

1106-G1-327      **Sarah J Greenwald\*** ([greenwaldsj@appstate.edu](mailto:greenwaldsj@appstate.edu)), 121 Bodenheimer Drive, 326 Walker Hall,  
Department of Mathematics, Boone, NC 28608. *Linear Algebra with the Hand and  
Eye*. Preliminary report.

Educators have a variety methods available to them to deliver mathematical content and facilitate student engagement and learning. Active investigations that utilize both the hand and the eye help students make connections. This is partially what is behind longstanding methods like asking students to write up their solutions. Heavy use of visual/eye-hand portions in the brains are highlighted on imagining studies during mathematical problem solving tasks. In this manner, kinematic activities are linked to 3-D visual processing and to mathematics. I will showcase two “hand and eye” activities in linear algebra. The first is for students to use their hands plus the desk to form three planes to examine their intersections. The students relate the kinematic experience with graphs in Maple (and turning them) as well as similar examples in real-life, like the corner of a room. Students learn to internalize visualizations and associate them with the corresponding algebra. The second activity is in Moodle, an open source course management system, where I have set up linear algebra resources. There, words that match glossary entries we create are hyperlinked within solutions, discussion forums and more. I’ll discuss evaluations of these methods and student responses. (Received August 22, 2014)