1. ELIMINATE STUDENT AND TEACHER TRACKING

When schools offer different tracks for math classes, the result is that some students are denied access and an equal opportunity to learn and succeed in mathematics. Tracking forces many students into learning experiences which are less engaging, less rigorous, and with lower expectations for learning. These dead-end tracks are not mathematically meaningful, nor personally or professionally valuable to the student and virtually impossible to escape. In many cases placement in these lower tracks is more closely connected to race, gender, or socioeconomic status than the student's potential to be successful in the classroom.

Math teachers are often tracked with those with the most experience, or those perceived as the most effective, assigned to upper-level math courses and the teachers with the least experience assigned to entry-level courses or students with the highest needs. Providing each and every student with high-quality instruction and reducing teacher isolation and burnout can be achieved by balanced teaching assignments and collaborative planning and assessment.

2. ALL STUDENTS NEED TO LEARN A SET OF ESSENTIAL CONCEPTS

Each and every high school student should understand and be able to use the Essential Concepts outlined by NCTM. These Essential Concepts, including statistics, provide students with the opportunity to expand their professional opportunities, understand and critique the world, and experience the joy, wonder, and beauty of math. In our data-driven and information-based world, students need the skills to assess and validate claims, consider STEM and other careers, and establish themselves as a user and doer of math.

3. ENGAGING AND EMPOWERING MATH INSTRUCTION FOR ALL STUDENTS

For too many students high school math is not engaging or interesting, which can lead to disliking math and a belief that they are not good at mathematics. By using research-informed and equitable teaching practices, teachers can engage students in learning, and this empowers them to see themselves as capable learners and doers of math.

4. HIGH SCHOOLS SHOULD OFFER CONTINUOUS FOUR-YEAR MATHEMATICS

Enrolling in rigorous and engaging math courses every year of high school maximizes students' opportunities following graduation and prepares them to actively engage in democratic society. A common pathway, focused on the Essential Concepts, for all students in a single school setting works to ensure each and every student's access to high-quality mathematics and avoids the creation of separate and unequal tracks. Course selection after the common pathway should be based on students' needs, goals, and interests.

The National Council of Teachers of Mathematics (NCTM) is the world's largest mathematics education organization, dedicated to high-quality mathematics teaching and learning for each and every student. With 60,000 members and more than 230 Affiliates, NCTM provides leadership, resources, professional development and advocacy in support of mathematics education.

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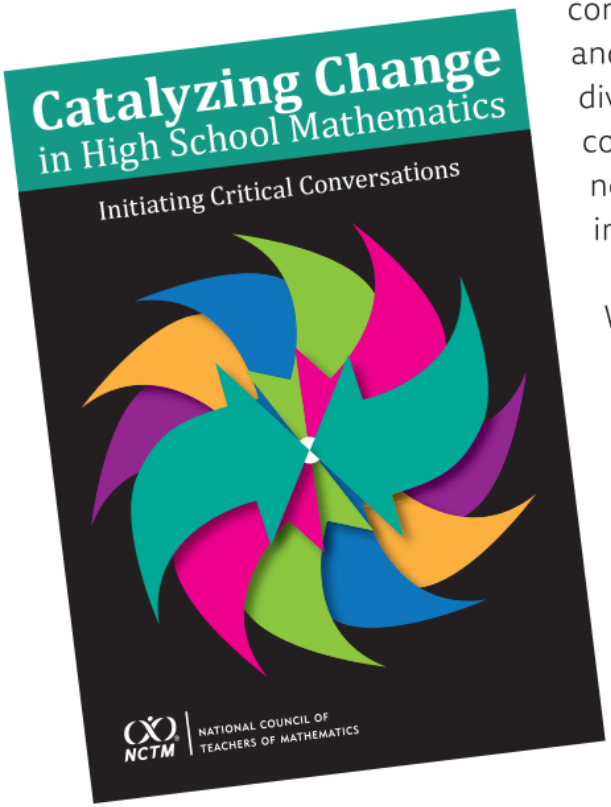
nctm.org

CATALYZING CHANGE IN HIGH SCHOOL MATHEMATICS

Catalyzing Change in High School Mathematics: Initiating Critical Conversations brings focus to the vexing barriers that have long impeded meaningful and necessary change in high school mathematics.

This work is critical. It will not be easy, since the challenges are real and longstanding. *Catalyzing Change* is NCTM's call to all stakeholders to be part of open and serious discussions coupled with collaboration, communication, and work across diverse groups and communities. The need for change and improvement is urgent.

