



Welcome!

- **Chat box:** Comment, chat with other participants, ask questions, ... you know chat.

Change

To: All panelists ▼

to

To: All panelists and attendees ▼

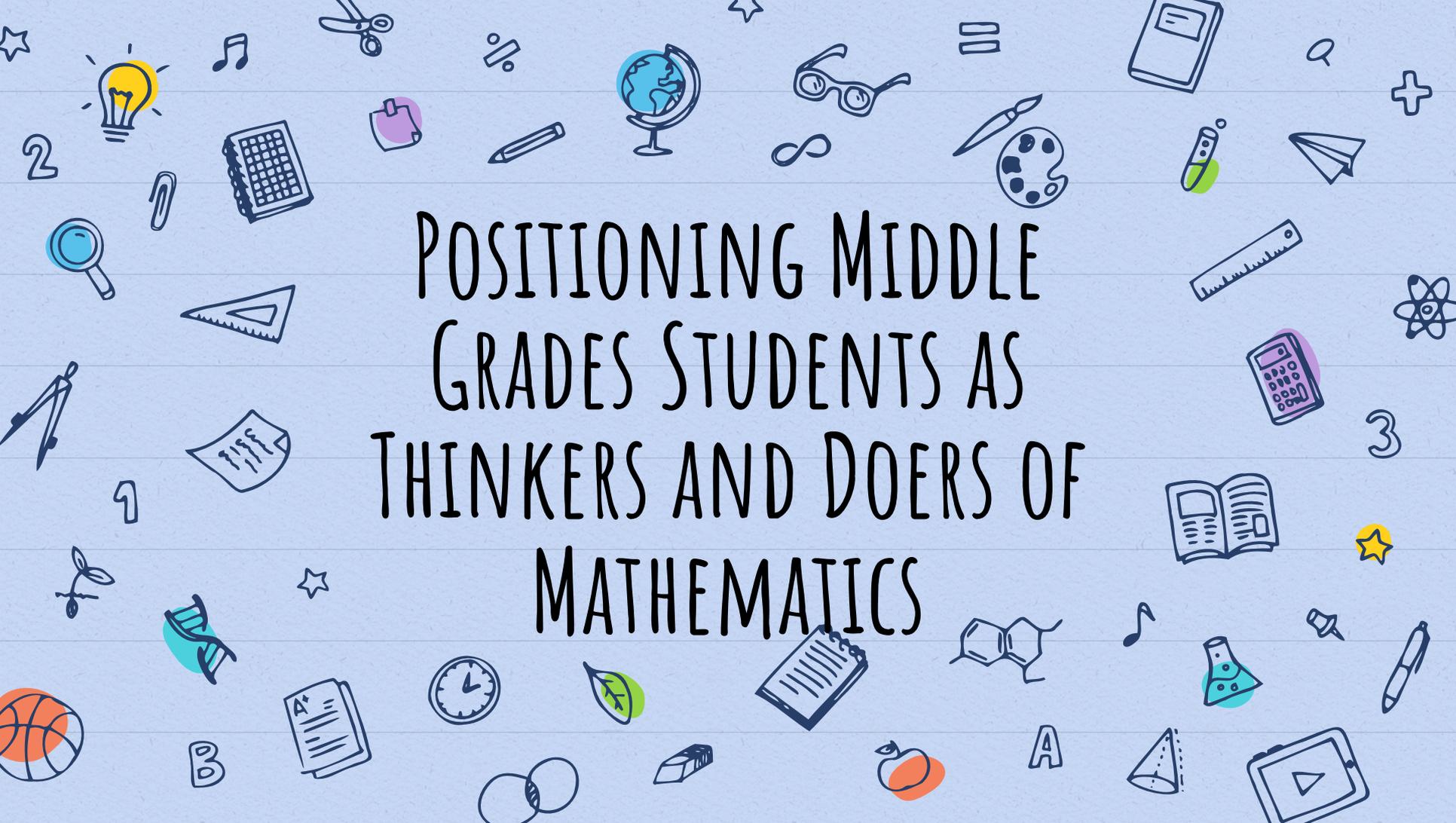
- **Q & A:** Use to send questions to the presenter(s) and moderator.
- **Raise Hand:** Presenters may ask you to raise your hand to participate. Wait for it!





Welcome!

- A recording will be available on www.nctm.org/100
- A link to a certificate will be sent to all attendees tomorrow.
- Follow us on Twitter @NCTM and share your thoughts about tonight's webinar using the hashtag #NCTM100
- Continue the conversation after the session on my.nctm.org



POSITIONING MIDDLE
GRADES STUDENTS AS
THINKERS AND DOERS OF
MATHEMATICS

WELCOME FROM YOUR PRESENTERS!



