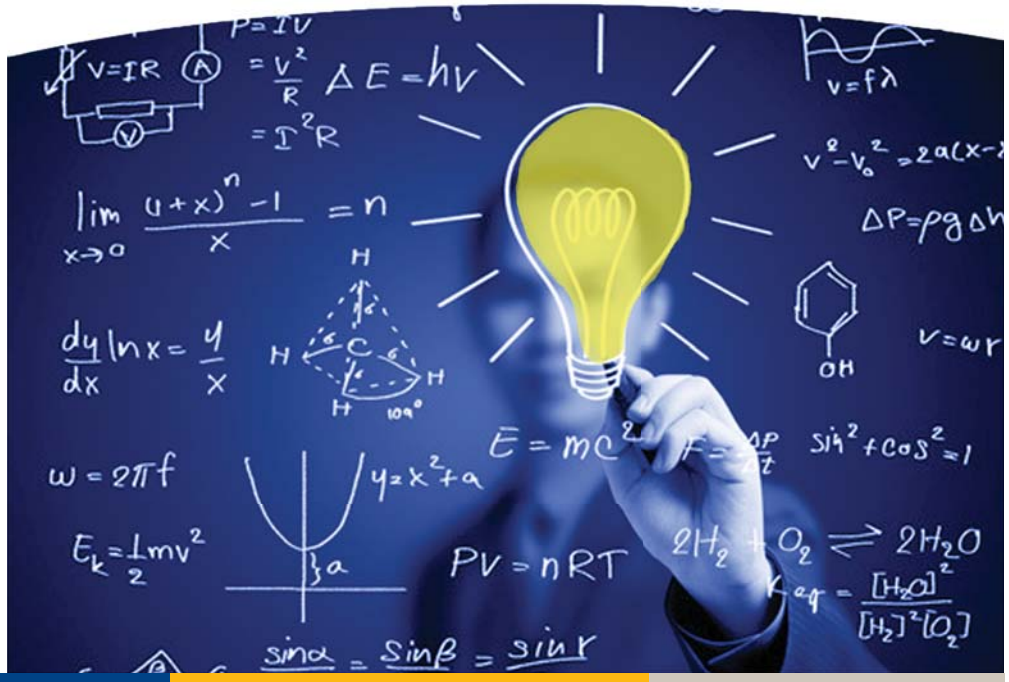
MATHEMATICALLY CONNECTED COMMUNITIES

*Our **vision** is to improve student achievement and the teaching and learning of K-12 mathematics by building a statewide learning community of mathematics educators, mathematicians, and public school leaders.*

Who We Are

MC² is a group of dedicated math educators, teachers, mathematicians, researchers, and school/district administrators who are working collectively to improve mathematics learning for K-12 students across New Mexico.

As a research-based organization, MC² understands that change and improvement in mathematics teaching and learning results from meaningful, authentic, classroom-based experiences where teacher expertise is recognized and used as a resource for improving practice.



All About Discovery!™
New Mexico State University
mc2.nmsu.edu

Partnership Goals

The goal of Mathematically Connected Communities (MC^2) is to improve the mathematics learning for students in grades K-12 through professional learning experiences that

1) Build teacher mathematics knowledge and pedagogical skills for effective teaching.
2) Promote district capacity for creating support systems and structures for educator ongoing, job-embedded professional learning.

What professional learning does MC^2 provide to partner districts?

1. SUMMER MathLab™

Imagine a week where:

- Each morning, teachers observe student learning in an elementary, middle, or high school classroom. The primary purpose is to study classroom practice and students' mathematical understanding while having an opportunity to reflect with colleagues about the lesson taking place in an authentic classroom.
- In the afternoon, teachers deepen their own mathematical knowledge to better understand the requirements of the Common Core State Standards in Mathematics (CCSS-M) at their grade level. Through engaging in rich mathematical tasks, teachers consider lessons and instructional strategies that build conceptual understanding, and foster a community of diverse students collaboratively working as young mathematicians.

MathLab™ supports classroom practice by studying elements of a standards-based learning environment (SBLE) and deepens teacher pedagogical and content knowledge aligned with the Common Core State Standards in Mathematics (CCSS-M). **Student lab classrooms** are video-streamed live to observation rooms where teacher participants discuss, reflect, and collaborate on

- How students learn mathematics
- Effective pedagogical practices
- Math content for teaching

"How joyful to learn from my students...deepening my own mathematical thinking."
– Participant, Summer Math Institute

2. SUMMER MATH INSTITUTE

Partner district teachers who attend MathLab™ have an additional opportunity of studying mathematics to deepen their individual understanding of mathematical concepts. In the one-week Math Institute, teachers

- Continue to develop pedagogical content knowledge relevant to the mathematics they teach.
- Work alongside mathematicians to deeply understand the conceptual underpinnings of Common Core concepts.
- Build a repertoire of strategies for incorporating the CCSS Mathematical Practices in daily lessons.

