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John R. Prather* (prather@ohio.edu), Ohio University-Eastern, 45425 National Road, St. Clairsville, OH 43950. *How Would Muppets Multiply? Using Base 6 in Courses for Future Mathematics Teachers*. Preliminary report.

Two of the main goals of a Mathematics for Elementary School Teachers class are to help the students understand the mathematics they will teach on a deeper level, and the process that students undergo as they learn mathematics for the first time. To accomplish these goals, I begin each quarter with the question, “How would we count if we only had six fingers?” like the muppet Gonzo. We then “invent” a new system of counting, complete with six new symbols, and learn to count using it. Throughout the course, in addition to using base ten, we learn how to do all of the major number theoretical topics of the course using this base six system. By the end of the course, students gain a fundamental grasp of the principles behind the algorithms we use for calculation, and how the choice of base affects certain properties of numbers. Finally, they more fully understand what it is like to learn mathematics from the beginning just as their students will. (Received September 14, 2007)