1003-97-302   **Harvey B Keynes***, School of Mathematics, 127 Vincent Hall, University of Minnesota, MPLS, MN 55455, and **Michael S Keynes**, Mathematics, Purdue University Calumet. *Professional development programs for elementary mathematics teachers- a content perspective.* Preliminary report.

We describe a professional development program at the University of Minnesota for grades 3-6 teacher leaders to deepen their content understanding and knowledge of the central algebraic and geometric ideas in the school mathematics curriculum. The core activity is a 2 week program on Algebraic Processes and Their Connections to Geometry. This program increases teacher mathematical understanding and reasoning on the mathematical underpinings of the curriculum as well as addressing the roles of language and vocabulary in learning mathematical concepts. Descriptions of the topics and teaching approaches will be given, as well as samples of teacher- developed classroom enrichment lessons based on their improved knowledge of mathematics. Details of several academic year teacher presentations of enrichment topics and initial evidence of increased mathematical classroom leadership will be provided. Recent efforts on presenting deeper mathematical topics from a newly-developed manuscript on capstone mathematics for middle school will also be described. Finally, plans for subsequent programs for teachers completing the initial workshop and other possible future directions will be discussed. (Received September 08, 2004)