During the summer of 2005, Longwood University and University of Virginia hosted a residential two-week probability and statistics institute for K-8 teachers. Forty-seven teachers from Virginia attended the institute. All were training to become mathematics specialists for their schools. The institute was led by mathematicians and mathematics educators. The institute used NCTM, AIMS, and DMI materials as well as original work. In this presentation, I discuss how we used the NCTM standards and the GAISE recommendations to design the two-week institute. I will also share the institute design and some of the mathematical ideas discussed. Preliminary report. (Received September 28, 2005)