3. CUSTOMIZED SUPPORT

MC^2 Math Education Specialists work alongside teachers in the classroom to provide **On-site Follow-up** and **Classroom-Based Support** tailored to school/classroom needs. These include:

Collaborative Teaching and Learning Cycle (CTLC)–A non-evaluative, 3-hour process where a team of teachers collectively plans, implements/observes, and then reflects/debriefs a lesson and brainstorms new ideas to incorporate into their classroom practice.

Mathematics Content and Pedagogy Workshops– Organized by grade specific math topics.

MC² Online Resources–Teachers in K-12 rural or isolated areas have various options for professional learning to connect with colleagues and access resources through video-conferencing. Additional support for teachers across the state includes but is not limited to *webinars*, *YouTube Channel videos*, and *website materials*.

"Learning math from a student's perspective has given me a deeper understanding of the struggles that students go through when we ask them to use numbers in base 10. What I thought of as simple, I now see as truly complex." *– Participant, Summer Math Institute*

4. LEADERSHIP DEVELOPMENT FOR ADMINISTRATORS

Principals have the power to make or break a school initiative. They set the tone, lead the vision, prioritize the focus, and create school cultures that promote a climate of learning and collaboration. MC² provides opportunities for principals to personally undertake the study of mathematics and pedagogy in order to refine their leadership and management skills directly tied to improving mathematics teaching and learning.

Leadership Academies: During MathLab™ district/school leaders increase their capacity to provide the *Support Surround* needed for teacher professional learning (e.g., structures for ongoing teacher collaboration, scheduling and allocating resources, knowing what to look for in math classrooms, providing feedback to teachers for continued growth, and monitoring implementation).

Leadership Team Meetings: Throughout the school year, as needed, MC² staff facilitate reflective conversations regarding school/district action plans for mathematics teaching and learning.

What other avenues are there for mathematical professional growth and leadership development?

TEACHER LEADER CADRE (TLC)

MC² values New Mexico teachers' expertise and believes in providing year-long opportunities for professional growth and leadership development. With a multi-tiered approach, K-12 teachers are invited to develop, plan, implement, and present workshops across the state.

This initiative:

- Builds the capacity of educators to support effective teaching and learning with colleagues.
- Builds a network of teacher leaders who study and enhance their instructional practice while serving as professional learning leaders at their school sites and districts.
- Provides a structure for teacher leaders to develop content and pedagogical knowledge and leadership skills including designing and facilitating learning during MathLab™ and Institute.
- Provides opportunities to work with mathematicians and math educators to deepen their math understanding.

"An effective teacher leader leads outside of the walls of her classroom. She works with colleagues and administrators to share knowledge. She sets up opportunities for others to learn by doing. She is an active listener who encourages the heart."
– Teacher Leader

WHY PARTNER WITH US

With over 15 years of experience and recognized as a promising STEM program by ***Change the Equation,*** MC² offers research-based resources and services for:

- Developing a collaborative, professional learning system.
- Building teacher and leadership capacity for implementation of rich mathematics teaching and learning.
- Improving student learning and achievement in grades K-12 mathematics.
- Strengthening teacher and school/district leader mathematical content knowledge.
- Enhancing mathematics teaching practices.
- Customizing professional learning opportunities.
- Providing ongoing support for changing practice.
- Increasing access to professional learning opporunities for teachers in rural and isolated areas.
- Supporting teachers in providing rich experiences that promote student thinking, student discourse, rich questioning, multiple perspectives, and collaboration.

"When I think of MC², I think about their support in trying to help us become better teachers.

I used to think that they were only helping us implement CCSS-M, but I have come to realize that what they are teaching us can be used no matter the curriculum. I enjoy how they demonstrate their practices, rather than just telling us. I think of collaboration, ideas, strategies and math."

– Roswell Teacher

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PARTNERS

New Mexico Partner School Districts
New Mexico Public Education Department
Regional Education Cooperative (REC 3)
University New Mexico Taos
Western New Mexico University
NMSU Creative Media Institute
Research and Evaluation
- UNM Center for Education Policy Research
- NMSU STEM Outreach Alliance Research (SOAR) Lab

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