

Build and Connect Math Concepts Through In-Depth and Technology-Rich Explorations

Project Title: Build and Connect Math Concepts Through In-Depth and Technology-Rich Explorations

Project Director: Dr. Linda Plymate

Lead Institution: Missouri State University

Duration of Project: Two years (Cycle-9 is the second year for this project)

Grade Level Focus: 9-12

Credit Hours to be Provided: 3graduate credit hours

Project Summary:

This 2-year project will be a continuation of an effort to bring together high school mathematics teachers from rural high needs school districts in western Southwest Missouri, to continue to study the use of in-depth and technology-rich explorations for improved math learning. The project will build on work done in year 1 with participants to embrace inquiry-learning as an effective math pedagogy strategy. Staff from Missouri State University and the Southwest Center for Educational Excellence, rural teachers, administrators, and members of business and industry will work together to develop a comprehensive 1-week immersion summer institute with follow-up workshops and observations during each academic year to address increasing needs of these math teachers at the secondary level. Getting quality professional development into these rural schools will also help their staff reach the ultimate goal of improved student achievement. Year 1 of this project continuation focused on geometry and measurement. Year 2 will focus on probability and statistics. Connections to other math topics will also be incorporated to serve the needs of partner schools using integrated curriculums. Paramount to this project is a continued effort to move math instruction from an emphasis on procedural fluency to a more inclusive design that interweaves conceptual and procedural understanding, the ability to formulate, represent and solve mathematical problems, and the capacity for logical thought, reflection, explanation, justification, and sense making. Problem-based instruction, use of current technology for student exploration (software, interactive computer sites, calculators, data-collection probes), and development of curriculum and assessment will be employed in the project to encourage this movement. Beliefs about how students learn, effective feedback, and student engagements strategies will also be examined over the course of the project.