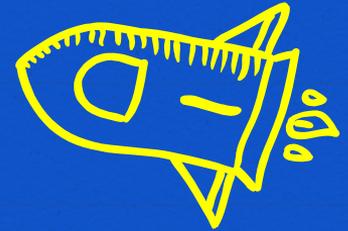
Claudia Bertolone-Smith, Ph.D
California State University, Chico



Lynda Wiest, Ph.D
University of Nevada, Reno



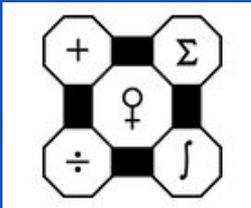
Heather Crawford-Ferre, Ph.D
Nevada Dept. of Education



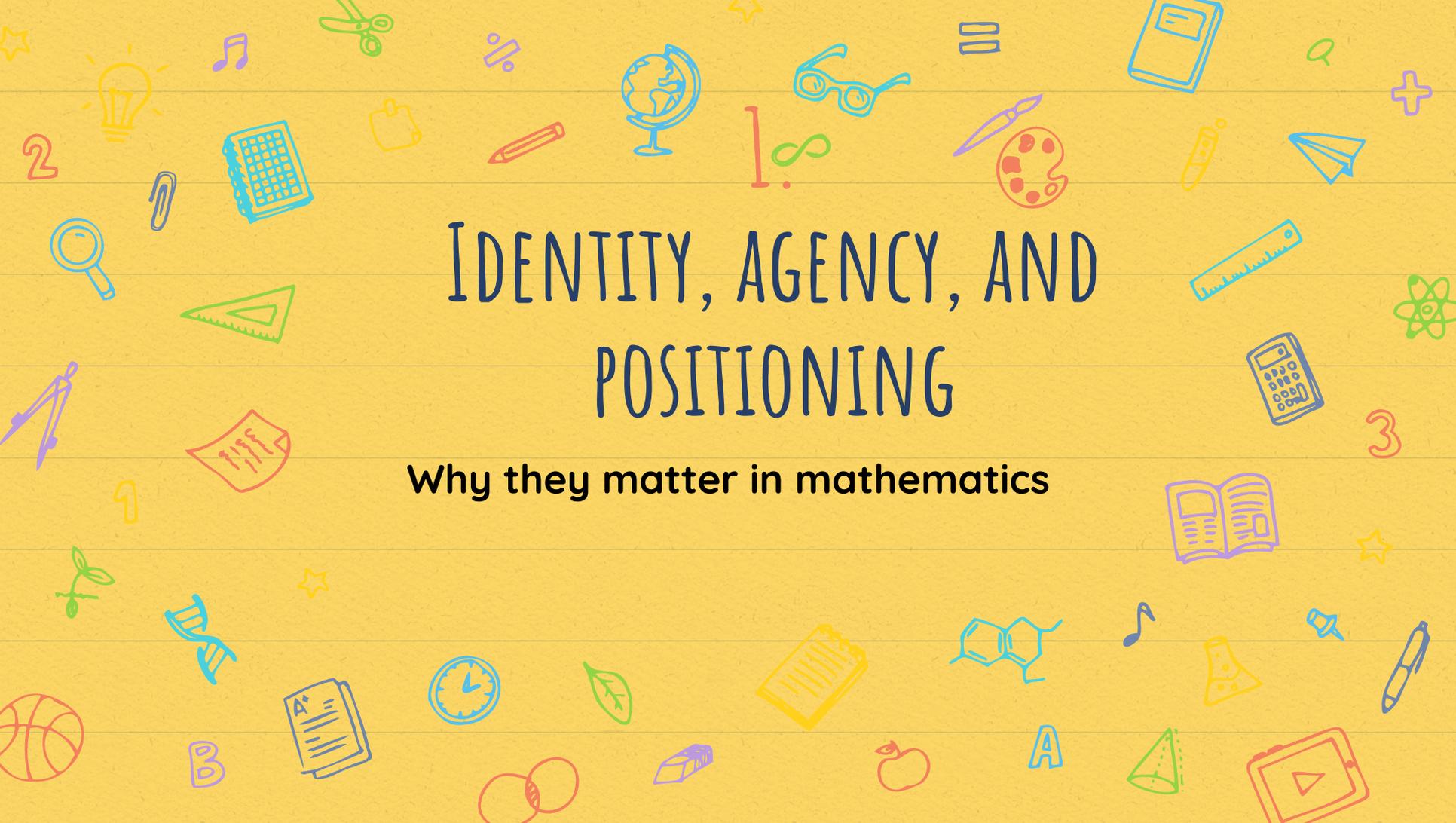
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WOMEN AND MATHEMATICS EDUCATION

www.womenandmath.org



Girls + Math = POWER!



