



NATIONAL COUNCIL OF
TEACHERS OF MATHEMATICS

PREMIER MATH EDUCATION EVENT

NCTM ANNUAL MEETING & EXPOSITION 2018

April 25-28 | Washington, DC

The background image shows the Jefferson Memorial in Washington, DC, at dusk. The memorial is illuminated and reflected in the water. Overlaid on the image are several mathematical annotations: a dashed white circle with a center point labeled 'h, k' and a radius labeled 'r', with the equation $r^2 = (x-h)^2 + (y-k)^2$ written below it; a horizontal dashed line labeled 'mirror line' below the water; and two vertical double-headed arrows labeled 'h' and 'h_2' indicating vertical distances. A sequence of numbers '1 2 3 4 5 ...' is placed along the top edge of the dashed circle.

$r^2 = (x-h)^2 + (y-k)^2$

mirror line

April 26, 2018 • Washington, DC

Welcome to the
69th Delegate Assembly

NCTM Delegate Assembly Update

Matt Larson, President

National Council of Teachers of Mathematics

NCTM Delegate Assembly

NCTM 2018 Annual Meeting & Exposition
Washington, D.C.



NATIONAL COUNCIL OF
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NCTM Mission Statement

The **National Council of Teachers of Mathematics** supports and advocates for the highest-quality mathematics teaching and learning for each and every student.



NATIONAL COUNCIL OF
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NCTM Strategic Framework

Teaching and Learning:

NCTM provides support for research-informed teaching that ensures the learning of each and every student in equitable environments.



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NCTM Strategic Framework

Access, Equity, and Empowerment:

NCTM advances a culture of equity where each and every person has access to high-quality teaching and is empowered as a learner and doer of mathematics.



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NCTM Strategic Framework

Building Member Value:

NCTM fosters communities that engage members to improve the teaching and learning of mathematics.



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NCTM Strategic Framework

Advocacy:

NCTM engages in advocacy to focus, raise awareness, and influence decision makers and the public on issues concerning teachers of mathematics and high-quality mathematics teaching and learning.



NATIONAL COUNCIL OF
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Major Initiatives

- New Membership Model
- *Catalyzing Change in High School Mathematics: Initiating Critical Conversations*
- My.NCTM.org
- *Taking Action with Principles to Actions*
- Access, Equity, and Empowerment Advocacy



We heard you!

Simple

NCTM heard members saying they wanted a simplified way to join.

Affordable

Make membership pay for itself.

Flexible

Allow members to get what they want and adjust as needed.



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New Membership Levels

Essential

\$89 – Membership with one grade-band journal (print or digital) and its archive, and a 20% discount for the online bookstore and meeting registrations. MyNCTM, Illuminations, and Problems of the Week are now member benefits.

Introductory

First-time members get the Essential for \$59.



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New Membership Levels

Premium

\$139 – full access to Essential level benefits plus all journals and JRME, print or digital (a \$250 value), as well as all journal archives, and a 30% discount for online bookstore and meeting registrations. One free e-book annually available upon renewal.

Students, Emeritus, and Life members

Get the Premium level for \$49.



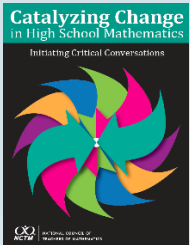
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Key Recommendation



High school mathematics should discontinue the practice of tracking teachers as well as the practice of tracking students into qualitatively different or dead-end course pathways.



NCTM. (2018). *Catalyzing change in high school mathematics: Initiating critical conversations*. Reston, VA: NCTM.



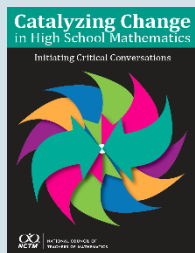
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Key Recommendation



Classroom instruction should be consistent with research-informed **and equitable** teaching practices.



NCTM. (2018). *Catalyzing change in high school mathematics: Initiating critical conversations*. Reston, VA: NCTM.



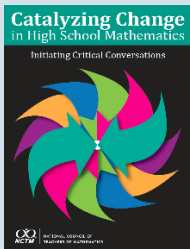
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Key Recommendation



Each and every student should learn the Essential Concepts in order to expand professional opportunities, understand and critique the world, and experience the joy, wonder, and beauty of mathematics.



NCTM. (2018). *Catalyzing change in high school mathematics: Initiating critical conversations*. Reston, VA: NCTM.



