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The goal of this project is to develop and validate an instrument to measure a new construct for making sense of what it means to know mathematics. In previous research, we observed that a lack of mathematical sophistication denied the preservice teachers in our study access to both conceptual and procedural knowledge of elementary mathematics. This led us to propose a framework for describing the values and ways of knowing of the mathematical community. Now we have designed a paper-and-pencil, multiple-choice instrument to measure mathematical sophistication, and we assessed both the validity and reliability of the instrument with a large sample of undergraduate mathematics students. In this presentation, we will discuss the theoretical framework of mathematical sophistication and the development, validity and reliability of our instrument. We will share and discuss sample test items from our instrument, and elaborate on how we plan to use the instrument to study the relationship between our construct of mathematical sophistication and the retention of both conceptual and procedural knowledge of elementary mathematics. (Received September 16, 2008)