IDENTITY, AGENCY, AND POSITIONING

Why they matter in mathematics

"PEOPLE THINK THAT STORIES ARE SHAPED
BY PEOPLE. IN FACT, IT'S THE OTHER WAY
AROUND."

-TERRY PRATCHETT

IDENTITY

ONCE I HEAR IT AND FEEL IT ENOUGH, I BELIEVE IT'S TRUE
(WOOD, 2013).

- Social Identities and Situational Identities

**An overall sense of who you are, what your role is,
and how you fit in the community**

- Changes over time
- Informed by what we hear, feel, and experience
- Teachers often inform a child's identity

CHAT

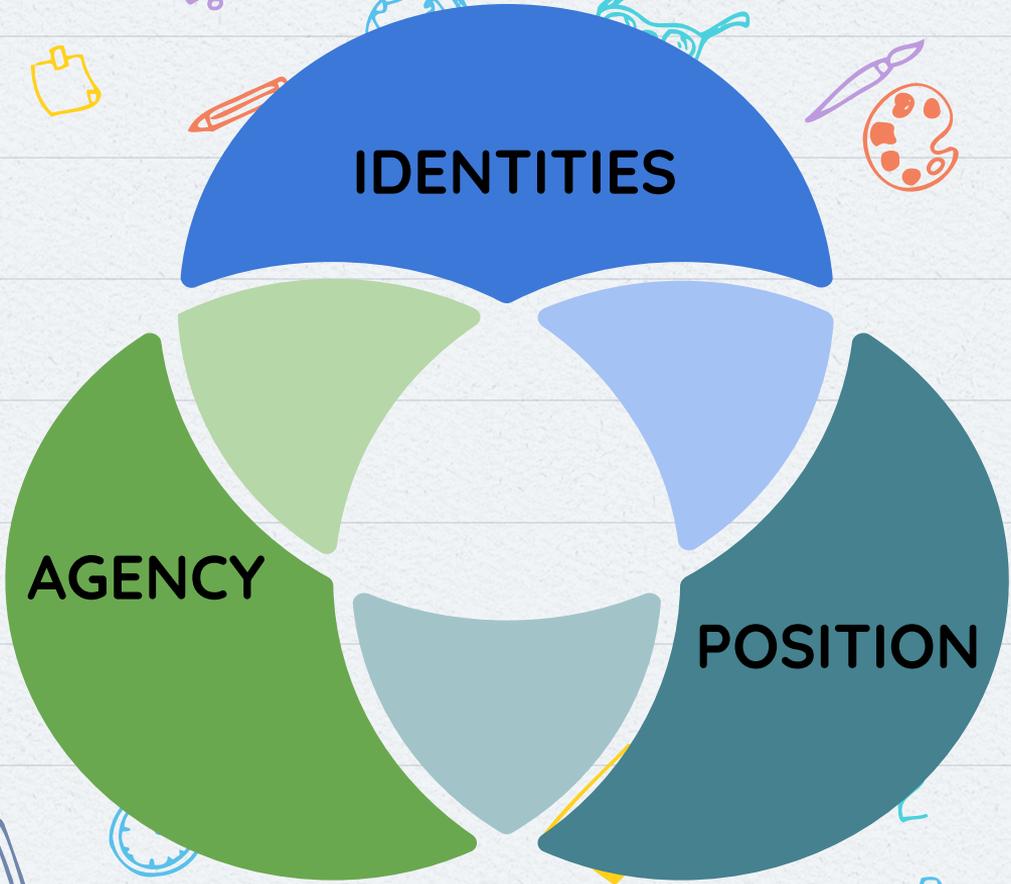
What is
mathematics
identity?

My story about who I am as
a math learner.

Why does it
matter?

Influences participation,
performance, dispositions
and career choices.





IDENTITIES

AGENCY

POSITION

POSITIONING

SOCIAL

I position myself in math based on how I want to be seen.

Novice- “I don’t get it!”

Expert- “I know it already.”

ACADEMIC

I am positioned in math based on how others see me...

