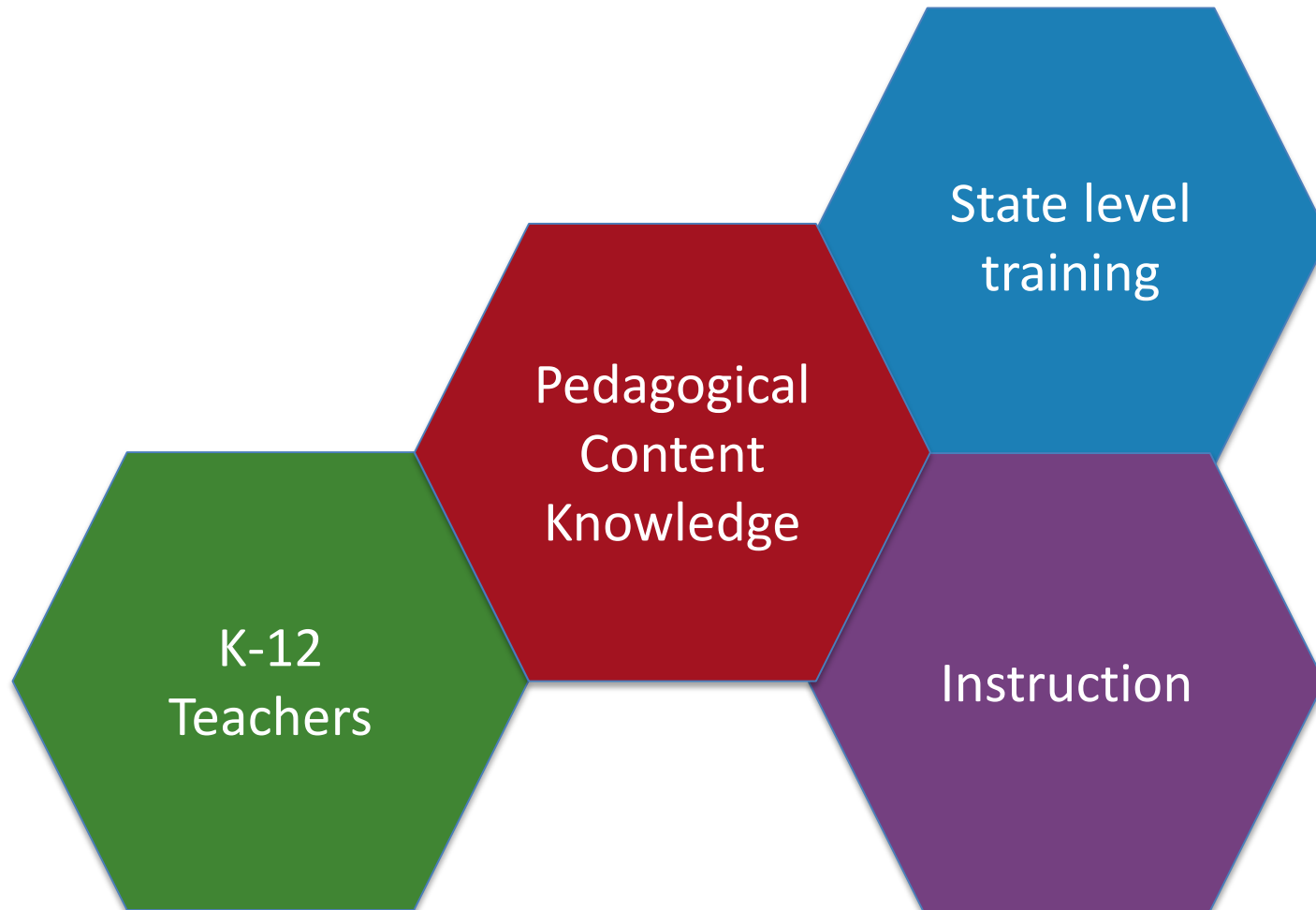
I feel more involved every time I attend... I loved watching how others do things... introduced to some exciting new strategies that I can use now.

I enjoyed working on the problems and looking deeply into their meaning.

Well researched inservice.



# Foundations of Math



I have attended professional development courses in the past for math and this has been the best so far. I am a high school teacher and I left with examples of different ways to teach concepts. This course was great.

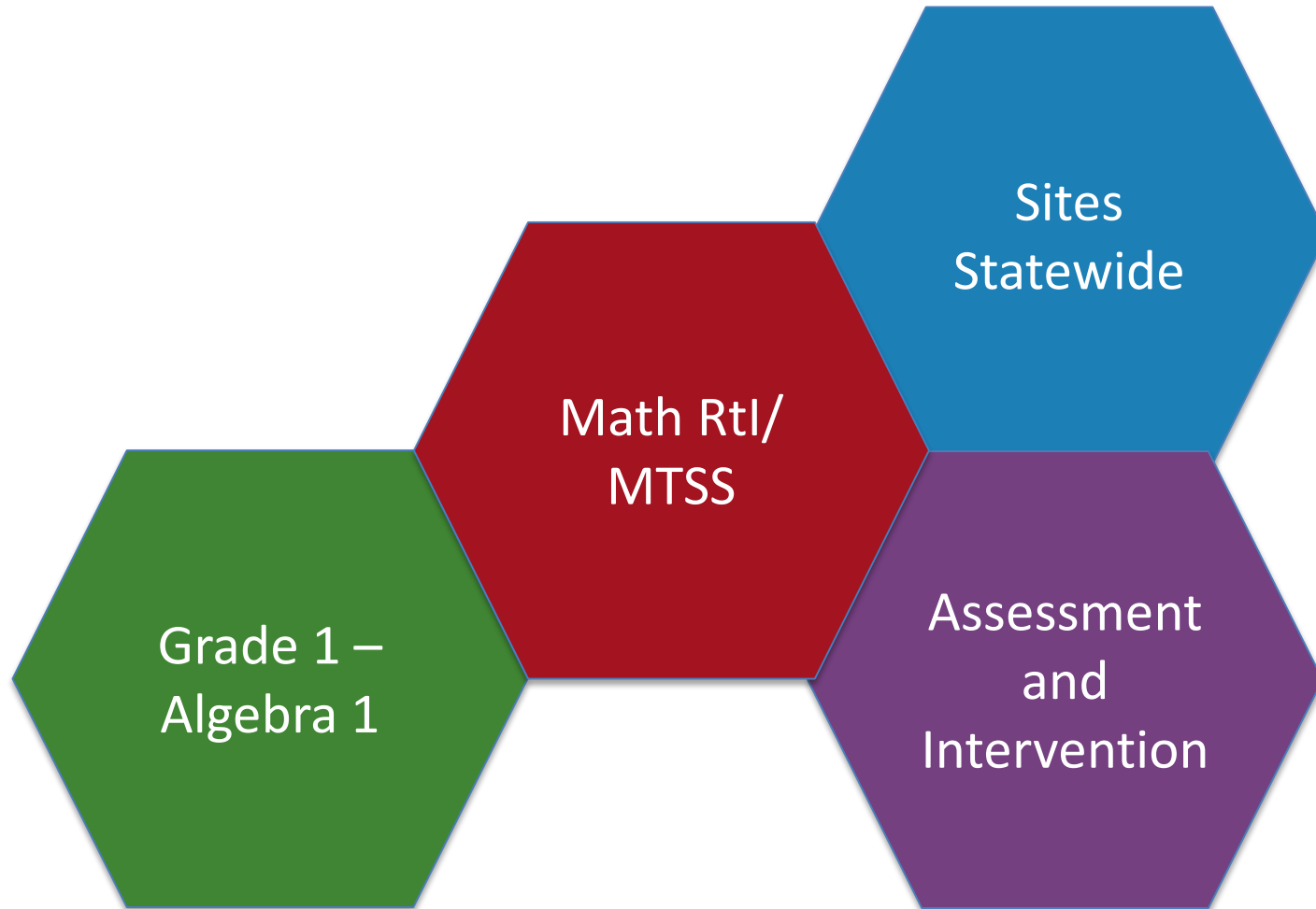
This has the potential to be a phenomenal opportunity for teachers... There are so many professionals in my district who I would send to this PD!

