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The mathematical preparation of elementary teachers has been at the center of attention in recent years. From research studies two important results emerge: (a) courses in undergraduate mathematics pedagogy contribute more to student performance gains than do undergraduate mathematics courses; (b) teacher's mathematical knowledge for teaching is significantly related to student achievement. Based on these results and following the recommendations from NCTM and CBMS, we have designed a sequence of three courses for preservice teachers. The courses include: Numbers and operations, Geometry and measurement, Data analysis and probability. The courses use inquiry based learning methodologies, where the students are actively engaged, finding out and building on their previous knowledge, developing concepts and making meaningful connections. Multiple representations and alternative strategies are emphasized, encouraged and explored. Mathematical communication is modeled, motivating students to engage in discussions, share strategies, and bring out understandings. All these activities built the preservice teachers mathematical knowledge for teaching. We have offered 12 section of Math208, 336 students, 9 sections of Math209, 250 students, and 3 sections of Math210, 30 students. (Received September 27, 2005)