

The UC Davis Mathematics Project

The UC Davis Mathematics Project is a cooperative school/university program committed to the enhancement of standards-based instruction and student achievement in mathematics. As a site of the California Mathematics Project, the UCDMP works with districts, schools and individual teachers in a variety of areas, including professional development and continuing education for teachers, research on areas related to effective mathematics instruction, inservice and preservice programs for teachers, and enhancement of the teaching profession. As a part of the CRESS Center in the School of Education, the UCDMP is part of a larger campus effort to extend the resources of the university to northern California schools.

The overarching goal of the UCDMP is to raise student achievement in mathematics by:

- Developing and enhancing teachers' content knowledge and instructional strategies aligned with the *California Mathematics Content Standards* and state-adopted textbooks.
- Expanding opportunities for professional development in mathematics by developing a network of teacher leaders.
- Improving the mathematical achievement of students in low-performing districts through partnerships and collaboration.
- Developing and maintaining a professional mathematics education community that creates ongoing opportunities for teacher networking and learning.

Ultimately, the goal of the UCDMP is to enhance the quality of mathematics education by increasing teachers' mathematical content knowledge and pedagogical content knowledge, and by supporting and developing leadership skills.

School-Year Activities

The UC Davis Mathematics Project is perfectly situated to assist you in meeting your staff development needs in the area of mathematics. All UCDMP programs are standards-based and focus on mathematics achievement for **ALL** students. We have a large roster of teachers/consultants able to provide ongoing, research-based professional development programs in mathematics for teachers in grades K – 14. These programs are custom developed to meet the needs specified by schools and school districts. Recent programs, based on the *California Mathematics Content Standards*, include:

- Standards-based instruction
- State-adopted instructional materials
- Use of assessment and intervention
- California High School Exit Exam (CAHSEE)
- Deepening teachers' knowledge of mathematics content
- Leadership development in mathematics
- Connecting and interweaving the strands of mathematics
- Developing and implementing a school-based plan for mathematics reform
- Developing problem solving and mathematical reasoning skills
- Technology

Programs take different forms depending upon the grade level, resources of the sponsor, and time available for the sessions. They can range from a few hours to several weeks in length and also may include workshop series that can be spread over several weeks or months. Sessions can be scheduled for half-days, full-days, after school, evenings, Saturdays, and/or summer.

Summer Activities

Each year the UC Davis Mathematics Project holds a summer leadership institute. The purpose of this institute is to provide an opportunity for teachers from different school districts and different grade levels to meet and work together. Approximately twenty-five teachers are selected based on their grade level, classroom experience and ability to provide professional leadership in their schools and school districts.

Mornings are spent working with faculty from UC Davis and other local colleges and universities to develop and deepen the teachers' understanding of critical mathematics concepts in the areas of number sense, algebra and algebraic thinking, geometry, probability, and statistics. The afternoons are spent addressing a variety of issues central to the enhancement of teaching, learning, and the teaching profession. While outside speakers provide some of the sessions, the bulk of the afternoons are built around developing standards-based instruction that actively engages students in learning mathematics.

In addition, the UCDMP offers content-based workshops for teachers in grades K-12. These workshops focus on specific content standards at specific grade levels in an effort to provide additional strategies and techniques that will support teachers in ensuring that all students meet the standards.

Schools and districts can access many funding sources, including:

- II/USP
- High Priority School
- No Child Left Behind

Assumptions

Some of the assumptions that determine the direction of the project are:

- Mathematics must be taught so that all learners can appreciate its inherent beauty and fascination.
- The responsibility for preparing students in mathematics is shared by schools, colleges, and universities. These same institutions must cooperate in addressing problems associated with student preparation in mathematics.
- Our concept of basic skills must emphasize understanding, which goes beyond memorization of facts and mastery of algorithms.
- Problem solving can and must be taught. To do this, mathematics teachers must themselves become problem solvers.
- Changes in mathematics instruction should begin with reflection on successful practice, including the use of reliable and effective research. The knowledge and talent of successful, experienced teachers must be recognized and used.
- The improvement of education requires enhancement of the teaching profession, both in terms of standards for the profession and the responsibilities assumed by its members.

Additional Activities

Study groups of various sizes and duration can be established for groups of teachers seeking to enhance their mathematical knowledge of topics underlying the standards.

Teacher research groups provide additional opportunities for teachers to systematically observe, record, reflect upon, discuss, and describe those aspects of teaching which in their experience contribute to student understanding and success in meeting the standards.

For further information about the UCDMP, contact:

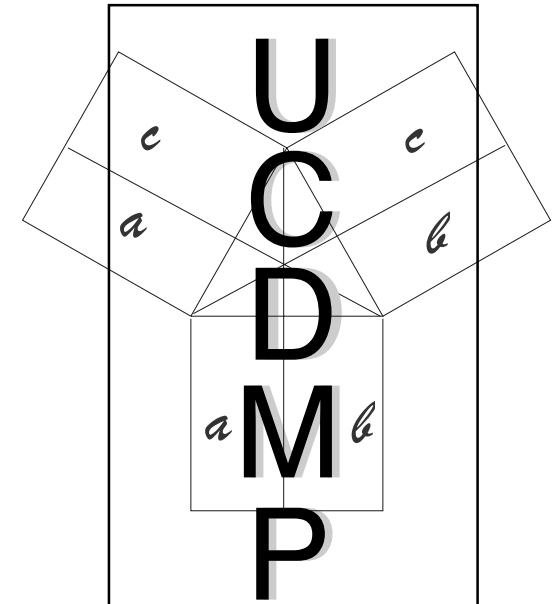
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An Educational Partnership

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