Mastery Based Testing (MBT) is a testing method designed to promote full learning while reinforcing important material in a way that allows students multiple opportunities to receive full credit. To place the emphasis on fully learning the course material, I have made several specific adaptations to the standard method for a Calculus I course to better serve my students. For example, I adapted my office hours to accommodate more retake opportunities, required effort between in-class testing periods, and facilitated the process of making connections between course material by providing a table relating the various concepts. The past two semesters I have taught the course, I have also experimented with allowing students to choose their testing method. The rationale and implementation of these adaptations will be discussed and recommendations for introducing MBT for introductory level courses will be given. (Received September 25, 2018)