BetterLesson

BetterLesson Professional Learning Webinar

Creating Positive Learning Experiences in Math

Ohio Educational Service Center
Date: June 25th, 2024
Lisa Fik

educational service center of Central Ohio

ESC ASSOCIATION

Ways to Engage with Us Today

Chat Box

Share your thoughts!
Make sure the chat box says Send to 'Everyone'.

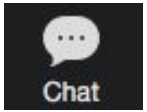
Q & A

Use the Q&A button to add your questions.

Handout

Click on the handout shared in the chat.
Slides will be shared with the recording.

Welcome!



Welcome!

Share in the chat:

- **Where are you joining us from today?**
- **What is your current role?**

Your Hosts

Annika Moore
Math Consultant
DEW

Lisa Fik
BetterLesson
Instructional Coach

BetterLesson

educational service center of Central Ohio

ESC ASSOCIATION

Aligned & Tailored for Ohio ESC Partnership

Aligned

Our partnership is specifically designed to amplify the impact of other state-wide infrastructure and initiatives.

Our coaches will be familiar with key efforts, including:

- Materials Matter
- HQIM-related work streams with EdReports & Instruction Partners
- Ohio Standards for Math Practice

Tailored

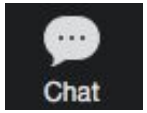
Our team has worked with leadership from the ESC of Central Ohio, OESCA, and the Department of Education to tailor our workshop, coaching, and learning walk content to the unique needs of ESC Math Specialists

BetterLesson

educational service center of Central Ohio

OESC ASSOCIATION

Welcome!



Reflect on what math means to YOU.

Click on the link in the chat to add a word or phrase.

Math is…

Our Series: Elements of Student-Centered Math Instruction

Goal

Examine the importance of providing grade-level, high-quality instruction while being responsive to students' diverse backgrounds and experiences

DEFINE	EXPLORE	BUILD	TRY, MEASURE, LEARN
Components of identity and belonging in math	How to build positive learning experiences in math class.	A strategy into your practice.	

Our Webinar Series: Elements of Student-Centered Math Instruction

1. Creating Positive Learning Experiences in Math
2. Developing Mathematical Fluency
3. Using Visual Representation to Support Math Reasoning
4. Developing Multiple and Varied Checks for Conceptual Understanding

Qualities of a Powerful Math Classroom

The Content

Students have opportunities to experience coherent and meaningful disciplinary ideas.

Cognitive Demand

Students engage in productive struggle, grappling with challenging problems.

Equitable Access to Content

Classroom structures invite and support active engagement of all students.

Agency, Authority, Identity

Students provided opportunities to contribute to discussions and build on others' ideas.

Formative Assessment

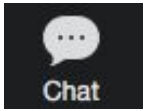
Instruction "meets students where they are" and gives them opportunities to deepen understanding.

