This paper describes the development and use of a pair of instruments, a newly conceived MTEBI (Mathematics Teacher Efficacy and Beliefs Instrument) and the Mathematics Teaching Habits of Mind (M-THoM), designed to describe and document teachers’ sense of self-efficacy, outcomes expectancy, and habits of mind specific to the teaching of mathematics. These instruments were developed around the strands of mathematical proficiency (Kilpatrick, Swafford, & Findell, 2001) and the standards for mathematical practice from the Common Core State Standards (National Governors Association Center for Best Practices, Council of Chief State School Officers 2010), and informed by various theoretical and practical studies of habits of mind (Charbonneau, Jackson, Kobylski, Roginski, Sulewski, & Wattenberg, 2009; Costa, & Kallick, 2008; Ennis, 1986; Goldenberg, 1996; Perkins, Jay, & Tishman, 1997). We report on data collected from a pilot study using these newly developed instruments, and give rationale for their development. (Received September 25, 2012)