George H Lytle* (george.lytle@asbury.edu), 1 Macklem Drive, Wilmore, KY 40390. Do the Wave: Applying Group Finite Elements to the Shallow Water Equations. Preliminary report.

We consider the general nonlinear Shallow Water Equations. After a discussion of the Method of Characteristics solution, we propose a numerical code using Group Finite Elements. Our simulation exhibits several aspects of the analytical solution, but it is limited by the constraints on the boundary at $x = \ell$. This project was conducted at George Mason University during the 2012 Research Experience for Undergraduates program funded by the National Science Foundation. (Received August 11, 2012)