Define

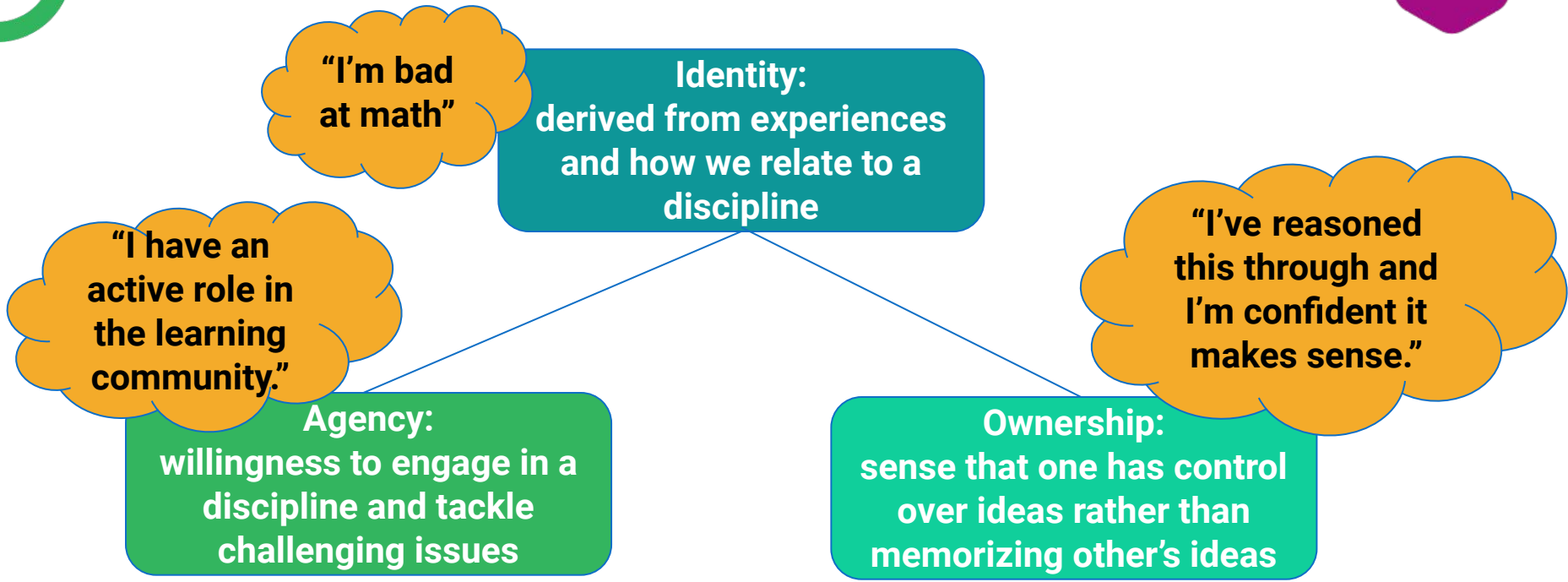
Identity and Belonging

Who Belongs?

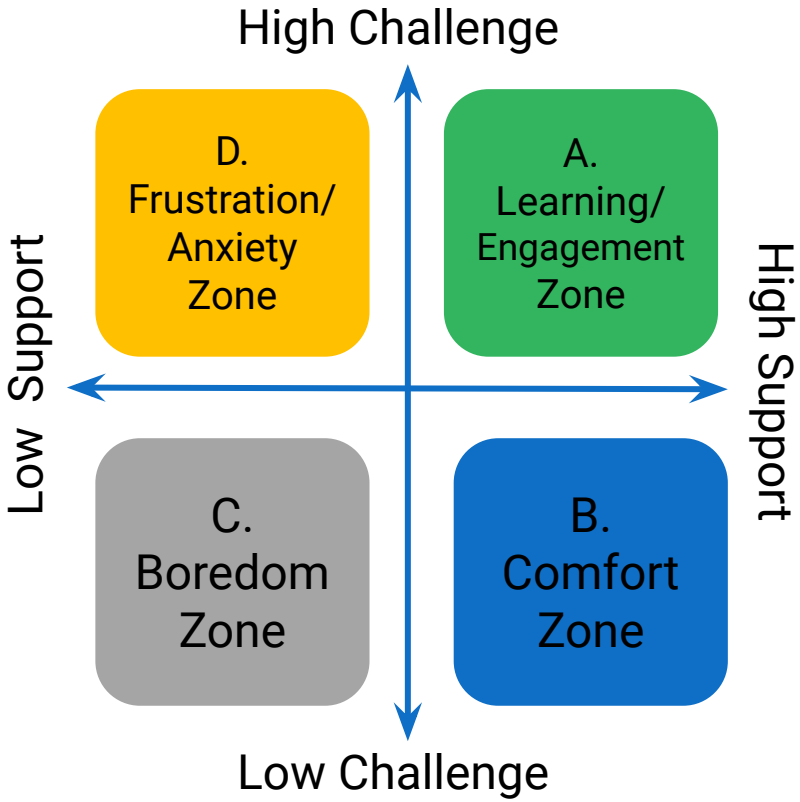
1. **Picture a country club** near the area you live in or from a TV show or movie. Drop in the chat a **description of who belongs** to that club.
2. Think about a **group to which you belong**. What **words** come to mind when you think about **belonging**?

