Developing a Positive Mathematics Identity

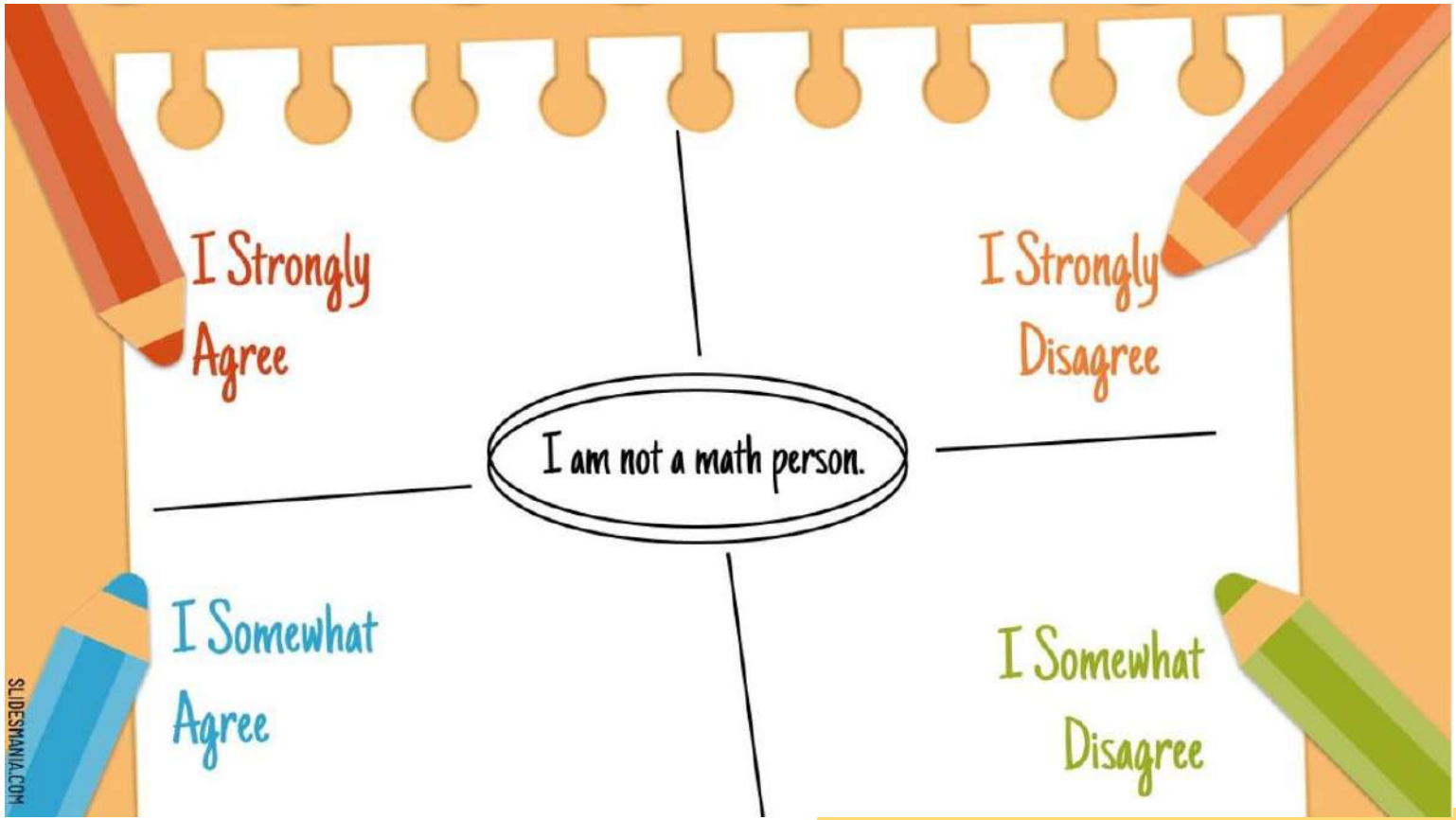
Zero to Five Virtual Training Event, Griffin-Spalding County Schools

