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Newton, MA 02458. *Mathematics for Teaching*.

The importance of content knowledge for effective mathematics teaching has never been disputed. Until recently, the common practice in teacher preparation institutions was to provide content backgrounds via “standard” mathematics courses—one or two courses for prospective elementary teachers and the equivalent of an undergraduate mathematics major for prospective secondary teachers.

A closer examination of the teaching profession suggests that teaching mathematics requires a specialized knowledge of the discipline that may not be completely addressed in traditional mathematics courses.

This presentation will look carefully at the mathematical preparation of high school mathematics teachers, starting from an analysis of the mathematical knowledge such teachers encounter in their work. This mathematics is not confined solely to the mathematics of the lessons teachers teach. Central ideas from algebra, number theory, geometry, and analysis not only form the basis for many of the topics in school mathematics—they also give one the mathematical foundation for effective lesson planning, assessment, and classroom management. (Received June 10, 2005)