NCTM Releases New Reports That Aim to Help Students with Mathematics Beginning as Early as Preschool

New publications highlight need for all students to see themselves as capable, successful doers of mathematics

Reston, Va. — May 26, 2020 — As students, teachers, schools and districts continue to work through distance learning, the National Council of Teachers of Mathematics (NCTM) has identified both challenges and opportunities that impact students’ learning and the application and impact of their mathematical understanding. Prior to the global pandemic hitting, NCTM had developed two publications to identify and catalyze better policies and systemic approaches to teaching mathematics, starting in preschool through middle school and beyond.

Next academic year, our classrooms and our mathematics teaching and learning will look different, demanding more while offering new possibilities, as well. NCTM is releasing two publications, Catalyzing Change in Early Childhood and Elementary Mathematics: Initiating Critical Conversations and Catalyzing Change in Middle School Mathematics: Initiating Critical Conversations (www.nctm.org/change), to broaden the work that began with Catalyzing Change in High School Mathematics: Initiating Critical Conversations, which was released in April 2018. These publications call on school and district leaders, mathematics education leaders and all stakeholders to come together to confront inequitable policies and practices, including many that are more evident since the onset of COVID-19.

A set of landmark studies identified children’s early mathematical knowledge (at about age five) as a predictor of later success in mathematics and education. Catalyzing Change in Early Childhood and Elementary Mathematics highlights the need for a just, equitable and inclusive mathematics education system for each and every child. To achieve this vision, NCTM believes all stakeholders must recognize that both explicit and implicit structures and practices enacted in the early years either contribute significantly to trajectories for children’s continued mathematical success and confidence in middle and high school and their personal and professional lives as adults or else limit children’s access and opportunity.

As students transition from elementary to middle school, they experience rapid development as young adolescents in ways that are physical, cognitive, moral, psychological and socioemotional. Because of this multifaceted transformation, middle school mathematics should intentionally challenge students in meaningful ways, be responsive to students’ development, and be respectful of students’ needs and interests. Catalyzing Change in Middle School Mathematics was written to encourage stakeholders to engage in collegial and challenging conversations, as well as to initiate sustained long-term efforts to create the highest quality middle school mathematics program for each and every student.

All three Catalyzing Change publications make recommendations centered on the following goals:

- Broaden the purposes of learning mathematics
- Create equitable structures in mathematics
- Implement equitable mathematics instruction
- Develop deep mathematical understanding
“Disparities in learning opportunities and outcomes in mathematics education on the basis of race, class, culture, language, gender, and ability status are more prevalent than ever, and COVID-19 is shining a brighter light on this issue,” said Dr. DeAnn Huinker, University of Wisconsin–Milwaukee and lead writer of Catalyzing Change in Early Childhood and Elementary Mathematics. “We must examine and change our beliefs about who is capable of doing and understanding mathematics, disrupt existing inequitable practices and catalyze change toward creating a just, equitable and inclusive system in early childhood and elementary mathematics.”

“Students’ middle school experience is a rich place where they further develop deep mathematical understanding in ways that build on and extend previous knowledge but also empower them to understand and critique their world,” said Dr. Sarah B. Bush, University of Central Florida and lead writer of Catalyzing Change in Middle School Mathematics. “The mathematics learned in middle school is extremely important. How we think about teaching students and preparing our educators may need to shift focus, especially in the current environment. Stakeholders involved with middle school mathematics are in a position with endless potential to make a difference in the lives of young adolescents.”

“Now is the time for us to come together. We are all experiencing the world differently and we need to meet the needs of our educators,” said NCTM President Dr. Trena Wilkerson. “We have been overwhelmed by the response to NCTM’s 100 Days of Professional Learning. There is clearly a desire for math educators to collaborate and learn from one another. All across the country we are seeing an interest in making changes to the way we approach mathematics education. With the additional focus on early childhood, elementary and middle school, we are confident that we can continue having these critical conversations and move to help all children find the wonder and joy in math.”

The Catalyzing Change Series is part of an ongoing, long-term collaborative process among stakeholders interested in making sure that each and every student has access to high-quality mathematics teaching and learning. Learn more about Catalyzing Change at www.nctm.org/change or participate in an upcoming webinar about Catalyzing Change that is part of NCTM’s 100 Days of Professional Learning.

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The National Council of Teachers of Mathematics celebrates 100 years as the public voice of mathematics education, supporting teachers to ensure equitable mathematics learning of the highest quality for each and every student through vision, leadership, professional development and research. With 40,000 members and more than 200 Affiliates, it is the world’s largest organization dedicated to improving mathematics education in prekindergarten through grade 12. NCTM is dedicated to ongoing dialogue and constructive discussion with all stakeholders about what is best for students and envisions a world where everyone is enthused about mathematics, sees the value and beauty of mathematics, and is empowered by the opportunities mathematics affords.

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