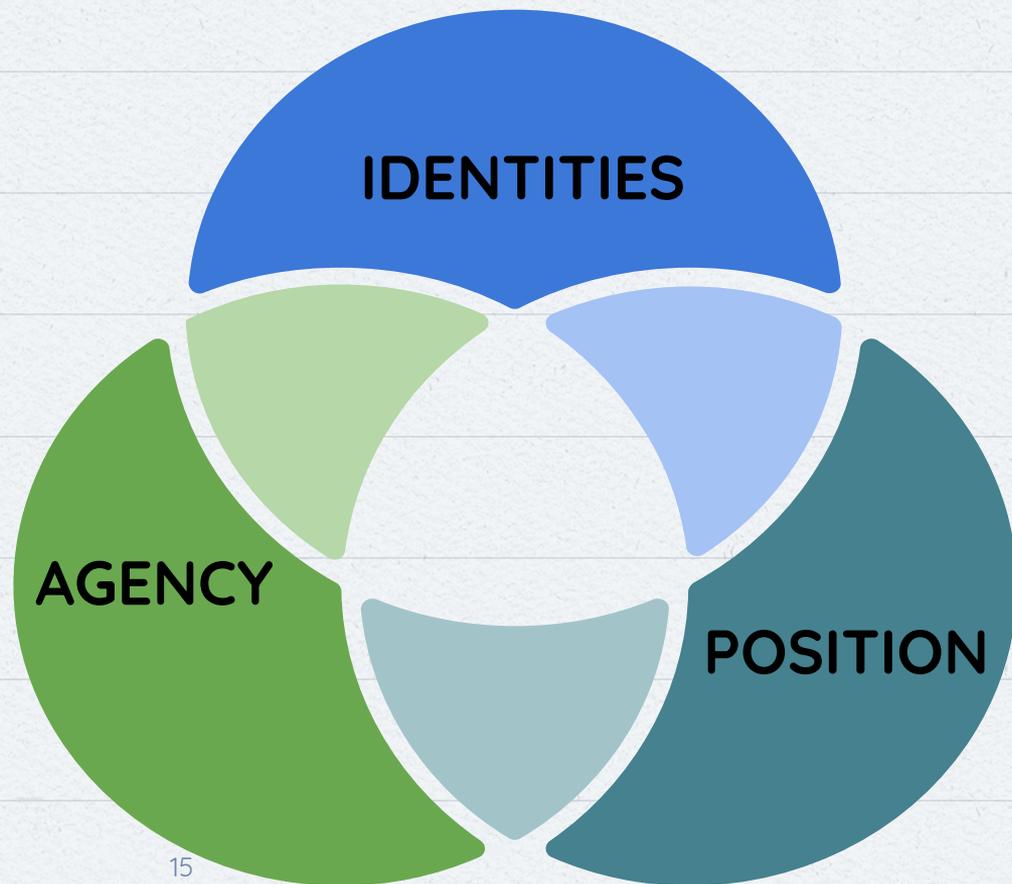


WHAT GETS CONSTRUCTED AS MATHEMATICAL
COMPETENCE IN THE CLASSROOM HAS
IMPLICATIONS FOR STUDENTS' PERCEPTIONS OF
THEIR OWN AND PEERS RELATIVE CAPABILITIES
AND THUS FOR ISSUES OF STATUS AND POWER
IN THE CLASSROOM.

-Cobb et al., 2009, p. 48

TEACHERS WORK WITH ALL THREE!

“Helping our students become more aware of their mathematics identities can empower them to make that relationship more meaningful, thus motivating them to engage in mathematics in our classrooms and beyond” (Hill, 2010, p. 213)



2.

MATH AND STUDENT DISPOSITIONS

How school can shape our mathematical identity, agency, and position.

"ONE OF THE BEST TEACHERS I EVER HAD NEVER
COMPLIMENTED ME FOR BEING SMART. SHE WOULD ONLY
EVER APPRECIATE MY DEDICATION, COMPASSION, AND HARD
WORK. TODAY, SHE IS STILL SOMEONE THAT I WANT TO MAKE
PROUD."



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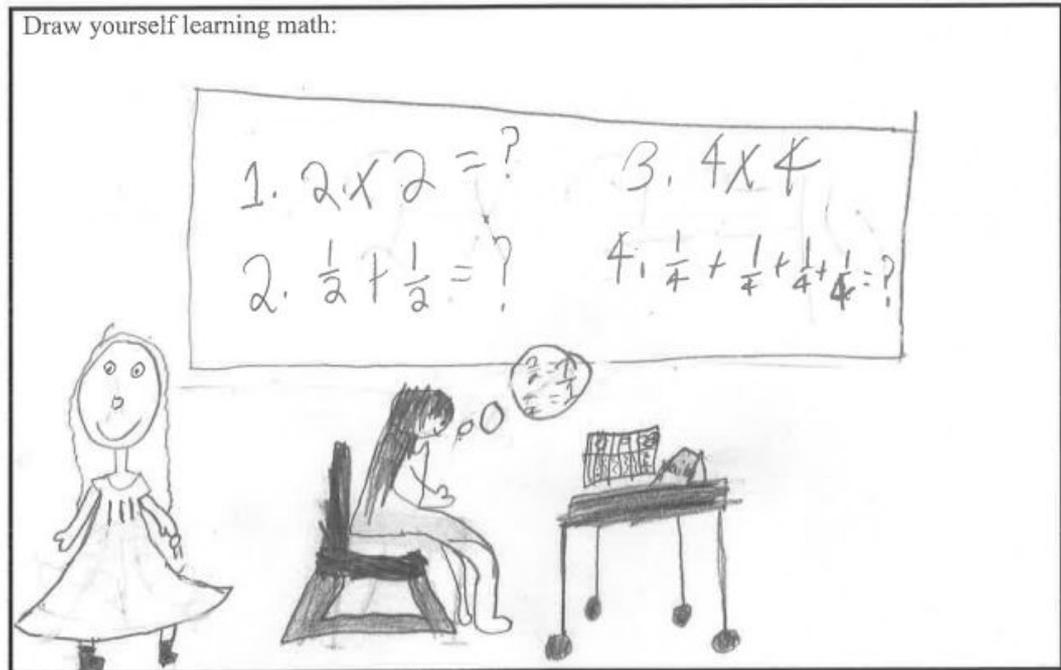