January 27, 2021

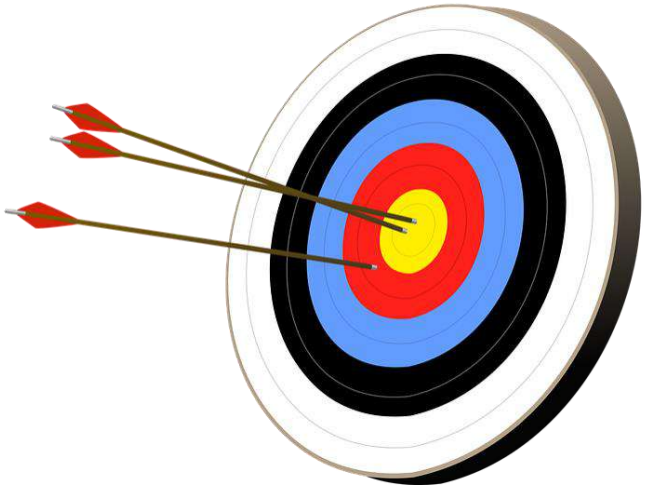
Hello! I’m...

- Dr. Pamela Seda, Math Coordinator for Griffin-Spalding County Schools
- ... a wife of 31 years
- ... a mother of 4 adult children
- ... a math educator with over 30 years of teaching experience.

How well do you identify with this statement?



Goals for Today



Participants will be able to ...

- Explain what is a mathematics identity.
- Explain why a positive mathematics identity is important?
- Identify ways to develop a positive mathematics identity.

01

What is mathematics identity?

Did you know?

We are all math people.

Did you know that babies brains are wired for math?

A video of a puppet show started with two dolls. Before the show ended, a doll was removed and then the infant's vision was blocked with a screen. When the screen was taken away, either one doll was left, as expected, or two dolls, which would not be mathematically correct. The study showed that infants looked at the screen longer when the number of dolls was not mathematically correct.

Live Science

Did you know?

Babies know math.

Another study showed that babies have the ability to recognize and match numbers. When they heard two voices, they gazed at an image with two faces. When they heard three voices, they looked at an image with three faces.

livescience.com

5-year olds have innate math ability.

A Harvard study illustrated that five-year-olds can perform relatively complex math operations such as figuring out if the sum of two numbers is greater than or less than a third number.

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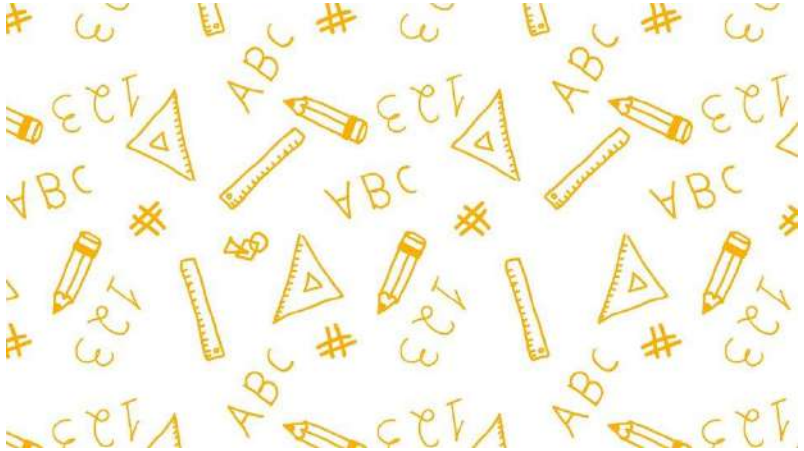
What is mathematics identity?

If kids have innate math abilities, what's the problem?

Students learn to see themselves as capable or incapable of succeeding as they begin to internalize what it means to do mathematics based on their learning experiences in school.

02

Why is a positive mathematics identity important?



Did you know?

Young children tend to internalize their teachers' attitude towards mathematics.

Mathophobic teachers may be unaware that just a lack of interest in mathematics can be hurtful.

Using traditional instructional methods can be even more damaging than being mathphobic.

Students learn best by "doing" mathematics, not memorizing facts or steps given to them by the teacher.

Focusing on task performance over emotional safety may lead to future math anxiety.

The vicious cycle of high pressure tasks, unimaginative instruction, and negative teacher attitudes combine to create the next "I hate math" generation.

