STEM (science, technology, engineering and mathematics) retention is a major problem in most colleges and universities, especially HBCUs. A broad model of support systems that includes psychological factors is adopted to address retention in biology and mathematics. The purpose of our study was to develop an instrument to identify the support needs of college students registered in College Algebra and General Biology. We adapted the theoretical model of the performance pyramid to create a 70-item measure called the Student Support Needs Scale. We examined the psychometric properties of our scale, established the reliability and validity of the resulting instrument. This instrument could potentially help our institutional programs to make informed decisions about resource allocation based on students’ needs. (Received September 17, 2017)