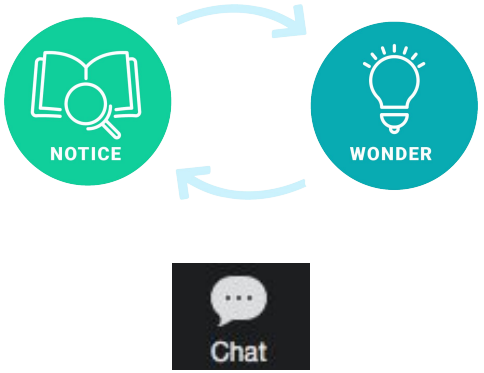


Building Agency, Ownership, Identity



Balancing Challenge and Support

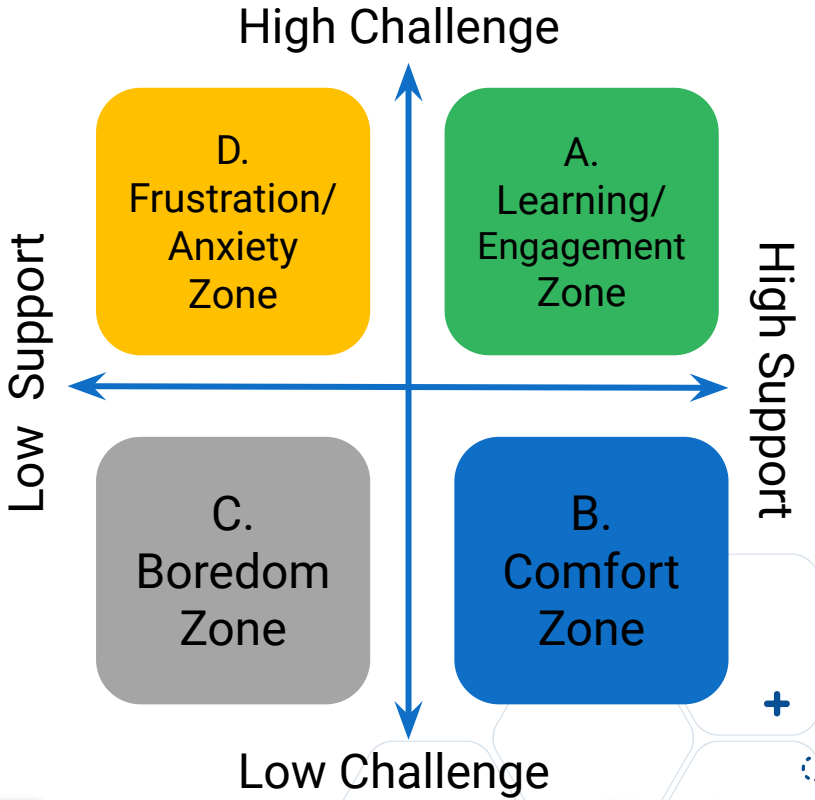




Balancing Challenge and Support

Scaffolding *Up* provides high levels of support for students accessing high-challenge content by

- Valuing students' resources for learning
- Developing a strong community of learners
- Engaging students in rigorous curriculum



WIDA, Adapted from Mariani 1997

“When inclusive education is fully embraced, we abandon the idea that children have to become ‘normal’ in order to contribute to the world. We begin to look beyond typical ways of becoming valued members of the community, and in doing so, begin to realize the achievable goal of providing all children with an authentic sense of belonging.”

-Norman Kunc

Define

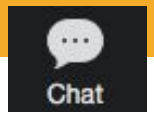
Shifting Beliefs

Reflect and Connect

“Mathematics, more than any other subject, has the power to crush students’ confidence.”

Jo Boaler

Read each quote. REFLECT on how these quotes CONNECT to your experience as a math learner or a learner in a community.



"Unfortunately, so many people have experienced a mathematics that is devoid of humanity."