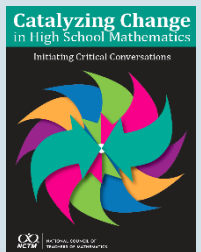
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Key Recommendation



High schools should offer continuous four-year mathematics pathways with all students studying mathematics each year, including two to three years of mathematics in a common shared pathway focusing on the Essential Concepts.



NCTM. (2018). *Catalyzing change in high school mathematics: Initiating critical conversations*. Reston, VA: NCTM.



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MyNCTM

New Online Community for Members

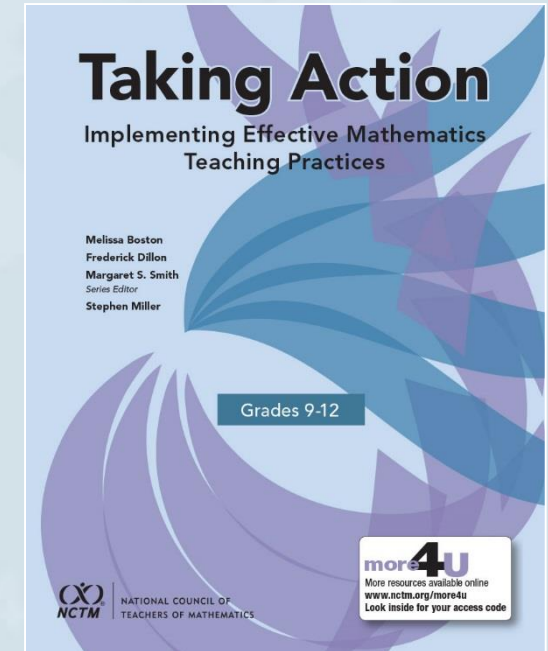
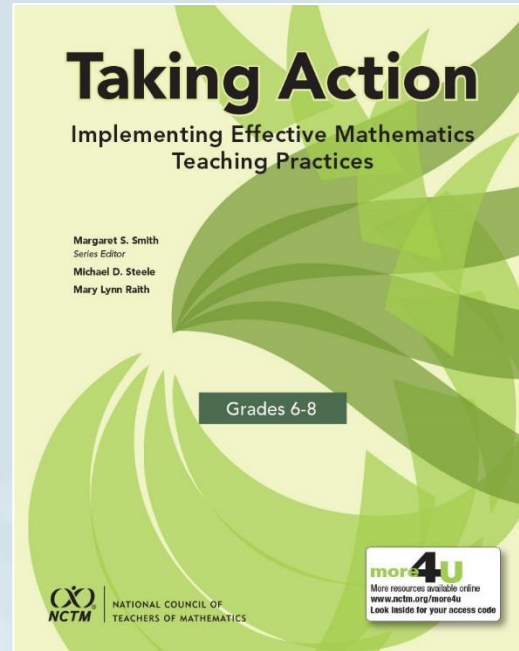
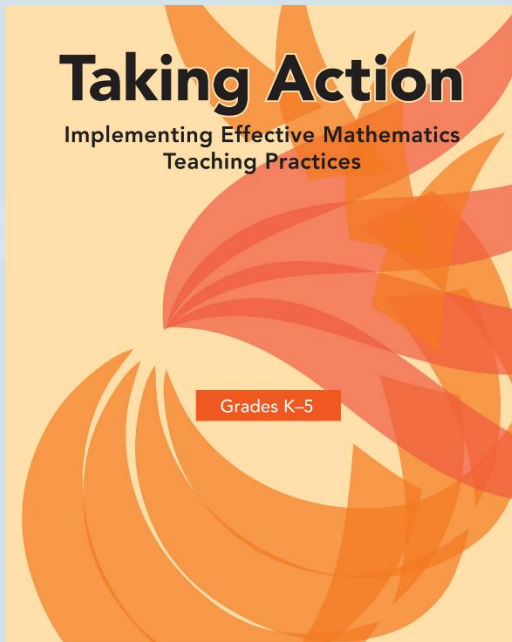
- Network and connect using the new member directory.
- Start or join discussions in the larger community or smaller groups.
- Interact with math education experts.
- Find discussions, people, and resources easily with improved search and filtering.
- Access lessons, thoughts, and resources from your peers, and share your own valuable insights and materials.



