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1003-X1-975 **Judith Harper Morrel*** (jmorrel@butler.edu), Butler University, Department of Mathematics & Actuarial Science, 4600 Sunset, Indianapolis, IN 46208. *Using Problem Sets in Calculus.*

In response to the call for the use of reformed teaching/learning techniques to promote student learning in calculus, some mathematics instructors have developed sets of student projects or laboratory experiences which use real-world, multi-step, context-free problems to hone "thinking" skills and provide practice in modeling and in writing up mathematics. Drawbacks to this approach include the time or technology required. As a "middle ground," I have found the use of problem sets is an effective way to give students some of the benefits of working on difficult problems without devoting quite so much time or requiring a laboratory or dedicated classrooms. This strategy, which involves assigning non-textbook problems that are somewhere between full-blown projects and routine homework, allows me to require high level thinking skills from my students, forces them to write mathematics carefully and coherently, and encourages collaboration among students (which, in my opinion, is a good thing.) This talk will describe the implementation of this strategy in my calculus classes at Butler University. Included will be sample problem sets, samples of student work, as well as grading rubrics. (Received October 01, 2004)