



# Transforming East Alabama Mathematics

*The East Alabama Partnership for the Improvement of Mathematics Education*

When East Alabama students returned to school in August 2004, they found their mathematics classes to be a little different. And for math teachers in these same schools, teaching math involved some changes as well.



Strutchens



Martin

The TEAM-Math program, a \$9 million effort funded by the National Science Foundation, is offering a new approach to teaching mathematics for elementary and secondary teachers. TEAM-Math—short for Transforming East Alabama Mathematics—strives to help students better understand and appreciate mathematics.

The five-year funded research effort includes 12 school districts in partnership with AU's College of Education and College of Sciences and Mathematics, as well as Tuskegee University. These school districts are located in Alabama's Chambers, Elmore, Lee, Macon, Russell and Tallapoosa counties.

The program is directed by Dr. Gary Martin and Dr. Marilyn Strutchens in the college's Department of Curriculum and Teaching. Martin cited TEAM-Math as addressing a chronic problem in our society.

"Students in our state, and East Alabama in particular, are performing among the lowest levels in our nation," he said. "To be competitive, we must ensure that all students in our region are well prepared mathematically."

Nearly 400 teachers from 25 East Alabama schools attended TEAM-Math's 10-day Summer Institute in June 2004. During the Institute, teachers became mathematics students themselves as they explored a variety of mathematics concepts.

For example, teachers used wooden geometric shapes, such as triangles, squares and hexagons to understand fractions—some of the very tools they would be using to teach their students. And the lights were out in some of the sessions for high school teachers, as they used flashlights to create shadows to explore similarity and other concepts.

"One thing we [talked] about [was] how learning math concepts on a higher level can help children in all disciplines," said Amy Hopkins, a



first-grade teacher at Oliver Elementary School in Seale. "We are learning about activities we can incorporate in our classroom to expand higher order thinking skills and to challenge our students."

TEAM-Math focuses on teaching strategies that foster students' critical thinking skills through solving a variety of problems. When students are challenged to solve "real-world" problems to which they can relate, students better retain these math skills and can better approach similar problems in the future.

Becky Scarborough, a teacher in Auburn's Wrights Mill Road Elementary School, found this hands-on approach helpful to students.

"The students learn more during their free discovery time," she said. "Trial and error is one of the most beneficial ways for them to learn."

Strutchens agrees that the hands-on approach is one of the best ways to teach students.

"This type of hands-on, analytical thinking is engaging our students and showing them ways

to use mathematics in everyday problem solving," Strutchens said. "This approach also provides a foundation for learning and using the basic facts, since they are integral to solving many problems."

Throughout the year, teachers have attended quarterly follow-up meetings, where they continued to build their knowledge and examine the content they will be teaching in the next quarter.

TEAM-Math is also working with districts to develop a focused and aligned curriculum, and to improve the preparation of new teachers at the universities.

Furthermore, TEAM-Math sponsors a multicultural literature program, a series of sessions in which parents and students explore mathematics together through reading children's literature and solving related mathematics problems. This provides both children and parents new insights into mathematics, and gives parents a better understanding of TEAM-Math.

Teachers from the first group of schools will return for an additional week of training this summer. A new group of 23 schools will also begin their involvement in the program with a two-week institute this summer.