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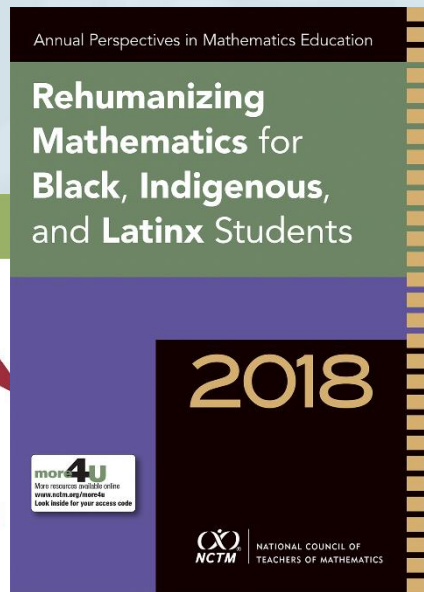
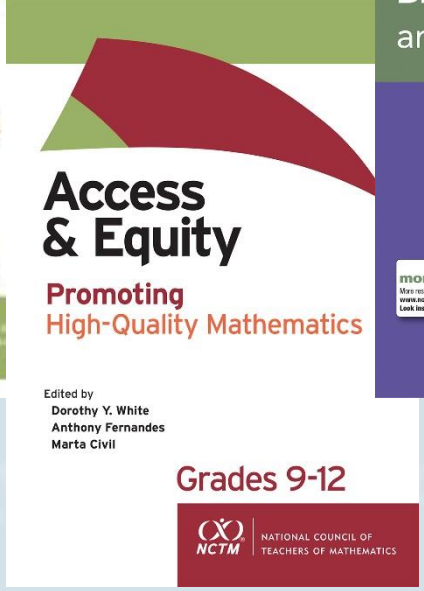
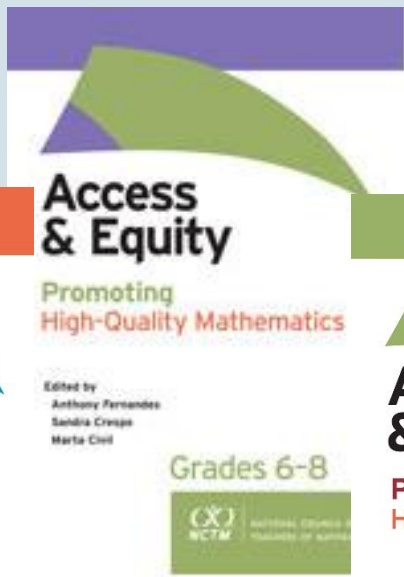
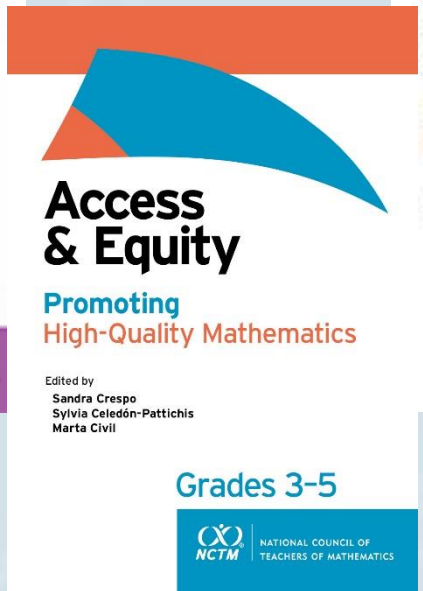
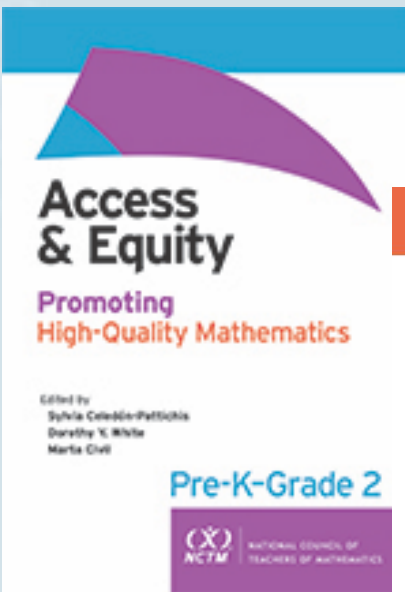


Taking Action



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Access, Equity, and Empowerment



Advocacy

- NCTM commented with guidance on implementing the Every Student Succeeds Act (ESSA)
- Commented on proposed regulations on accountability, state plans, and state and local report cards in ESSA
- Participate in STEM Ambassadors program with NSTA
- NCTM serves on STEM Education Coalition Board
- 2018 NCTM Legislative Platform (online under Advocacy)
- Steps toward more “political statements”



2018 Leaders Conference

2018 NCTM Affiliate Leaders Conference

July 9–11 • Indianapolis

Impact to Action: Supporting High-Quality Teaching and Learning

Space is limited. Register today.



