Faculty involved in a National Science Foundation Teacher Enhancement Project were influenced to make substantial changes in the university middle grades mathematics teacher certification program. The three-year teacher enhancement project provided opportunities for middle grade mathematics teachers, administrators, and university faculty to collaboratively investigate and discuss standards-based middle grades mathematics curricula. New mathematics courses were designed focusing on algebraic structures and geometry. Collaboration with College of Education faculty increased and focused on linking mathematics content instruction, discussion of pedagogy, and authentic field experiences, each as necessary and supportive components of middle school teacher preparation. The purpose of our session will be to describe and illustrate certain aspects of these special mathematics courses for middle grade mathematics education majors. We will discuss the interface of pedagogical and content issues, as well as, provide concrete examples of student work. (Received May 22, 2000)