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Josh W. Helms* (josh.helms@usma.edu), 565C Connor Loop, West Point, NY 10996, and

Keith A. Erickson. *Using Digital Video and Data Collection Software to Make Math Class Fun.*

We applied the technology of digital video and Logger Pro data collection software to collect data on moving objects in order to integrate physics and real data in the math classroom. The key objectives for this activity were leveraging technology to collect real data, transforming the real data into a math model, and using this model to make accurate predictions. Specifically we performed an experiment to explore the principle of conservation of momentum. We recorded the positions of two cars moving on a frictionless air track before and after the cars collided and measured the positions from the digital video. By modeling the data, we determined the velocity of the cars and used the conservation of momentum and the known mass of one car to accurately predict the mass of the other car. We will discuss our results and aspects of this project that can be applied generally to other activities. (Received September 20, 2007)