Affiliates are encouraged to send at least two team members to maximize the benefits of the conference.

Register by June 9

nctm.org/Affiliates/Events/



NATIONAL COUNCIL OF
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2018 Regional Conferences

PREMIER MATH EDUCATION EVENTS

NCTM Regional Conferences & Expositions 2018

nctm.org/regionals

HARTFORD
OCTOBER 4-6

KANSAS CITY
NOVEMBER 1-3

SEATTLE
NOVEMBER 28-30



Plan your professional development opportunities!

nctm.org/events



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Linking Research and Practice Outstanding Publication Award



5 Strategies for Scaffolding Math Discourse with ELLs

Holland W. Banse
Natalia A. Palacios
Eileen G. Merritte
Sara E. Rimm-Kaufman

*Teaching Children
Mathematics*



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Linking Research and Practice Outstanding Publication Award

Rough-Draft Talk in Mathematics Classrooms

Amanda Jansen
Brandy Cooper
Stefanie Vascellaro
Philip Wandless

quick reads
a good idea in a small package

Rough-Draft Talk in Mathematics Classrooms

Amanda Jansen, Brandy Cooper, Stefanie Vascellaro, and Philip Wandless

Think (a seventh grader): The kind of really shy as Tim. He's super conscious about when it comes to answering in front of people. . . . I was, like, always nervous that it would be wrong (Jansen 2006, p. 416)

Some students are reluctant to participate in whole-class discussions. But if they do not participate, their peers will not learn from them. During discussion, many students believe that they should perform a "final draft" of correct and complete solutions (Jansen 2009). How can we create a classroom culture that supports continued learning during classroom discourse? Exploratory (or rough-draft) talk is one such productive strategy. Learning anything new involves "working on understanding" (Damon 2008, p. 3). Rough-draft talk looks like idea events, expressions of uncertainty, and incomplete or imperfect sentences.

Rough-draft talk is talking to learn. Familiar to students from language arts, rough-draft talk occurs when ideas become more organized and organized. Similar to writing, rough-draft talk is an iterative process.

Creating a normative practice of rough-draft talk supports the engagement of more students. If rough-draft talk is valued, brainstormed ideas are welcomed. More students are likely to take risks rather than freeze during challenging tasks. Fostering a wider range of contributions invites greater involvement, in contrast to the same students who participate frequently or not at all.

When to share create space for rough-draft talk, they continue to choose mathematical tasks that promote particular understandings, but they adjust their classroom discourse practices. For instance, to promote rough-draft talk, teachers talk more explicitly about how people learn and the role of talk in learning, highlighting that learning takes time and that talking through in-progress ideas supports learning. Three principles and practices support rough-draft talk. (See table 1.)

Principle 1: Foster a culture supportive of intellectual risk taking. Explicitly tagging initial discussions of solutions as "rough draft" encourages students to share in-progress thinking. This tagging reduces the threat of being wrong. A non-evaluative stance by the teacher engages students.

To create a culture of risk taking, a teacher used a non-evaluative routine to discuss student thinking. She displayed a task and directed students to first use rough-draft talk in small groups. Groups shared initial ideas

Edited by Alexandra King, *Stefanie Vascellaro*, *Amesbury High School, Amesbury, Massachusetts*, and *Jillie Anagnostis*, *University of Massachusetts Lowell, Lowell, Massachusetts*. Readers are encouraged to submit manuscripts through <http://nctm.org/submit>.

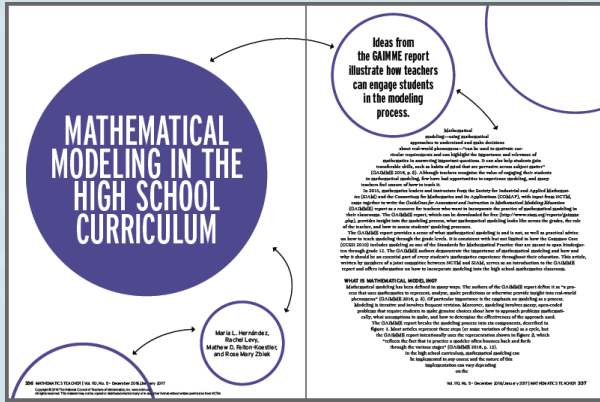
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*Mathematics Teaching
in the Middle School*



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Linking Research and Practice Outstanding Publication Award



Mathematical Modeling in the High School Curriculum

Maria L. Hernandez

Rachel Levy

Mathew D. Felton-Koestler

Rose Mary Zbiek

*Mathematics
Teacher*



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Thank You

Matt Larson

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