Sam Shah

Academic Safety

Effective Facilitation

Quality Tasks

Necessary Conditions
Geoff Krall

Considerations for Selecting Math Tasks

Alignment and Relevance

Connects to learning goals, student experiences and interests

Connections to Prior Knowledge

Builds conceptual understanding and connections to prior knowledge

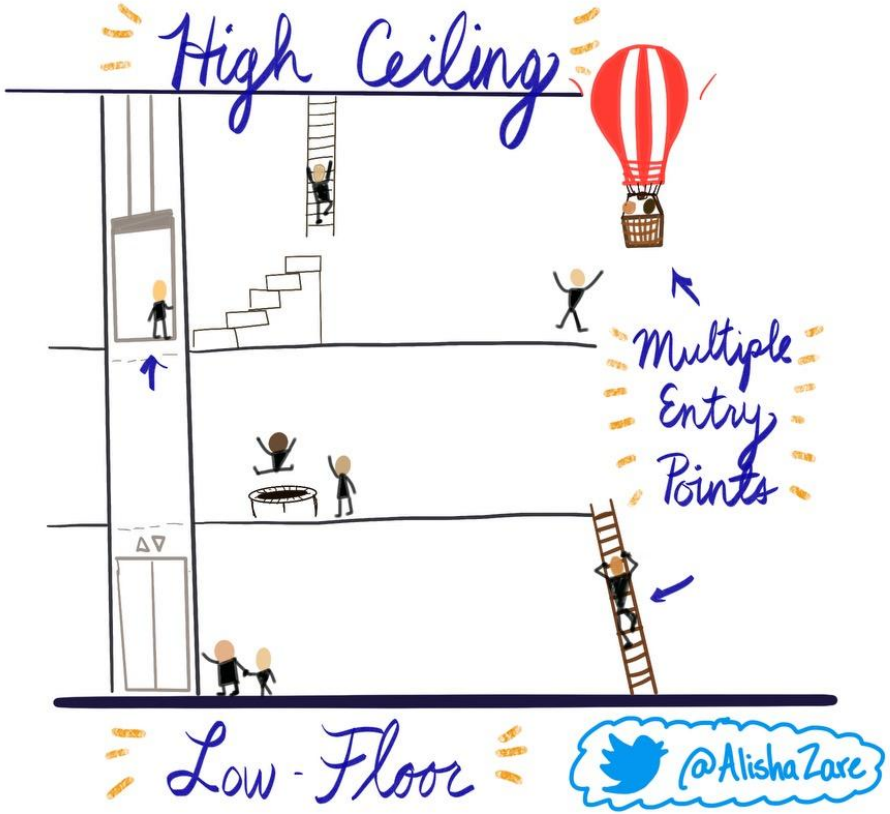
Reasoning and Problem Solving

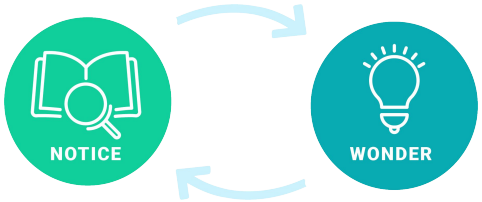
Includes appropriate levels of cognitive demand to be intellectually engaging

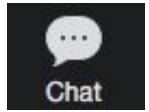
Flexibility

Flexibility in strategy and solutions, along with the ability to differentiate and improve accessibility

Low Floors and High Ceilings







Value of Quality Math Tasks

"Quality tasks provide opportunities for students to think deeply about mathematics, to make connections among mathematical ideas, and to develop a robust understanding of important mathematical concepts...By selecting quality tasks, teachers provide students with the opportunity to engage in mathematical practices such as problem solving, reasoning, communicating, and making connections"

Implementing Standard-Based Mathematics Instruction

Levels of Cognitive Demand

Developed based on the kind and level of thinking to solve the problem.

Lower-level Cognitive Demand

- Memorization
- Procedures without connections

Higher-Level Cognitive Demand

- Procedures with connections
- Doing mathematics

Keys to Belonging in Math

Provide time for students to develop and express their ideas.

Provide tasks that require productive student discussions.

Ensure all students have their voices heard.

