1046-97-1906 **Hyman Bass*** (hybass@umich.edu), 2413 School of Education, 610 E. University, Ann Arbor, MI 48109-1259. *Algebraic reasoning in 3D, using principles of linearity and symmetry.*

Mathematical habits of mind make use of mathematical connections (for example between algebra and geometry), recognition and use of patterns (such as linearity, symmetry, etc), and multiple (including visual) representations. Yet much of the school curriculum is restricted to shallow and disconnected engagements with these ways of thinking. I propose to show an example of a rich piece of mathematical reasoning and problem solving that integrates all of these features, yet uses only resources available in the middle school curriculum. (Received September 16, 2008)