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James A Sellers* (sellersj@math.psu.edu), Department of Mathematics, Penn State University, University Park, PA 16802. *Getting the "feel" for centers of mass.*

In this talk, we will discuss a manipulatives-based approach to helping first-year calculus students learn about centers of mass. We will model this technique by demonstrating the kinds of manipulatives which can be used, and we will discuss how such an activity can shed light on other needs the students have when learning about this subject (including trying to determine the function(s) necessary to define the boundaries for given two-dimensional objects, setting up a wise coordinate system in which to envision such shapes, and working with the definite integrals which can arise in the context of finding the center of mass of a given object). (Received September 10, 2011)