Shifting Beliefs in Math

Beliefs about the teacher-student relationship

Beliefs about what math is

Beliefs about ourselves as mathematicians

Beliefs about how people learn math

Explore

Experience a Strategy

Shifting Teacher and Student Beliefs

Beliefs about the teacher-student relationship

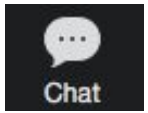
Beliefs about what math is

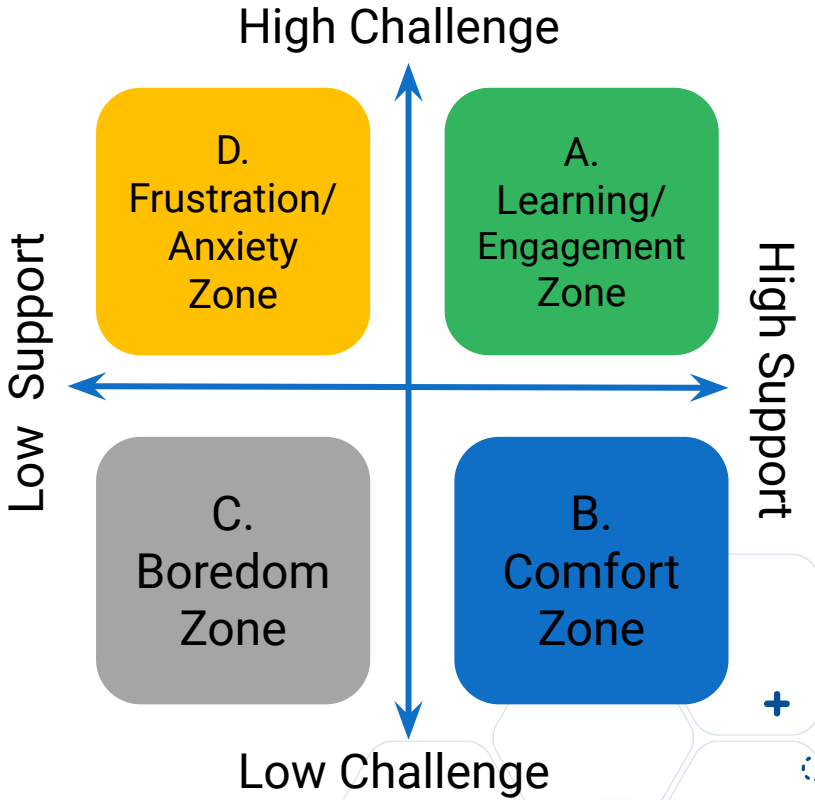
Beliefs about ourselves as mathematicians

Beliefs about how people learn math

Beliefs About the Teacher-Student Relationship

1. Reflect on where you placed yourself on the Balancing Challenge and Support Chart.
2. Let's reflect back to the intro: **"I Wish my Facilitator Knew…"**
3. How might **"I Wish My Teacher Knew…"** bring in student agency and voice?





Shifting Teacher and Student Beliefs

Beliefs about the teacher-student relationship

Beliefs about what math is

Beliefs about ourselves as mathematicians

Beliefs about how people learn math

Beliefs About What Math is…

Communication

Debate

Estimation

Perseverance

Noticing/Wondering

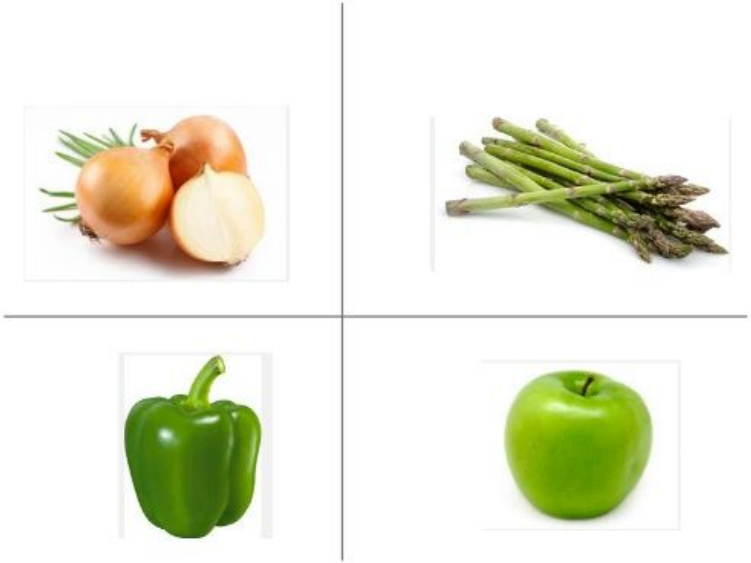
Math is… Estimation

How much money are the coins worth?

[Robert Kaplinsky]

Math is… Debate

Which One
Doesn't Belong?



idea from http://scaffoldedmath.blogspot.com/2016/09/which-one-doesnt-belong.html

Reflect

Take a moment to reflect, then share your thoughts on this question:

