

1086-D5-870

Joy L. Becker* (joy.becker@wartburg.edu), Mathematics, Comp. Sci., and Physics Dept., 100 Wartburg Blvd, PO Box 1003, Waverly, IA 50677, and **Brian J. Birgen** (brian.birgen@wartburg.edu), Mathematics, Comp. Sci., and Physics Dept., 100 Wartburg Blvd, PO Box 1003, Waverly, IA 50677. *A Modeling Approach for First Semester Calculus.*

Calculus at Wartburg is taught from the perspective of modeling with differential equations. Students construct models and solve differential equations using VenSim PLE, a numerical solver which is free for educational use. These models, including bungee jumpers, hot air balloons, and rockets, are beyond the scope of a typical first semester calculus course, but are easily achieved using VenSim. The final project in the course requires students to make connections between calculus and various partner disciplines, underscoring the relevance of mathematics to their future careers. (Received September 14, 2012)