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Jerome S. Epstein* (jerepst@att.net), Mathematics Dept., 6 Metrotech Center, Brooklyn, NY 11201. *Integrated Mathematics & Science - A Tested Program for Cognitive Development.*

We show two aspects. First, the real level of entering students, second an integrated math and science program that has shown real promise. We show a diagnostic test, measuring very basic skills (some 4th grade!), that has been given at some 20 colleges - from inner city through highly selective, involving students in math, physics, computer science, and general education. In all cases, there is a fraction of students that lost all concept of meaning in math before high school. Learning Support staff are often aware of this, faculty are always surprised, often shocked. In spite of all in the press, the overwhelming majority of personnel remain ignorant of the depth of the problem. What to do? There is extensive research indicating that interactive, constructivist approaches are by far the best way to make a serious dent. To do this in math, an alliance with constructivist laboratory work in the physical sciences is an obvious road. This paper also reports on a comprehensive program, developed under NSF grant, that has shown significant results, particularly with severely under prepared students. Sample lab work from the program is shown, results are analyzed, what is involved in implementing is discussed, and the obstacles to success one meets will not be hidden. (Received September 14, 2000)