The assignment: Dear Math, I love you. ❤️

Write a letter to math, include experiences you have had that have shaped your relationship with math.

Draw a picture of yourself **LEARNING** math.

DUE next week.



EMOTIONS and THOUGHTS from PSTs Letters to Math

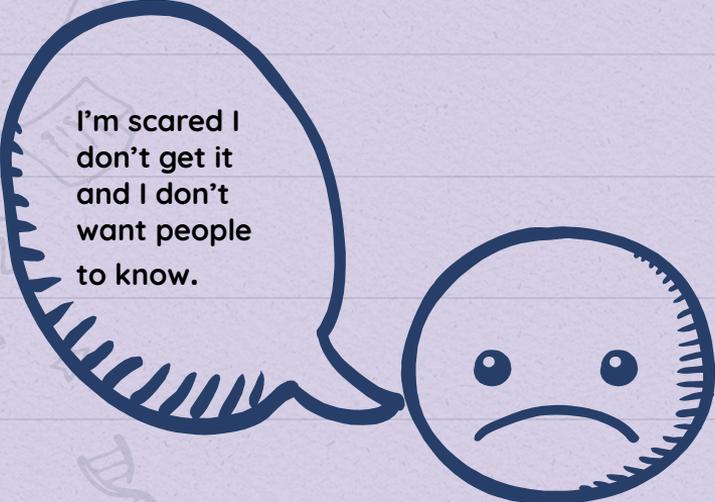
Excited	Hurts me	Complicated
Stressed	Scared me	Least favorite
Surprised	Crying at night	Struggle
I don't like you (math) very much	Fear- afraid of you	Insecure
Feel dumb	Devastated	Mysterious
Frustrated	Stuck in the spokes	Too fast, too tricky
Embarrassed when it did not come naturally	Smooth ride	Math is just for the smartest kids in class
Proud	Challenged	Fun, the best!
Anxious trying to figure you out.	More lows than highs	Favorite
Insecure	Love-hate	Indifferent

Math Class Behaviors (How I show you my identity)

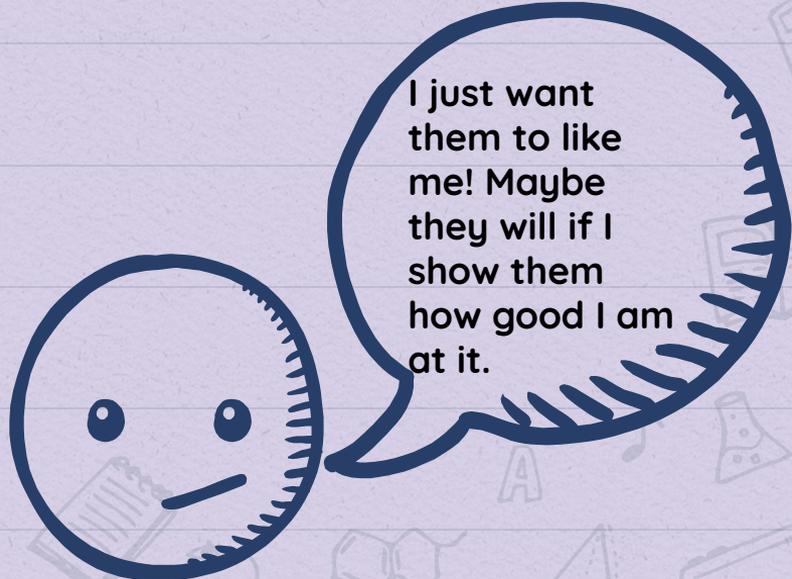
Shirking	Working	Showboating
Go to the bathroom	Engaged/collaborating/focusing	The activity is a race!
Shrink in your seat	Asking questions	Blurting out the answers
Fidget with random things	Bouncing ideas on how to do it	Refusing to work with partners
Look outside, daydream	Pencil moving	Making a big deal when you finish
Distracting others	Listening, eyes on activity	Laughing when someone makes a mistake
Talk to friends	Taking time to think	Saying, "This is so easy, I'm bored".
Head down	Not interrupting	Letting everyone know you are done.
Rolling eyes	Engage in teamwork	Bragging about grades
Make excuses	Using manipulatives/technology	Doing all the work in a group
Doing anything but the math	Considering the problem	Yelling, "I know!" immediately.