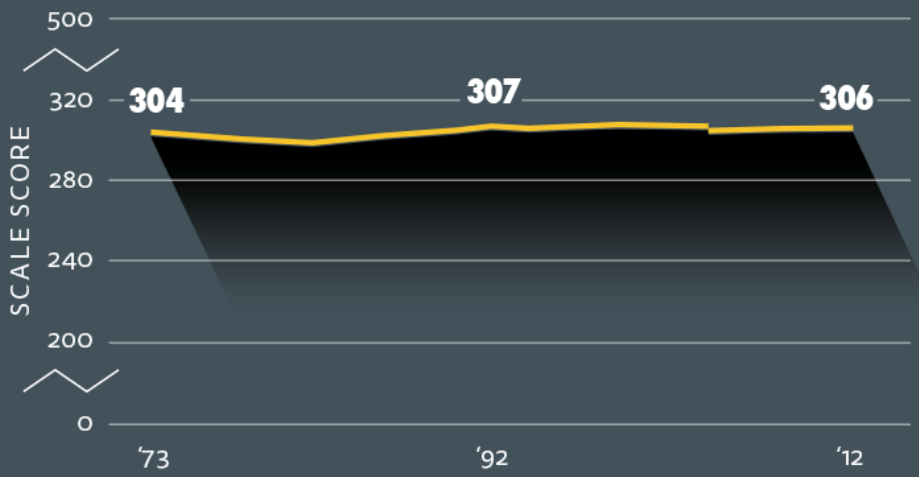


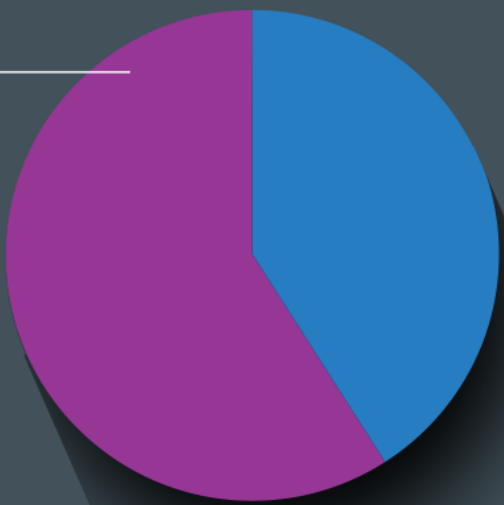
We owe this effort not only to our students but also to ourselves as we work together to create and nurture the society we wish to inhabit.

nctm.org/change

HIGH SCHOOL MATHEMATICS IS NOT WORKING

High school math scores have remained flat for the past 40 years.





59% of students are not ready for college math

Source: National Center for Education Statistics (2013). *The Nation's Report Card: Trends in Academic Progress 2012* (NCES 2013–456). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education, Washington, D.C.

MANY STUDENTS NOT SUPPORTED BY HIGH SCHOOL MATHEMATICS

Abilities to apply and interpret mathematics are not developed.

Problem-solving and analysis skills are not developed, limiting students' meaningful participation in democratic institutions.

Access is denied to meaningful mathematics through lower-level courses or terminal pathways.

Learning experiences foster student identities as not capable of mathematics impacting their futures.

ALL HIGH SCHOOL STUDENTS, REGARDLESS OF GENDER, RACE, CLASS, OR ETHNICITY, MUST HAVE ACCESS TO AND BE SUPPORTED IN DEVELOPING THE MATHEMATICS THAT WILL SERVE THEM WELL IN THEIR FUTURE.

THE TIME IS NOW. WE NEED:

DISTRICT LEADERS

Analyze your policies and practices. Do they restrict students' access to high-quality math? Review district's approach to teacher assignments and student placement to eliminate tracking.

SCHOOL LEADERS

Analyze teachers' assignments. Are they balanced and collaborative to create consistent and engaging learning environments for all students?

MATH TEACHERS

Is course planning collaborative? Collaborate with colleagues on shared teaching strategies. Assess how your students' learning experiences builds their mathematical identities.

UNIVERSITY LEADERS

Analyze the impact of policies and practices, such as math admissions policies. Build seamless pathways between high school and college curricula and collaborate with local math teachers.

POLICY MAKERS

Are policies supporting each and every student? Develop policies that support the study of math by all students and a four-year pathway that supports the Essential Concepts and prepares students for professional opportunities.

TRACKING IS INSIDIOUS

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

Tracking for mathematics places some students into terminal mathematics pathways that are not mathematically meaningful and do not prepare them for any future success. Students rarely are able to escape this track.

Teacher tracking increases isolation and burnout for early career teachers, reduces collaboration, and does not take into account expertise and need when assigning courses.