This was an eye opener for me... I wish our whole district could attend.

This has the potential to be a phenomenal opportunity for teachers... There are so many professionals in my district who I would send to this PD!

Not only did this help me understand math better... it really helped me understand teaching math more.

# Delta Math



Grade 1 –  
Algebra 1

Math RtI/  
MTSS

Sites  
Statewide

Assessment  
and  
Intervention

General/Special

What is  
“integrated”?

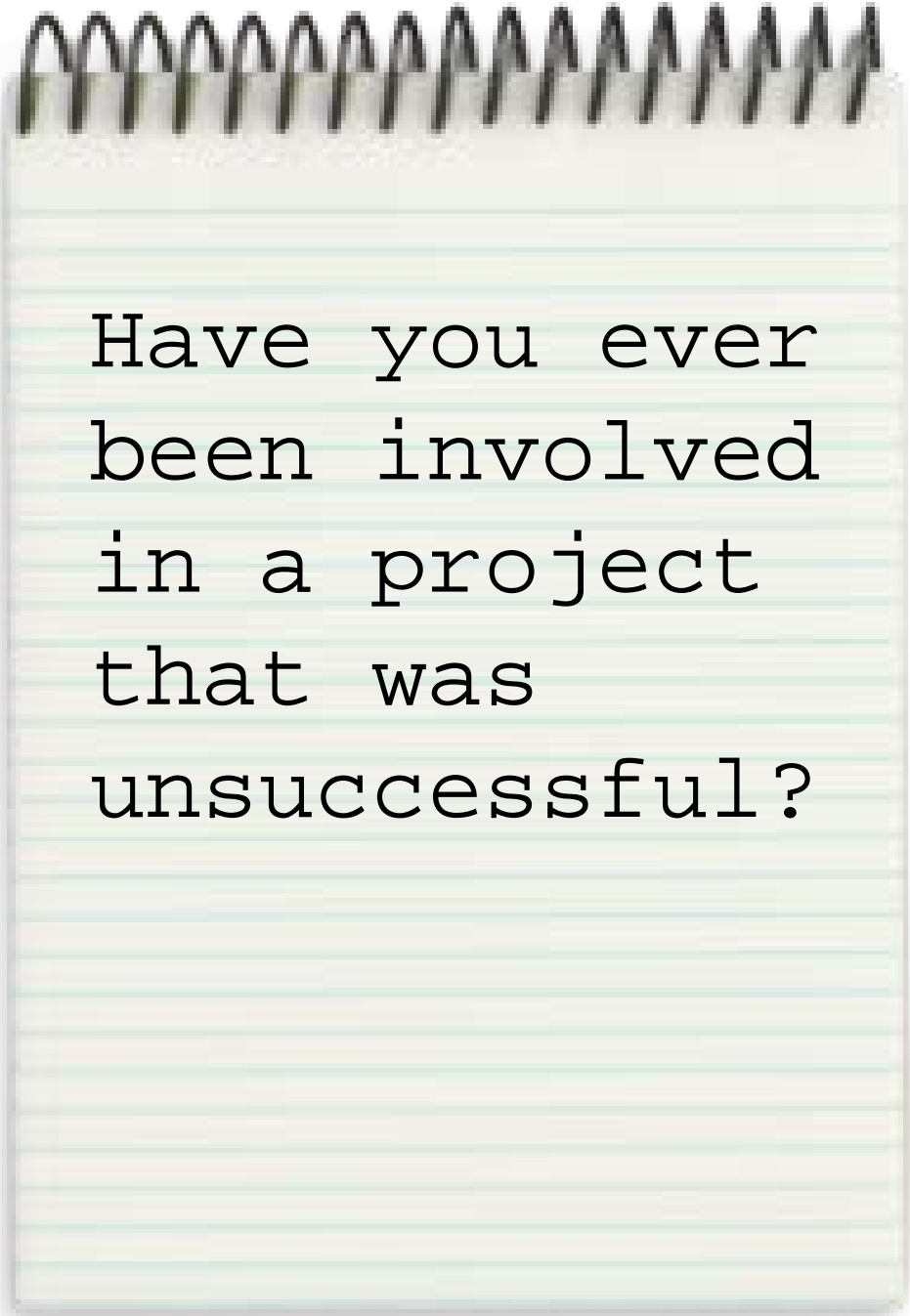
Staff/Students

Resources



“Students can’t benefit from interventions that they don’t experience.”