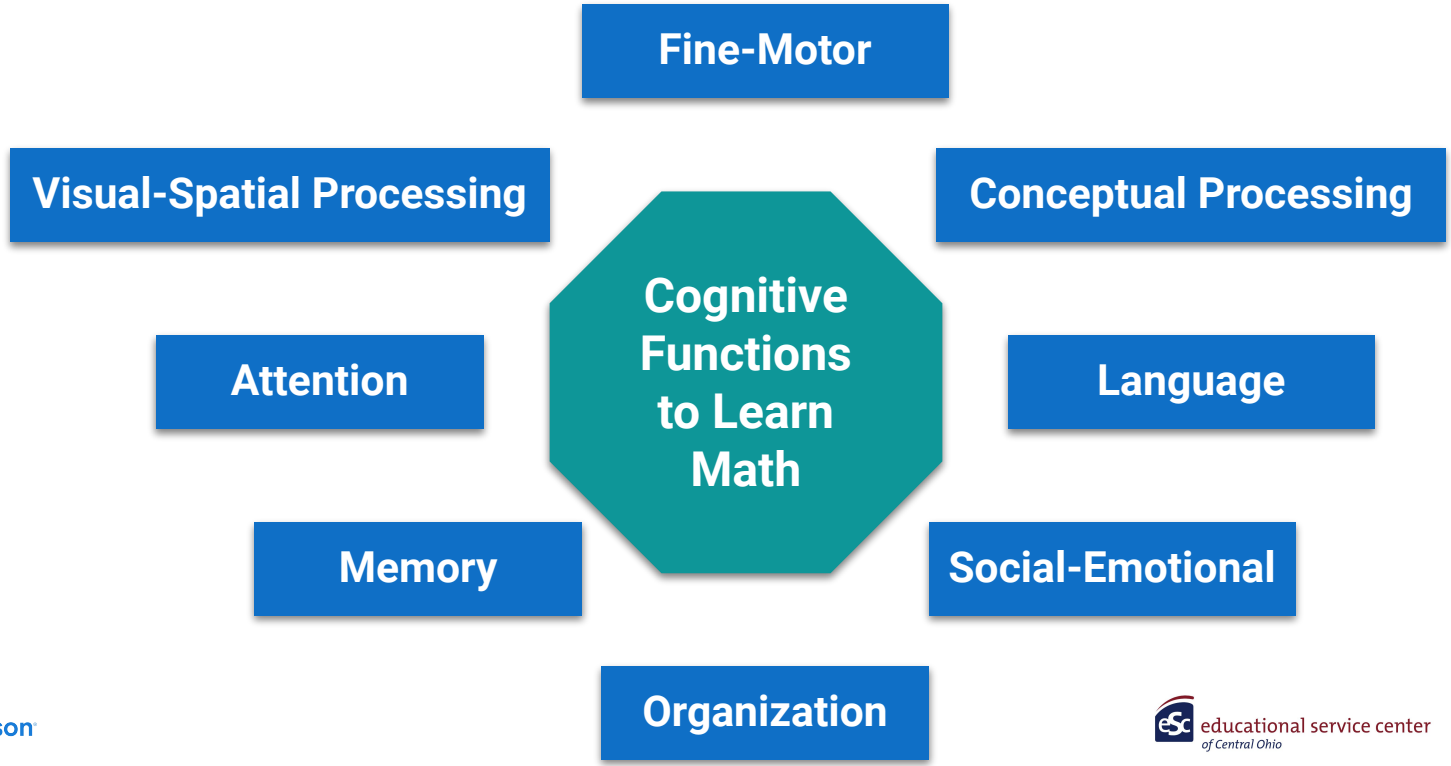
Why do mathematics?

Chat

Beliefs That Create Positive Learning Experiences

Beliefs about the teacher-student relationship	A caring partnership, both invested in student success
Beliefs about what math is	Exploring patterns & creative thinking, not just memorizing formulas
Beliefs about ourselves as mathematicians	Each of us is capable and has something interesting to offer
Beliefs about how people learn math	We learn through an ongoing process of working to make sense of our own ideas & the ideas of others

Considering Cognitive Functions



Build

How can we make this work actionable?

Time to Plan

5 minutes

- Use the Strategy Planning Guide to work out specific steps for using one of the strategies we explored or from the Choice Board.

Let's Explore: Strategy Choice Board

Choose any of the sections below and explore the related BL resources & strategies.

Beliefs about the teacher-student relationship

I Wish My Teacher Knew

Beliefs about what math is

Teaching Perseverance

Beliefs about ourselves as mathematicians

Growth Mindset

Beliefs about how people learn math

2nd Grade

6th Grade

11th Grade

Share Out

What strategy are you planning to use to strengthen beliefs about how students see...

- **Beliefs about the teacher-student relationship**
- **Beliefs about what math is**
- **Beliefs about ourselves as mathematicians**
- **Beliefs about how people learn math**

Math is…

Our Webinar Series: Elements of Student-Centered Math Instruction

1. Creating Positive Learning Experiences in Math
2. Developing Mathematical Fluency
3. Using Visual Representation to Support Math Reasoning
4. Developing Multiple and Varied Checks for Conceptual Understanding

Q & A

What questions do you have about our conversation today?

We value your feedback!

Your input is important to us, please take a moment to complete our survey using the link in the chat.

Thank you!