Mathematics is the study of ...

A. Arithmetic
B. Numbers
C. Patterns
D. Shapes

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Doing mathematics is ...

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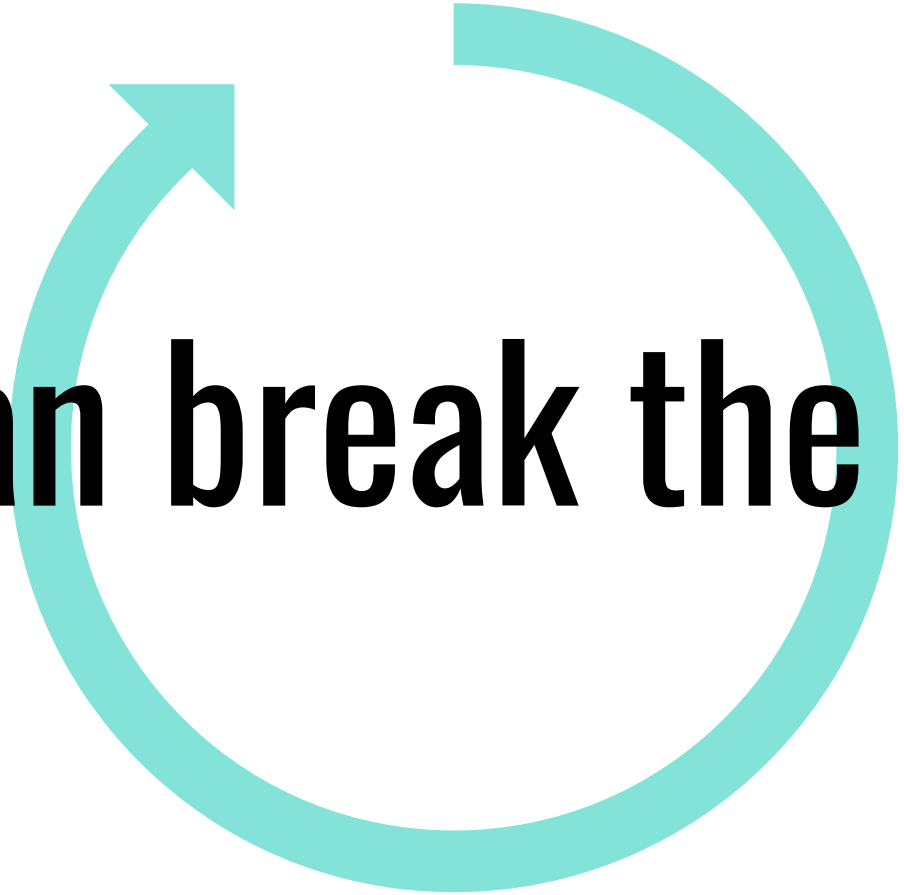
Doing mathematics is ...

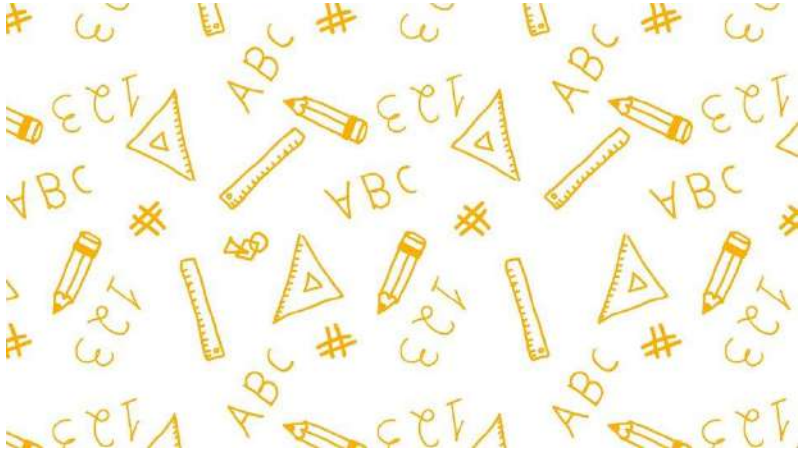
- Noticing patterns
- Describing patterns
- Generalizing patterns

We can break the cycle!

