Catalyzing Change in Mathematics Education
Transforming Challenges Into Opportunities
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Transforming Challenges Into Opportunities

National Council of Teachers of Mathematics

Tuesday, May 26, 2020. 2:00 pm EDT
Education Week Webinar
Panel

Trena Wilkerson
Baylor University
President, NCTM

Sarah B. Bush
University of Central Florida
Board of Directors, NCTM

Robert Q. Berry III
University of Virginia
Past President, NCTM

DeAnn Huinker
University of Wisconsin-Milwaukee
Past Board Member, NCTM
The Last Three Decades Have Seen Significant Progress in the Teaching and Learning of Mathematics
Why Catalyzing Change now? (12th Grade Data)

Why Catalyzing Change now? (4th Grade Data)

Why Catalyzing Change now? (8th Grade Data)

Catalyzing Change Series
Official Positions of the National Council of Teachers of Mathematics

NCTM (2020)  
NCTM (2020)  
NCTM (2018)
Four Key Recommendations

1. Broaden the purposes of school mathematics

2. Create equitable structures in mathematics

3. Implement equitable mathematics instruction

4. Develop deep mathematical understanding
Recommendation 1

Broaden the Purposes of Learning Mathematics

Why do we learn mathematics?

Share your ideas in the chat.
Recommendation 1

Broaden the Purposes of Learning Mathematics

Develop a foundation of deep mathematical understanding

Experience wonder, joy, and beauty in mathematics

Use mathematics as a lens to understand, critique, and create solutions for the world
Multiple Purposes of Learning Mathematics

“The power of the multiple purposes occurs when the purposes converge in ways that foster positive relationships between children and mathematics.

The goal is for children to see themselves in the world of mathematics, not looking in from the perimeter or looking for the nearest exit door. The ultimate success of learning mathematics is children who are confident in themselves as doers, knowers, and sense makers of mathematics.”

Catalyzing Change in Early Childhood and Elementary Mathematics (NCTM 2020, p. 23)
Recommendation 2

Create Equitable Structures in Mathematics

dismantle ability grouping and related structures of tracking students

challenge spaces of marginality and privilege to support inclusiveness

develop structures that produce learning opportunities rather than opportunity gaps

focus on strengths of students and teachers rather than maintaining deficit views
“Just equitable, and inclusive mathematics learning opportunities for all students demand change in institutional structures, teaching and learning environments, and individual beliefs and actions.”

Catalyzing Change in Early Childhood and Elementary Mathematics (NCTM 2020, p. 25)
“The question is not whether all students can succeed in mathematics but whether adults organizing mathematical learning opportunities can alter traditional beliefs and practices to promote success for all.”

*Principles to Actions: Ensuring Mathematical Success for All* (NCTM 2014, p. 61)
Recommendation 3
Implement Equitable Mathematics Instruction

What are some characteristics of students with a positive mathematical identity?

*Share your ideas in the chat.*
Recommendation 3
Implement Equitable Mathematics Instruction

Positive Mathematical Identity + Strong Sense Mathematical Agency + Shared Mathematical Authority

Students as Empowered Thinkers and Doers of Mathematics
Recommendation 3
Implement Equitable Mathematics Instruction

- Quality of mathematics learning experiences rather than quantity of problems
- Mathematics is seen as a collaborative endeavor
- Students are asked to solve problems in more than one way
- Students are encouraged to share their thinking, not just solutions
Recommendation 4

Develop Deep Mathematical Understanding

- Strong foundation of conceptual understanding.
- Essential mathematics across all grade levels.
- High quality mathematics education for each and every student.
Next Steps

• Work together to determine how the purposes of school mathematics will become the foundation of a school mathematics program.

• Challenge policies, practices, and procedures that restrict students access to mathematics.

• Create space for educators to collaborate on professional learning, equitable teaching, and resources.
Books and Resource Guides

www.nctm.org/change

- Ordering information
- Book study guides
- Case studies
- And more
Catalyzing Change Webinars

May 26, 27, 28
7:00 pm EDT

Catalyzing Change Across All Levels: Opportunities and Challenges
Speakers: Trena Wilkerson, NCTM President and Robert Q. Berry III, NCTM Past President
May 26, 2020 • 7:00 p.m. EDT

Catalyzing Change: An Overview of the 4 Key Recommendations for Early Childhood and Elementary Mathematics
Speakers: DeAnn Huinker, Cathery Yeh, Nicole Riegelman, and Anne Marie Marshall
May 27, 2020 • 7:00 p.m. EDT

Catalyzing Change in Middle School Mathematics: Initiating Critical Conversations Centered on the 4 Key Recommendations
Speakers: Sarah B. Bush, Christa Jackson, George J. Roy, and Eric Milou
May 28, 2020 • 7:00 p.m. EDT
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