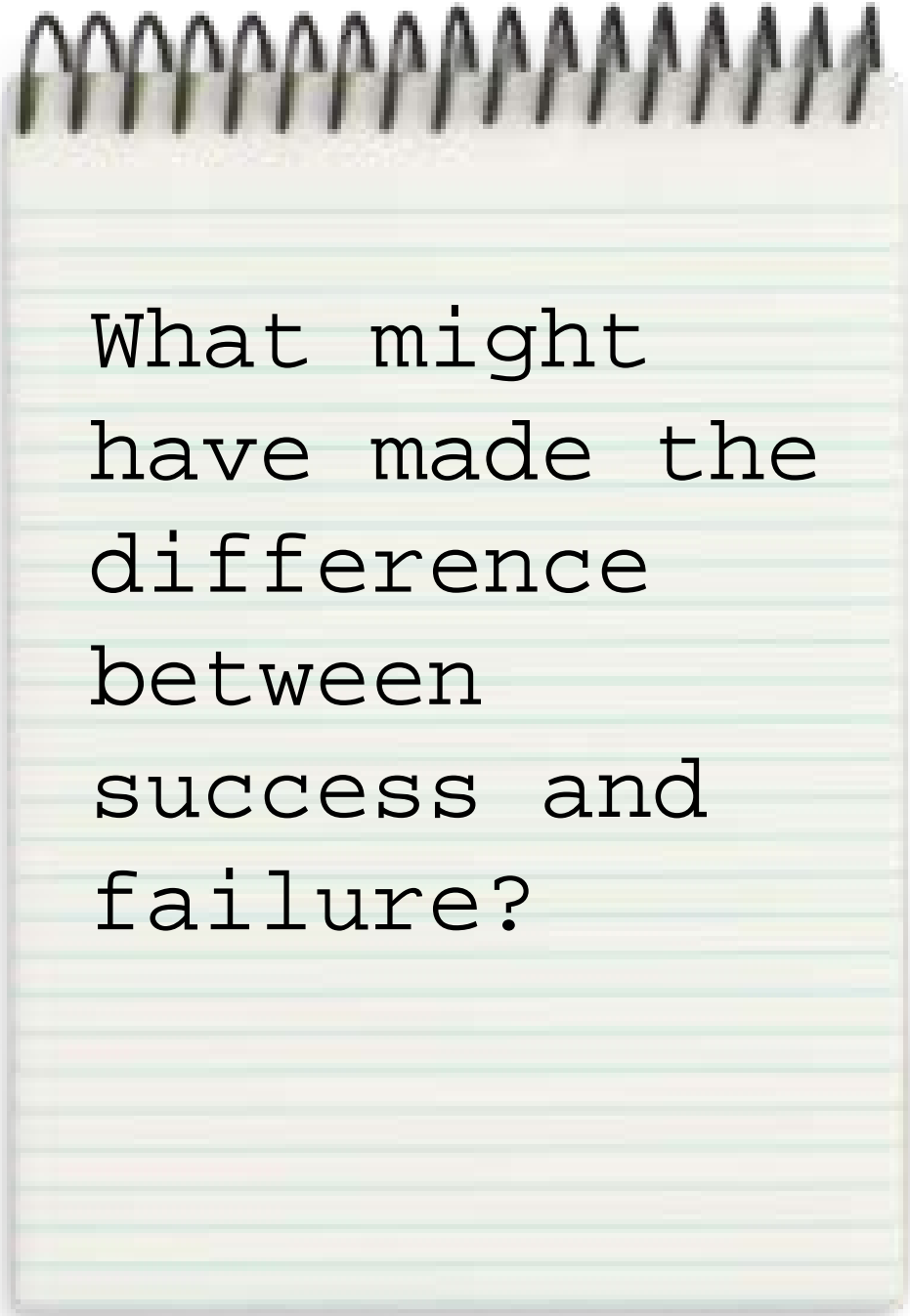


A spiral-bound notebook with a silver metal spiral binding at the top. The notebook is open to a page with light blue horizontal lines. The text is written in a black, monospaced font. The question is centered on the page and spans five lines.

Have you ever  
been involved  
in a project  
that was  
unsuccessful?

A spiral-bound notebook with a silver metal spiral binding at the top. The notebook is open to a page with light blue horizontal lines. The text "Why was it unsuccessful?" is written in a black, monospaced font on the page.

Why was it  
unsuccessful?

A spiral-bound notebook with a silver metal spiral binding at the top. The notebook is open to a page with light blue horizontal lines. The text is written in a black, monospaced font. The question is centered on the page.

What might  
have made the  
difference  
between  
success and  
failure?

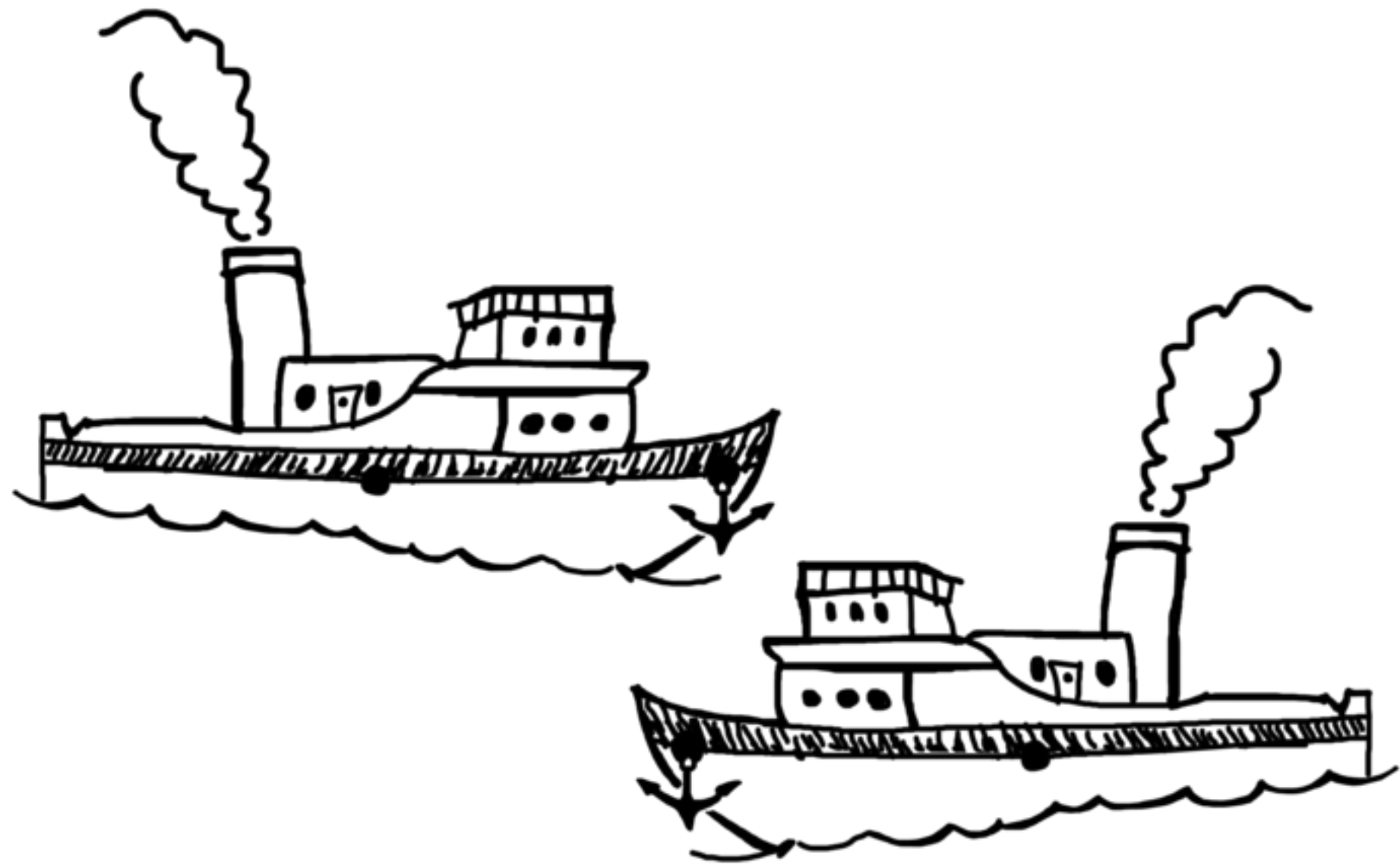
# General Education







Have I experienced the  
power of collective  
efficacy?