WHY DO WE BEHAVE THIS WAY??

YOU MAY BE SURPRISED.



I'm scared I don't get it and I don't want people to know.



I just want them to like me! Maybe they will if I show them how good I am at it.

Give them alternative behavior choices!

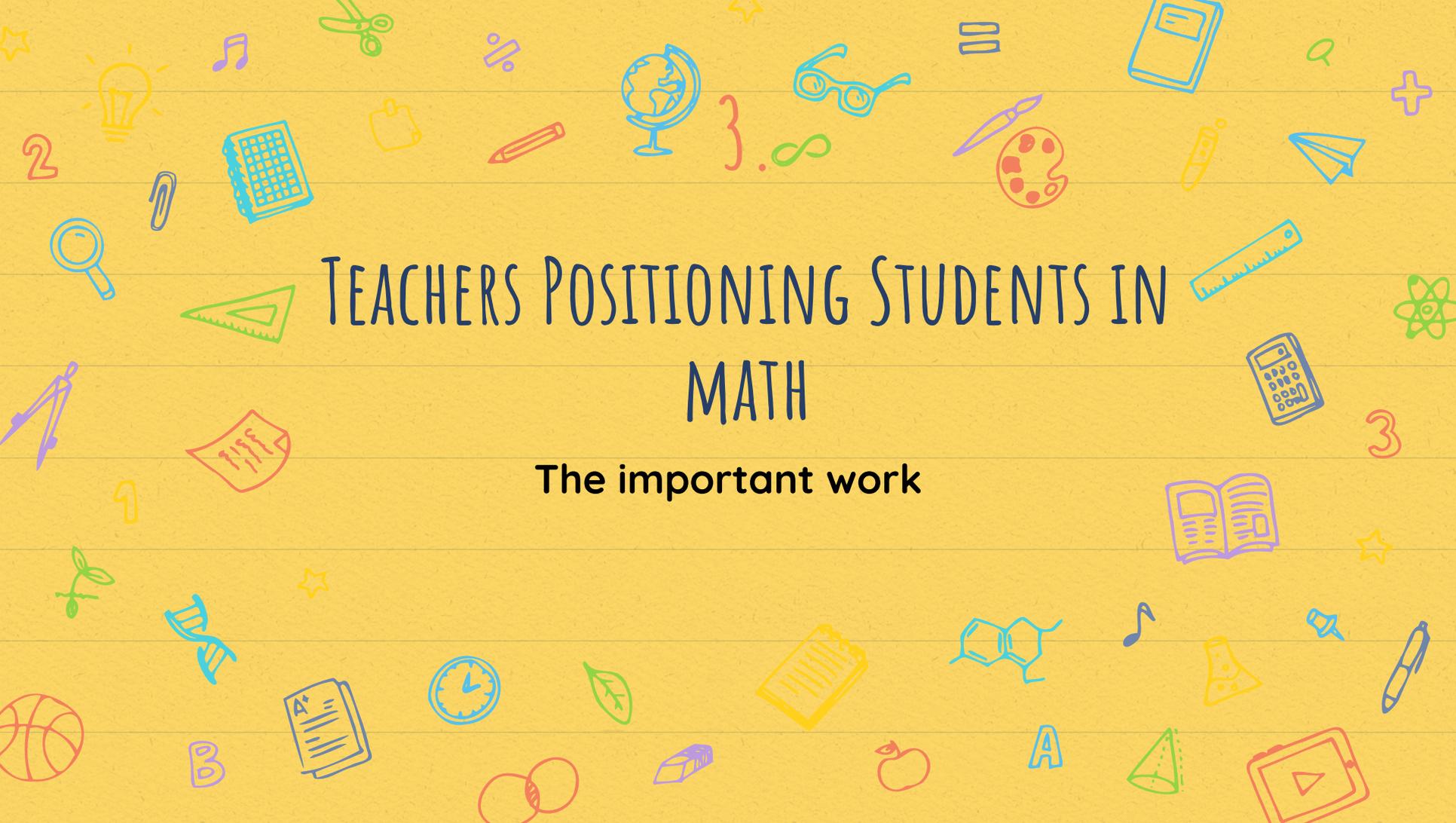
BEHAVIORS THAT BRING YOUR
MATH ABILITY DOWN



