

1077-L1-2902 **Edward W. Welsh*** (ewelsh@westfield.ma.edu). *Hexiclouds: Graph Theory Meets LEGO Bricks.*

Color the edges of an isometric grid with six different colors so that there are edges of all six colors at each vertex. There are many solutions, and finding them turns out to be an easy enough problem for liberal arts majors to tackle using trial and error. A wide variety of solutions emerge when you consider permutations of a trivial solution, and there is a straightforward connection to Hamiltonian and Eulerian circuits: all concepts readily accessible to our curious nonmathematical colleagues on campus. We will represent solutions using LEGO bricks, and look for symmetries and other subtle patterns in this many-layered, deceptively deep problem. (Received September 22, 2011)