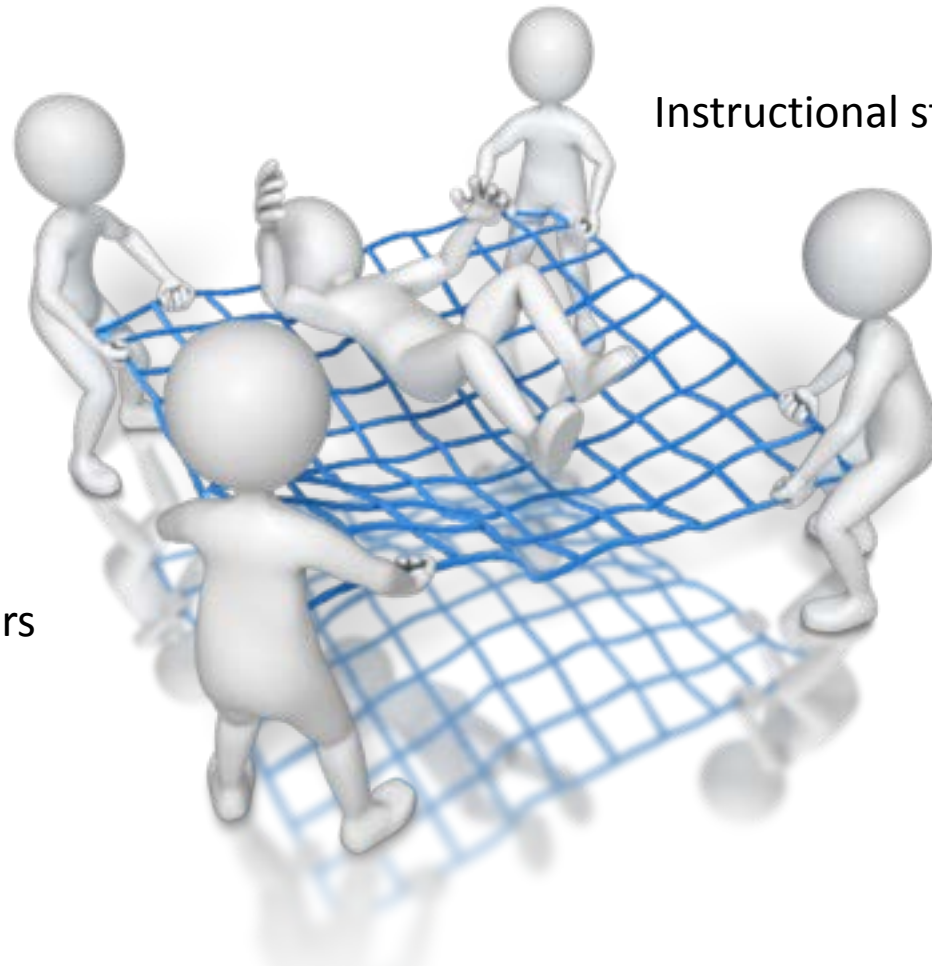
**Data**

General education

Instructional staff

Special education

Administrators



The best intervention is good instruction.



“You can’t take students where  
you can’t go.”

- Dr. Chris Cain

Proactive and  
Intentional

What can  
special  
education  
administrators  
do?

Don't skip  
steps

Be patient

**ACCESSIBLE  
MATH**

**ACCESSIBLE**

**MATH**



14% success in \_\_\_\_ years.

versus

\_\_\_\_ success in \_\_\_\_ years.

14% success in 7 years.

versus

\_\_\_\_\_ success in \_\_\_\_\_ years.

14% success in 7 years.

versus

80% success in \_\_\_\_ years.

14% success in 7 years.

