

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

1003-A1-640 **Benjamin M Woodruff*** (bmw@math.byu.edu), **Jason Grout** (grout@math.byu.edu) and **Casey Johnson** (cjohnson@math.byu.edu). *The Computational Fast Track*.

Integrating computational proficiency and in-depth, formal understanding in first semester calculus is a challenging task. We help students feel comfortable with the mechanics before using writing to focus on in-depth understanding.

We teach material in two phases, the "fast track" phase followed by the "whole trip" phase. The "fast track" phase is a quick introduction to new material, where students explore topics computationally, building their experience, intuition, and confidence with the material. This prepares students to explore the material in the "whole trip" phase, without getting stuck in the mechanics. The "whole trip" phase then focuses on building a formal understanding of key topics through writing assignments, in-class group projects, and proof writing. The proof writing assignments help students both read and write mathematics. Proofs are peer reviewed in class the day prior to submission.

We use a continual writing assignment involving quizzes. Students "self correct" quizzes, which means we inform them when an answer is incorrect, and they find their error and correct it as a writing assignment. This reduces time spent in grading while increasing student knowledge.

More can be found online at www.math.byu.edu/~bmw/. (Received September 25, 2004)