One of the important service roles of my department is the preparation of preservice elementary school teachers to teach elementary school mathematics. In fall 2013, I taught the first course, in a two-course sequence for preservice teachers, which covers number systems, number operations, patterns, relations, functions, and problem-solving. Two of the stated goals of the course were to (1) strengthen students’ ability to give mathematical explanations which are clear, complete, and of appropriate rigor, and (2) develop students’ capacity to appraise mathematical explanations, both their own and those of their classmates. This presentation will focus on how small group think-alouds were used to advance the above goals. This talk will describe problems which were used for the think-alouds, how the interviews were structured and recorded, and the rubric students utilized for appraising their own explanations and those of team-mates. It will end with an assessment of how well the think-aloud approach worked and plans for future improvements. (Received September 17, 2013)