

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

1003-A1-514      **Mary T Treanor\*** (mtreanor@valpo.edu), Dept of Mathematics and Computer Science,  
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*The Devil Is in the Directions: Substantive Discourse from Simple Questions.* Preliminary report.

Helping students to speak and write mathematics is a daunting task for teachers-and a rewarding one. I will share ideas about materials that we teachers construct and their impact on student learning. Explicit directions and thoughtful questions can transform what might appear to be simple objective questions into stimuli for reflective, engaging mathematical discourse. Both majors and non-majors must develop the ability to communicate clearly; work suitable for each group will be included. In evaluating materials, I am explicit about my intentions. Will students work alone, or in a group? Is careful written work a goal, or is good discussion the focus? What is effective follow-up after this work is done? Different formats and their strengths will be discussed. Responding to well-formulated True-False questions, students develop confidence in articulating their thinking; for majors, this can form a bridge from writing counterexamples and informal explanations to constructing their own proofs. Two paired statements, one False and one True, help students to notice details. Matching items from two columns and noting the order in which they identify correct pairs, students obtain feedback about what they understand and what needs additional study. (Received September 18, 2004)