BEHAVIORS THAT BRING YOUR
MATH ABILITY UP



Behaviors that Bring MY Math Ability Down	Behaviors that Bring MY Math Ability UP
Distractions, go to the nurse	Choose a partner who is helpful.
Playing on my phone	Move somewhere I can concentrate
Rushing, refusing to write anything	Confidence
Losing self confidence, telling myself I can't.	Telling myself " I CAN do it!"
Talking to neighbor	Asking questions
Not asking questions when I don't get it	Not giving up if I get it wrong
Believing I'm not smart enough	Trying my hardest no matter the challenge
Losing my papers, pencils, etc.	Being okay with struggle
Giving up when it is hard	Asking for help when I need it
Choosing a partner who I will talk with for fun.	Sitting alone without distractions

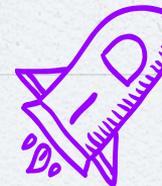


TEACHERS POSITIONING STUDENTS IN MATH

The important work



POSITIVE REPOSITIONING



BE AWARE

Students show you their math identity through their behavior.



ASK BEFORE YOU ASSUME

Students will tell you what they believe to be true about themselves as and why they act the way they do. Help them identify behaviors that bring their ability down.



POSITIVELY REPOSITION

- Have students create personal goals.
- Notice shifts towards working behaviors!
- Praise these positive choices!



How teachers positioned me....From PSTs letters to math

My teacher taught me one way of learning you (math) and didn't like it when students did it another way.

I understand you (math) until the teacher puts me on spot in front of everyone.

I had fun because my teacher believed in me.

My teachers liked the drill and kill that I despised.

My teachers put parameters on what someone who was good at math could do.

Boring lecture followed by repetitive questions that I already knew the answer to.

My dreams came true, I was placed in a self-contained classroom.

Someone became the beacon of light in the darkness that shrouded us (the teacher).

Taunting me in front of the whole class, holding me hostage

Not taking the time to slow down and help those of us who don't quite get it.

These two teachers explained you in a way I could understand you, and for the first time I didn't feel dumb.

We were able to use whiteboards and erase if we needed to. We got to work in groups at our tables for help when we needed it.

Very few asked how it should be solved, lectured us about how it should be done

My teacher was kind but very set in his ways about how he taught.

Never demanding anything from our bright minds.

Drill, kill, and formulaic types of teaching- disservice

RETHINKS: STRATEGIES FOR POSITIONING RELUCTANT STUDENTS

RETHINK tests.

Smaller chunks

Frequent checks

Partner Up

RETHINK time.

We need fast AND
slow math thinkers!

RETHINK the value of connection.

Make time to listen
and be present.

REVISE the definition of a GOOD math student.

Create a safe place
to make mistakes
and engage in
learning.

RETHINK obedience.

Encourage risks!
Value surprising,
unexpected, and
novel ideas.

Rethink group work.

Who's in?

Who's out?

Notice student
positioning!

ADD TO THE CHAT ONE THING A TEACHER DID THAT MADE ALL THE DIFFERENCE IN YOUR MATHEMATICAL LIFE!



Session

WRAP UP

LET'S SHARE!

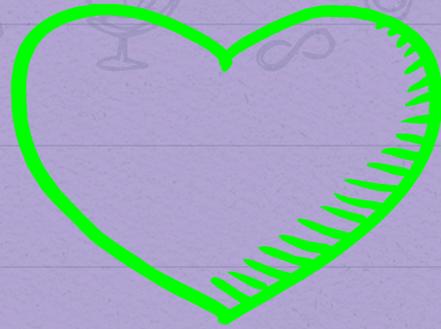


- If you can offer an additional key point or strategy in relation to identity, agency, or positioning in mathematics, please write it in the chat now.
- Take a few minutes to skim each others' comments.



SELECTED RESOURCES ON MATH IDENTITY & AGENCY

- FHI 360. (2015). *A focus on girls' math identity for brighter futures* [video].
- *Furthering girls' math identity* [website].
- Mathematical Agency Improvement Community. *Status & mindset interventions*.
- New Zealand Ministry of Education. (2012). *Fostering positive mathematical identities*.
- *The Day I Quit Math*- Powerful video on the influence of teachers.
- Stanford University Graduate School of Education. (2019). *Helping kids identify as math learners* [short article & audio file].



THANK YOU!

We are so glad you joined us!

