

1046-54-1711

Samuel Jacob Behrend* (behren_s@denison.edu), Slayter Box 7696, Denison University,
Granville, OH 43023. *A Math Classic: The Tale of Three Links.*

Recently there has been considerable work done on the linking properties of spatial graphs, spurred by Conway, Gordon and Sach's seminal result regarding K_6 . Specifically, they were able to prove that K_6 was intrinsically linked – every embedding of K_6 contains at least one two-component link. Flapan, et. al. proved that the minimal number of vertices needed for a triple link (links with *three* components) is 10. In the same article they provided a non-straight-edge embedding of K_9 without a triple link. In this work we consider triple links in the more restrictive geometric setting of straight-edge embeddings. Straight-edge embeddings are relevant to molecular chemists who synthesize knotted molecules – atoms and their bonds resemble straight-edge graphs. We establish results that determine when certain linear subgraphs of K_{10} are triple linked as well as certain linear embeddings of K_9 . Using new techniques, we give an alternative proof to Flapan's result restricted to straight-edge embeddings. (Received September 16, 2008)