

TEACHERS BENEFIT FROM

PROM/SE

PROFESSIONAL DEVELOPMENT

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Director of Communications

MORE THAN 600 Michigan and Ohio teachers went back to school this summer during the PROM/SE summer academies. PROM/SE, the National Science Foundation-funded program that stands for Promoting Rigorous Outcomes in Mathematics and Science Education, held the weeklong academies in three locations in Ohio and Michigan. The academies drew K-12 teachers from nearly 60 participating districts.

The PROM/SE academies help teachers develop a deeper understanding of the mathematics and science they teach. "I learned a lot of new concepts to add to my math teaching," said a teacher participant in the *Proportionality Across the Strands: Number, Algebra and Geometry* course for middle school teachers. Teachers in all courses learned to support and appreciate the power and complexity of student scientific and mathematical thinking, and how to address common student misperceptions.

Internationally renowned mathematician Hung-Hsi Wu, a professor of mathematics at the University of California at Berkeley, taught a course on understanding fractions for K-6 elementary teachers. He feels that teaching teachers the fundamentals of mathematics is important. "Mathematics is, on the whole, like a pyramid. Students need a solid understanding of basic concepts on which to build," notes Wu. Emphasis on learning foundational concepts such as whole numbers, fractions and certain aspects of geometry are critical to later success in algebra and follow recommendations by the National Mathematics Advisory Panel.

PROM/SE professional development helps teachers understand mathematics and science concepts taught two grades below and two grades beyond their class so that

teachers can tie together these concepts in their classrooms and help students understand broad themes that unfold in the disciplines.

While the intensive work with K-12 mathematics teachers has concluded as part of PROM/SE, the work with science teachers continues with professional development throughout the 2007-08 school year.

PROM/SE is offering three interrelated sessions called *The Evolution of Everything*, which will help teachers explain change in the physical and biological systems from the big scale to the small, including the origin and evolution of the universe, Earth and life.

"The concepts of physical and biological change run through the entire K-12 science curriculum," says Danita Brandt, PROM/SE director of science and a professor in MSU's Department of Geological Sciences. For example, talking about the breakdown of rocks and the development of soil are two small-scale changes that lie along the continuum of changes that began at the Big Bang.

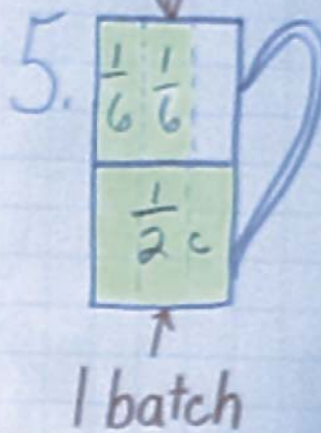
Brandt notes that the PROM/SE science professional development helps teachers respond to questions about key scientific concepts from students at all levels. In parallel with the content, teachers also explore the nature of scientific inquiry and student scientific reasoning. For more information, visit www.promse.msu.edu.

1	3	5
2	4	6
7	8	12

Whole Square = 1C flour
 1/2 Square = 1 batch

$\frac{2}{3}$

1c. = 2 batches



$$\frac{5}{6} \times 2 = \frac{10}{6} = 1\frac{2}{3}$$

batches