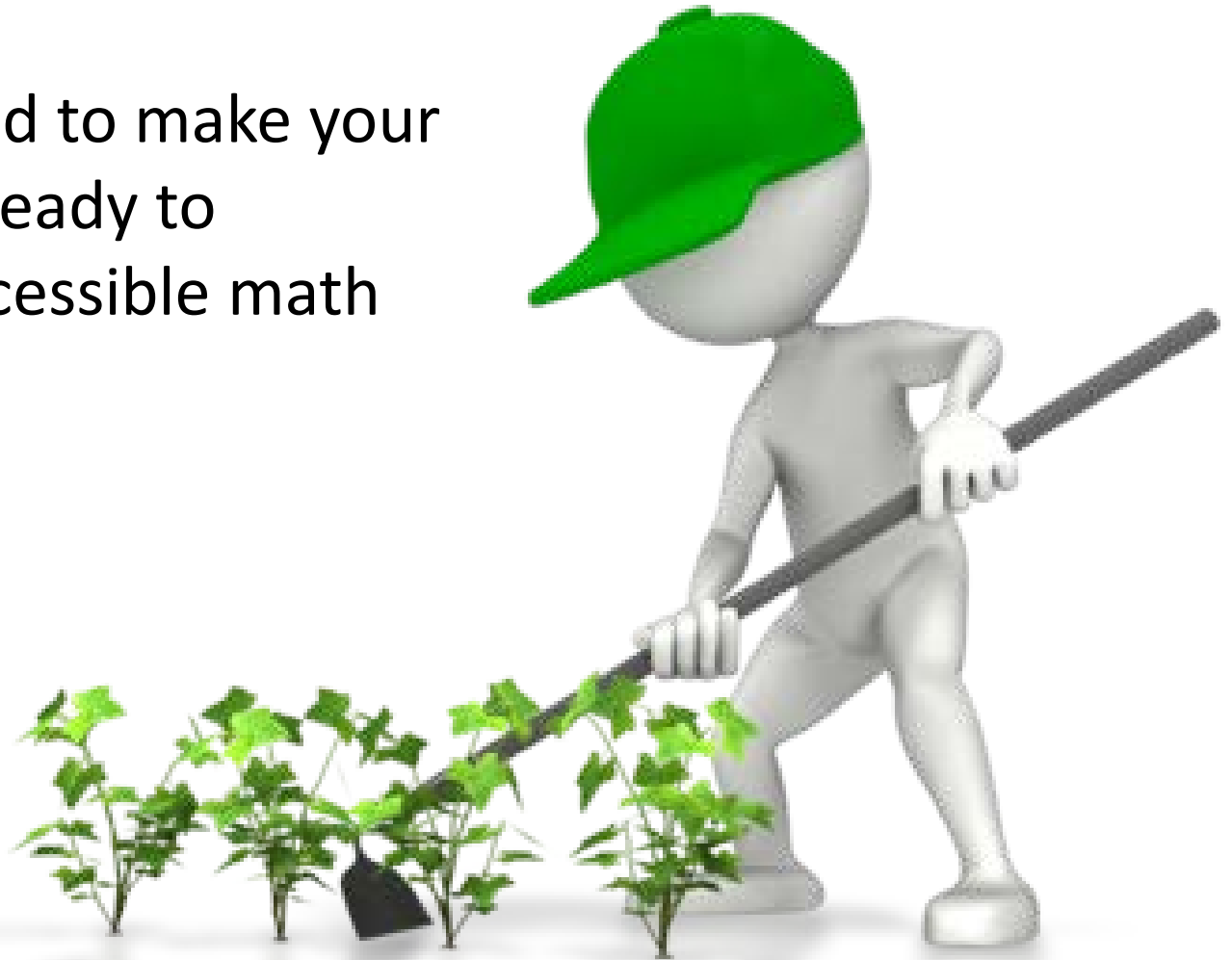
versus

80% success in 3 years.

“A teacher should only be asked to attend a workshop, participate in a professional learning community, partner with a coach, or be observed by a principal, if those events will have an unmistakable impact on teaching and student learning.”

Jim Knight, *Unmistakable Impact*

What is needed to make your environment ready to implement accessible math instruction?



# Active Implementation Frameworks

Usable  
Interventions



Teams



Drivers



Stages



Improvement  
Cycles



# Active Implementation Frameworks

Usable  
Interventions



Teams



Drivers



Stages



Improvement  
Cycles



Knowable, Usable, Doable



# Active Implementation Frameworks



Knowable, Usable, Doable

Support full effective and sustained use of the intervention

# Active Implementation Frameworks

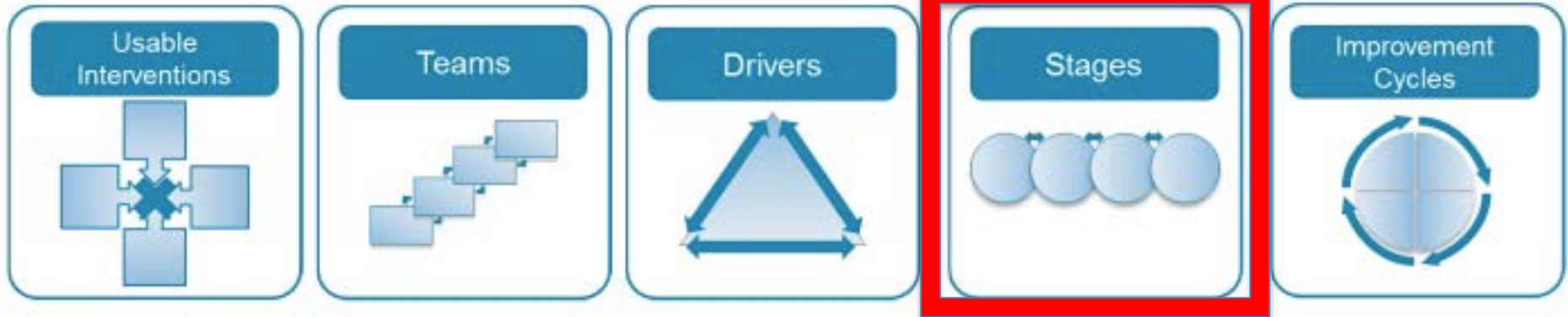


Knowable, Usable, Doable

Support full effective and sustained use of the intervention

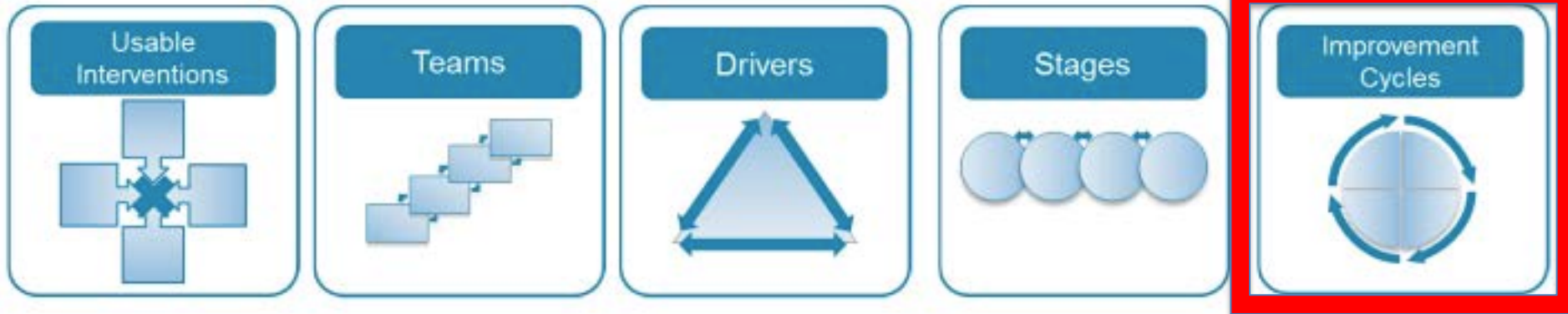
Key components of capacity that enable the success of the intervention

