At the University of Nebraska-Lincoln, all students in the elementary education program are organized in cohorts of approximately 25 students each to participate in The Mathematics Semester. During this semester, students take a block of four courses (ten credit hours) that integrates mathematics instruction with pedagogical instruction and field experiences. The courses include a math methods course and a mathematics courses that have many assignments that count for credit in both courses. Students also take another pedagogy course and participate in a field experience course under the supervision of master teachers at a local elementary school. We will discuss our experiences with The Mathematics Semester and how the approach supports our efforts to deepen our students’ understanding of mathematics while connecting the mathematics they study to the tasks faced by an elementary school teacher. Special attention will be given to our use of homework and writing assignments to develop future elementary teachers who exhibit the habits of mind of a mathematical thinker. (Received September 20, 2007)