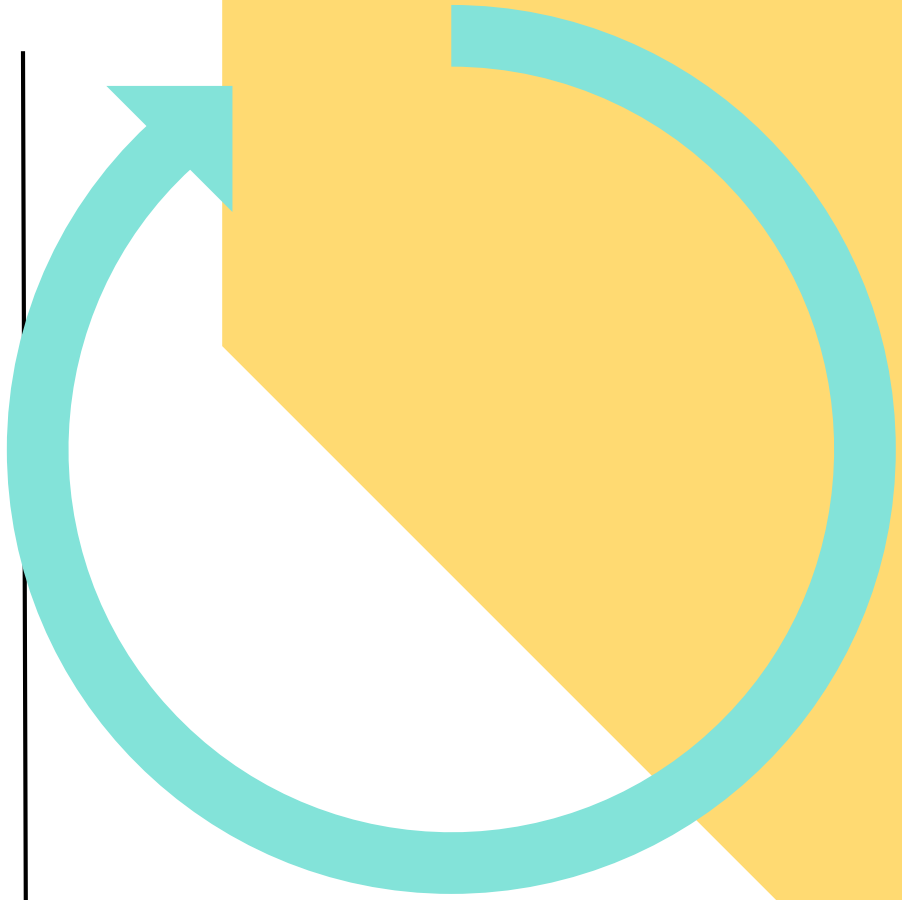


03

Developing a positive mathematics identity



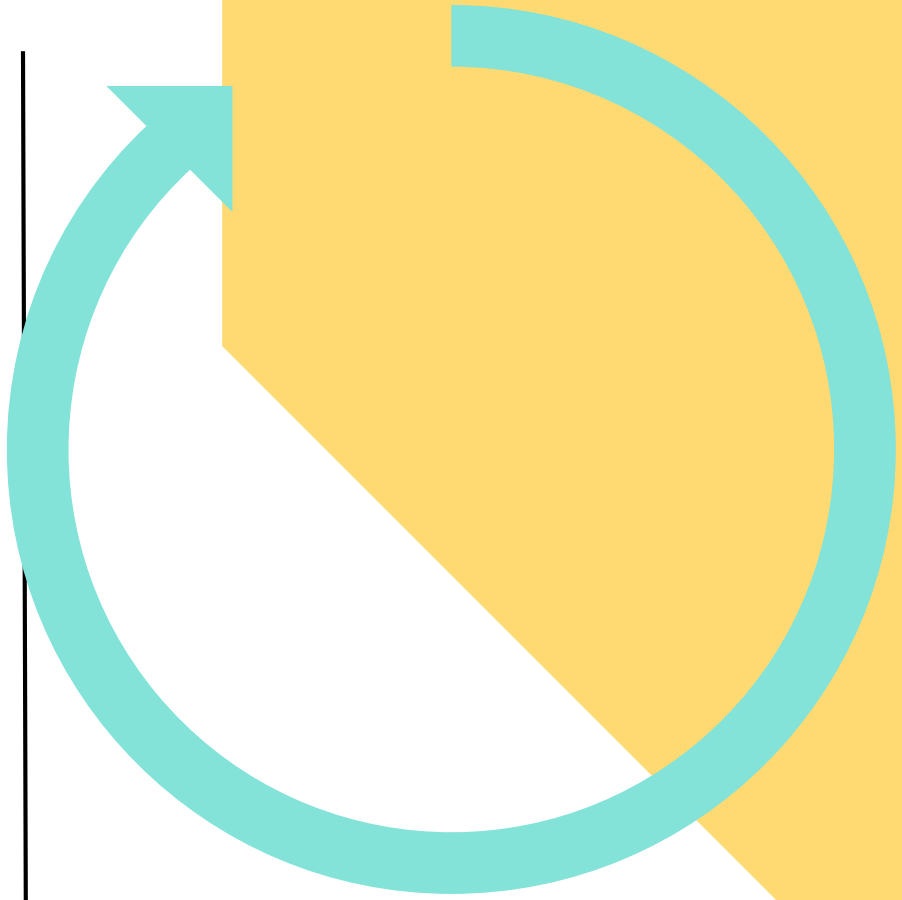
Steps to Breaking the Cycle



1. **Acknowledge your own mathphobic feelings.**
   Identifying any negative feelings related to mathematics teaching and learning and reflecting on their source can be liberating.

2. **Redefine yourself as a competent mathematician.**
   The same teachers who are quick to say, “I stink at math” are the ones who also successfully use mathematics in everyday life, such as cooking, playing cards, shopping, and home maintenance. All of these real-world activities are mathematically based and use mathematical concepts and processes that are developmentally appropriate for early childhood.

Steps to Breaking the Cycle



3. **Examine how your mathphobic feelings may have influenced your past teaching practices.**
   - Did I set goals that were mathematically appropriate?
   - Did I use methods that engaged and inspired my students?