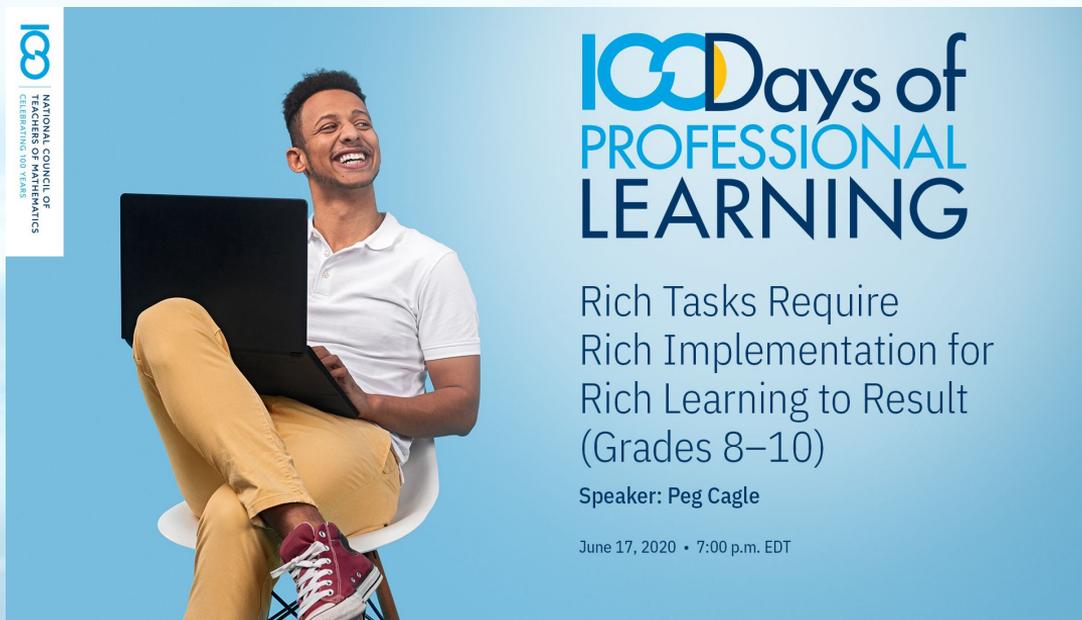
You may contact us at

cmbertolone-smith@csuchico.edu



Thanks!

The next webinar will be...

A promotional graphic for a webinar. It features a man in a white polo shirt and yellow pants sitting on a white stool, smiling and looking at a laptop. The background is a light blue gradient. On the left side of the graphic is a vertical logo for the NCTM 100th anniversary. On the right side, the text reads '100 Days of PROFESSIONAL LEARNING' in large, bold letters. Below that, the title of the webinar is 'Rich Tasks Require Rich Implementation for Rich Learning to Result (Grades 8–10)'. The speaker is identified as 'Speaker: Peg Cagle' and the date and time are 'June 17, 2020 • 7:00 p.m. EDT'.

100
NATIONAL COUNCIL OF
TEACHERS OF MATHEMATICS
CELEBRATING 100 YEARS

100 Days of PROFESSIONAL LEARNING

Rich Tasks Require
Rich Implementation for
Rich Learning to Result
(Grades 8–10)

Speaker: Peg Cagle

June 17, 2020 • 7:00 p.m. EDT

www.nctm.org/100



Guidance for teachers, schools, and districts to move forward.



NATIONAL COUNCIL OF
TEACHERS OF MATHEMATICS



JUNE 2020

Moving Forward: Mathematics Learning in the Era of COVID-19

We live in uncertain times. Public health is at the forefront of our minds, and our schools have been disrupted in ways we have never seen. Although no one can predict how education might look in the coming months, it is in the best interests of our students to strategize how we might best meet their needs in the upcoming months. *Moving Forward* is the result of a joint effort of NCSM: Leadership in Mathematics Education (NCSM) and the National Council of Teachers of Mathematics (NCTM) that presents considerations, questions, and potential solution processes to educators and school leaders to address the challenges induced by the COVID-19 pandemic of spring 2020. In this document, we show how effective practices for mathematics teaching and learning can provide helpful direction to address the challenges that teachers, school leaders, and policymakers face now and will continue to face in the months ahead.

This document is organized around three major areas that require consideration when planning for the 2020–2021 school year. These three areas have serious implications for equitable access to high-quality mathematics teaching and learning: (1) structural considerations, (2) teaching practices, and (3) advocacy.

THREE AREAS WITH SERIOUS IMPLICATIONS FOR
EQUITABLE ACCESS TO HIGH-QUALITY MATHEMATICS TEACHING AND LEARNING



www.nctm.org/movingforward



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