

**Meeting:** 1003, Atlanta, Georgia, MAA CP A1, MAA Session on Getting Students To Discuss and To Write About Mathematics, I

1003-A1-357      **Joyce Faye Fischer\*** (jf10@txstate.edu), Texas State University, 601 University Drive, Room 470 Math Building, San Marcos, TX 78666. *Encourage Student Writing, Learning, and Informed Discussion Through Judicious Problem Choice.*

To encourage students to discuss and to write about mathematics, and thus stimulate and reinforce their curiosity, it is helpful to use a series of problems that: a) are open ended in solution method, b) are simple to approach at the entry level, c) increase incrementally to multi-tiered difficulty levels, and d) build to exciting, engaging connections to prior knowledge in other mathematical content areas and/or extend to new ones. This presentation will focus on the use of this kind of problem in a geometry class for high school teachers. The students were asked to count a set related to a particular geometric figure, which allowed diverse interpretations, to write a description of any counting methods that they devised, and to demonstrate and explain these methods to their classmates. They were then asked to count two similar but different sized sets using the demonstrated methods to see if they were still appropriate. From these related sets, a pattern could be determined that incorporated mathematical topics, including algebra, geometry, functions, patterning, sequences, and calculus. Class evaluation forms showed the positive effects in mathematical understanding, attitude, and communication ability that the students experienced as a result of this teaching method. (Received September 12, 2004)