   - Did I embrace potentially rich mathematical moments that would deepen my students' intuitive knowledge or did I shy away from them?
   - Did I model the importance of mathematics to everyday life to my students?

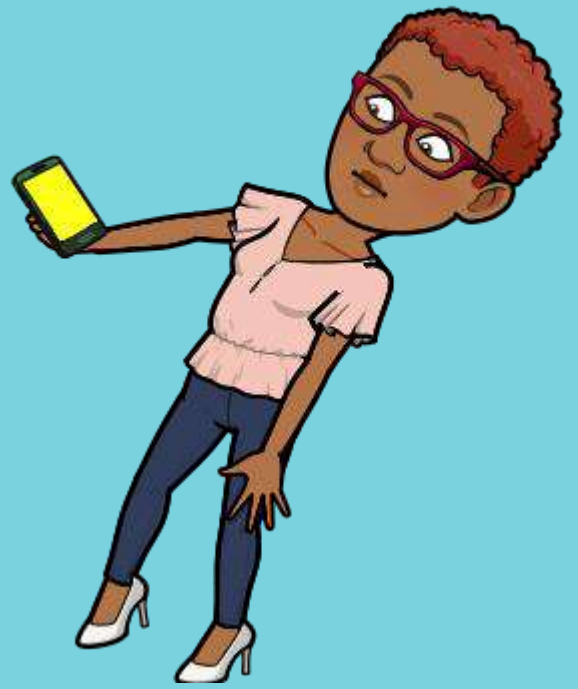
4. **Create a new vision for early childhood mathematics.**
   - View mathematics as a process rather than a rigid set of facts to be memorized.
   - Capitalize on children's natural tendency to use mathematics to make sense of their physical and social world.
   - Present mathematical activities in multiple ways, throughout the day and across the curriculum.

Where do I go to find appropriate goals and activities?

- Math Placemat
- Dot Cards for Subitizing

You are molding your kids' math identities!

- What did you find most interesting about this session?
- What did you find most surprising about this session?



Thank you!

Do you have any questions?

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Credits.

Source: What we want young children NOT to learn by Alyse C. Hachey