# Active Implementation Frameworks



Exploration, installation, initial implementation, full implementation

# Active Implementation Frameworks



Exploration, installation, initial implementation, full implementation

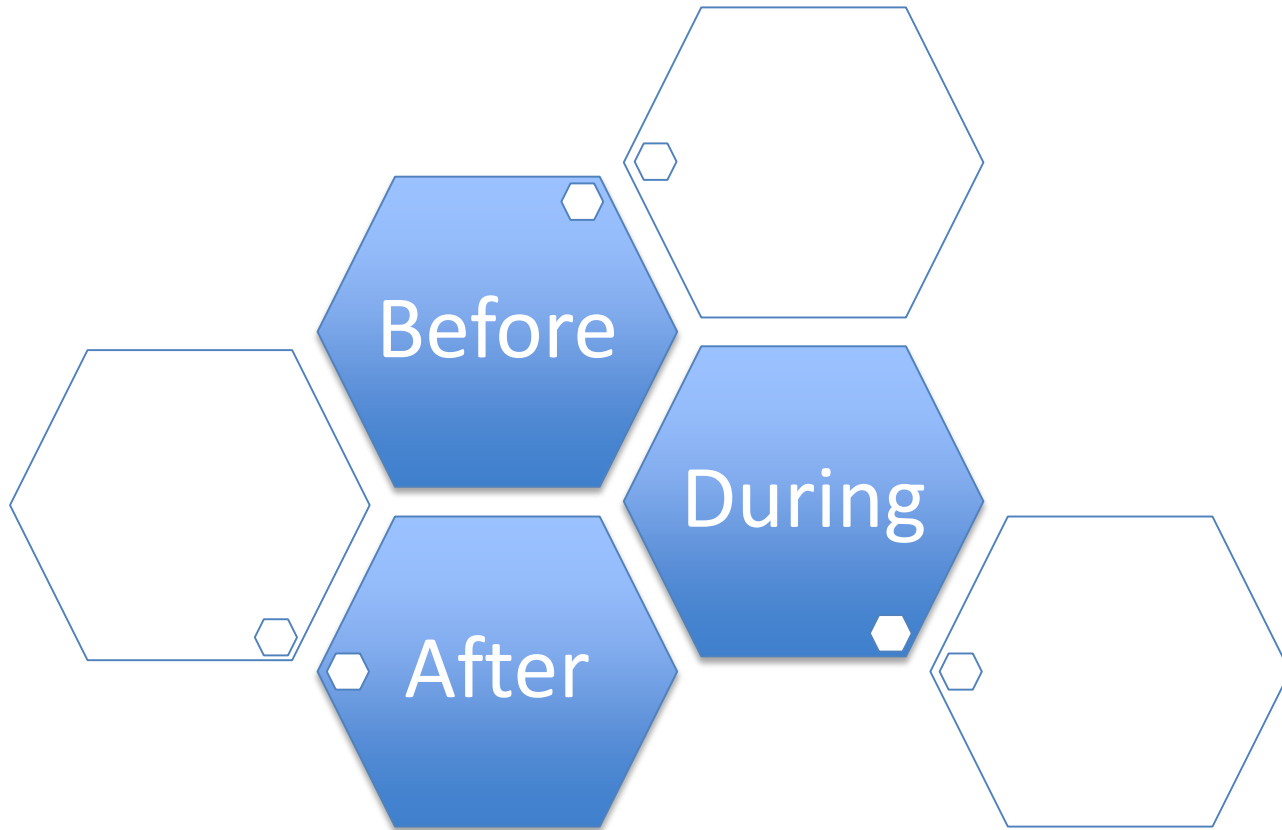
Plan, do, study, act

How do  
you get  
started?

Go through  
all the steps

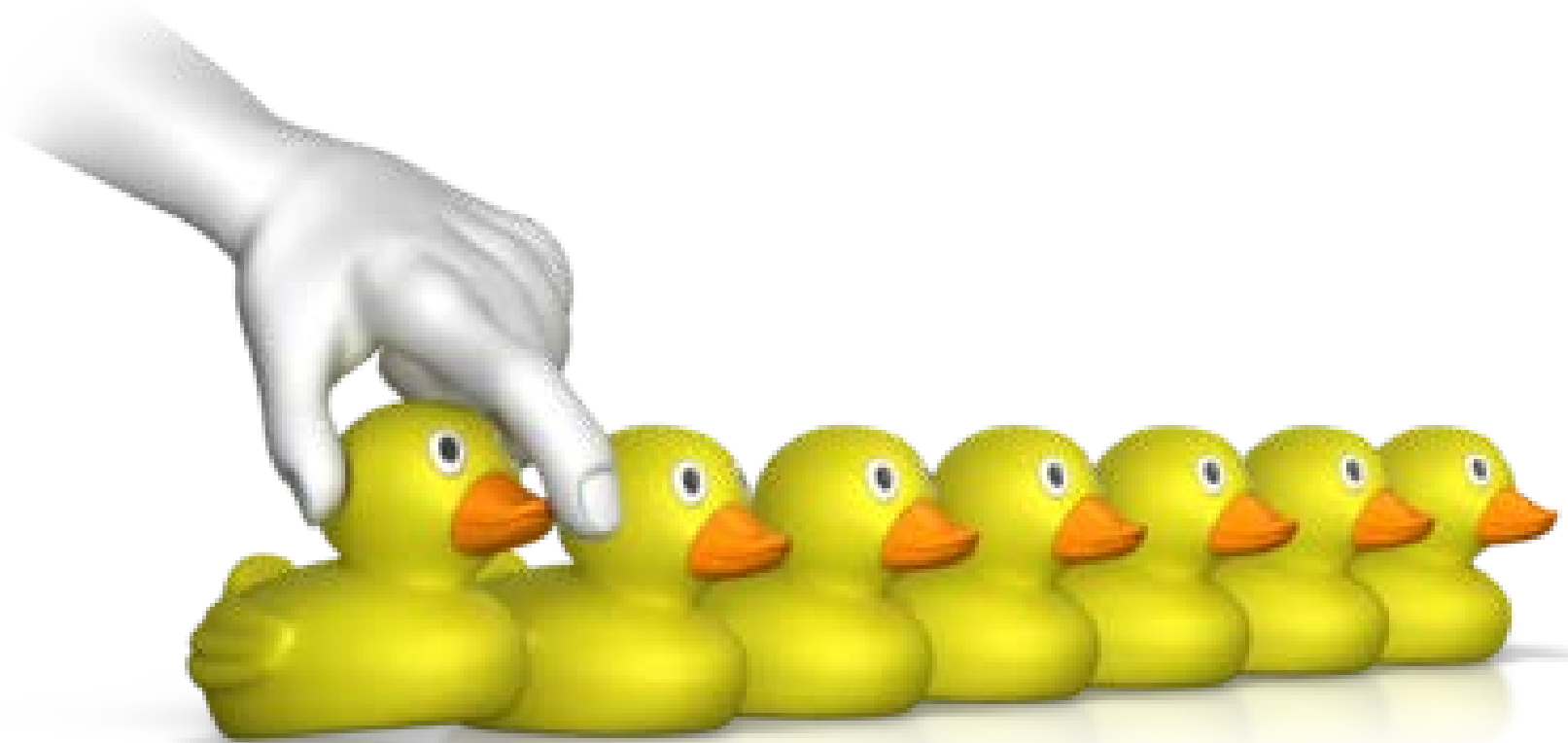


# Administrator Role



# Radical. Yet completely logical.

The new Mac Pro looks unlike any other computer. Because it is unlike any other computer. By rethinking the architecture of its internal components, we had the chance to rethink the entire enclosure. And since everything centers around a unified thermal core, we were free to design a much leaner, lighter, quieter, and far more streamlined structure. Its unique design and beautiful finishes are executed to an extraordinary degree of precision. And at just 9.9 inches tall with a diameter of just 6.6 inches, it's a pro desktop computer that can actually sit on your desk.



**BEFORE** implementation





**DURING training**



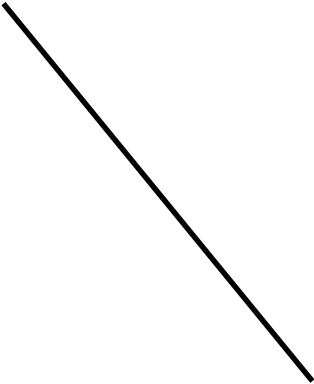
**AFTER training**



Research existing products and services

Math Instruction

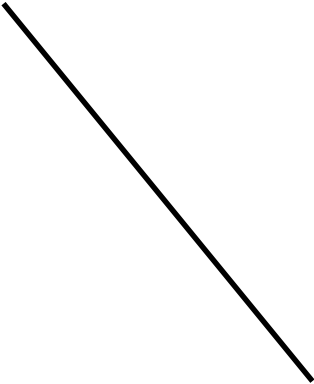
Facilitator Network



Attend or support a training

Contact Kate

Attend an (Mi)<sup>2</sup> event

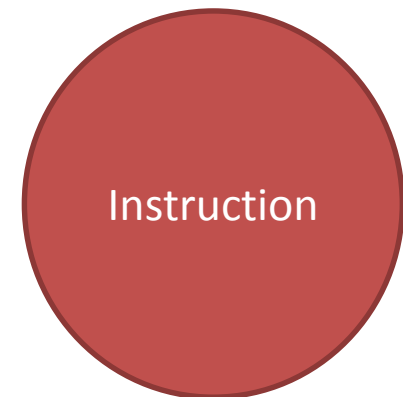
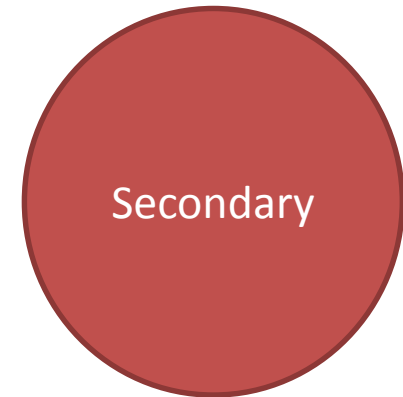
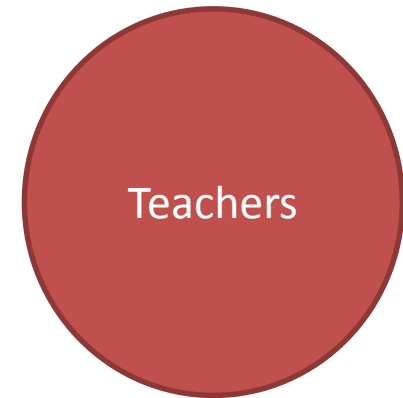


# Teaching Mathematics to Students with Special Needs in the General Education Classroom (6-12)



Pre-Conference Institute

TCAPS – West High School  
Traverse City, MI  
July 28, 2015



# Addressing Learner Variability in the Mathematics Classroom: A Statewide Initiative



## Breakout session

TCAPS – West High School  
Traverse City, MI  
July 29, 2015

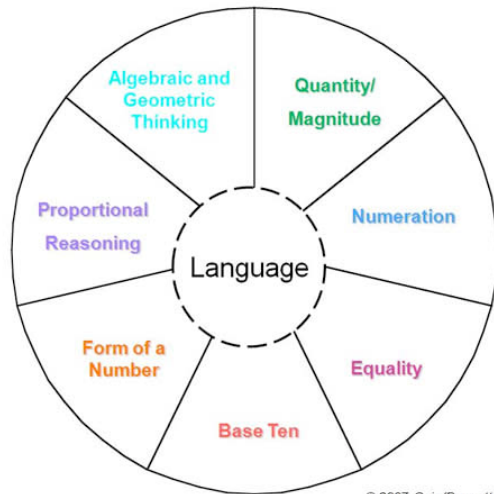
Also MEMSPA Conference  
Kalamazoo, MI  
December 2015

Math  
Educators

K-12

Programs,  
services,  
previews

# Foundations of Math



© 2007 Cain/Doggett/Faulkner/Hale/NCDPI

All K-12 educators

Math content

Working with students with special needs

## 5-Day Training

Hagerty Center  
Traverse City

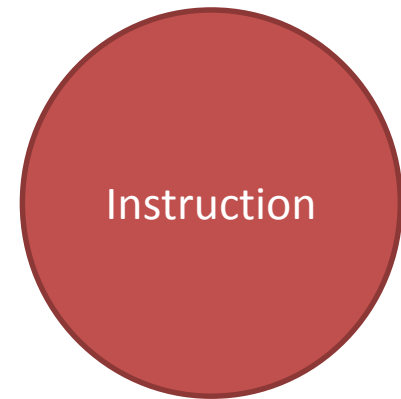
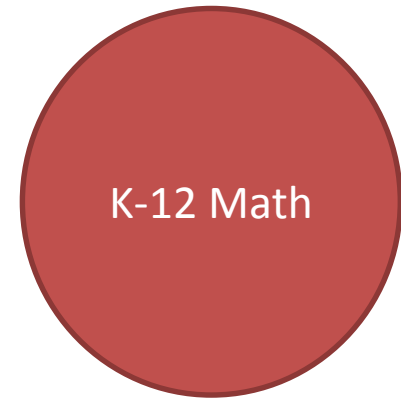
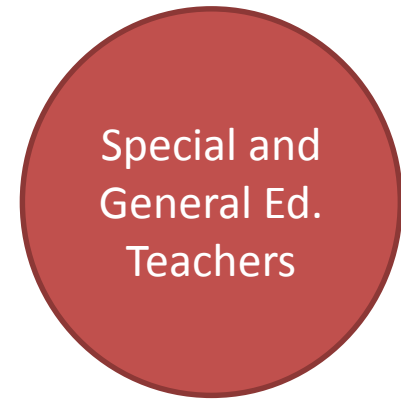
Aug. 10-11, Sept. 21,  
Oct. 19-20

Novi Crowne Plaza  
Novi

Aug. 13-14, Sept. 23,  
Oct. 22-23



# Making Mathematics Meaningful through Collaboration



Conference

Macomb ISD  
Clinton Twp., MI  
September 28, 2015

# Strengthening Mathematics Understanding and Instruction for Students with Disabilities

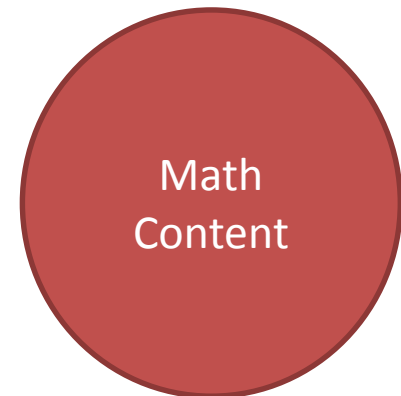
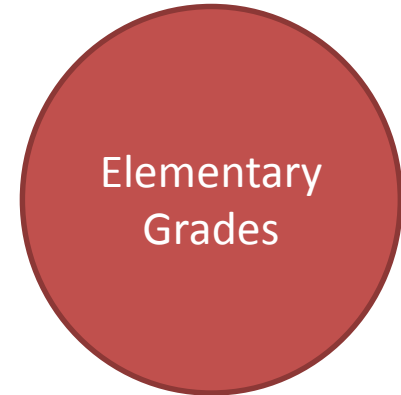
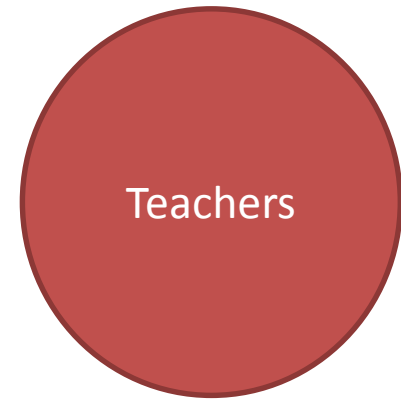


MICHIGAN'S INTEGRATED  
MATHEMATICS INITIATIVE

## Breakout Session

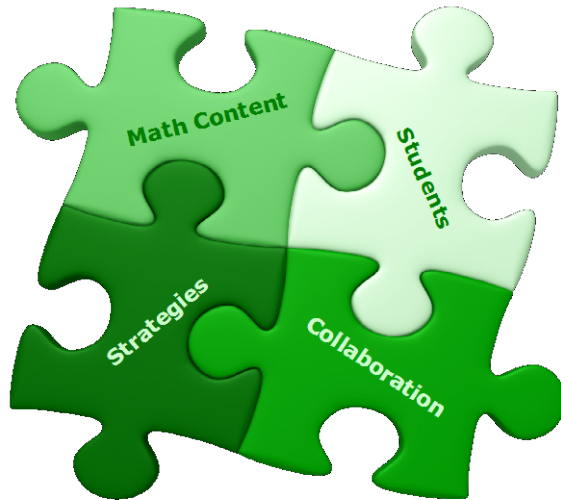
St. Clair  
21<sup>st</sup> Century Symposium  
September 1, 2015

Grand Rapids  
AssisTechKnow  
October 15, 2015



# ENHANCING MATHEMATICS INSTRUCTION FOR STUDENTS WITH LEARNING DIFFICULTIES

ALGEBRAIC EXPRESSIONS & EQUATIONS (GRADES 6-8)



Developed by  
**EDC** Learning  
transforms  
lives.  
Education Development Center, Inc.

With Funding Support from  
**(Mi)<sup>2</sup>**  
MICHIGAN INDEPENDENT  
MATHEMATICS INITIATIVE

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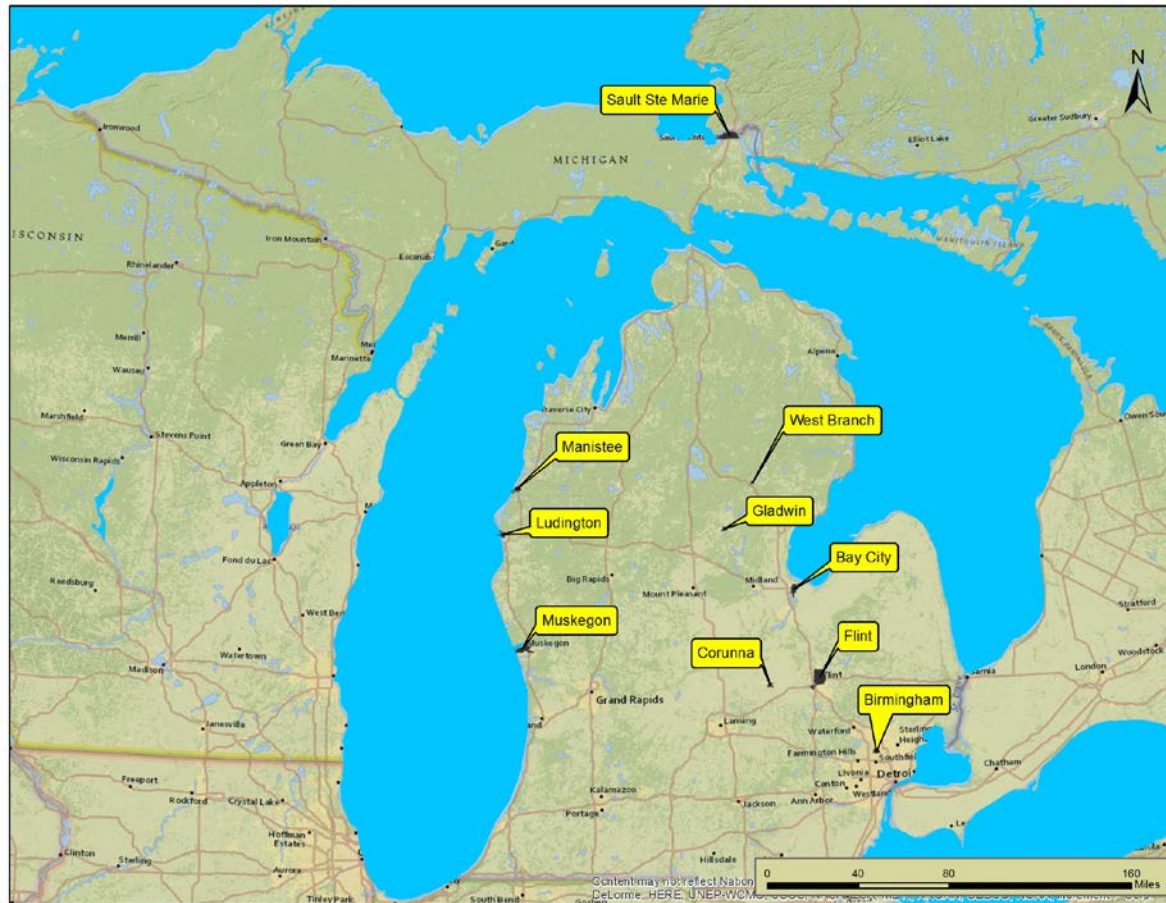
Statewide Implementation  
[info@misquared.org](mailto:info@misquared.org)

Middle  
School  
Teachers

Teams of  
General  
and Special  
Ed.

Focus on  
Instruction

# Enhancing Mathematics Instruction for Students with Learning Difficulties



# Technical Assistance to Sites

- Connect to Resources
- Implementation Assistance



# Website

- Newsletters and subscription
- Event information and registration
- Contact us

[mi2.cenmi.org](http://mi2.cenmi.org)





Find Us

[mi2.cenmi.org](http://mi2.cenmi.org)

[kate.fanelli@misquared.org](mailto:kate.fanelli@misquared.org)

Contact Us

