

1067-P1-1024 **Elizabeth W McMahon*** (mcmahone@lafayette.edu), Department of Mathematics, Lafayette College, Easton, PA 18042, and **Kyle Kalail**. *Using SET[®] to Visualize $AG(4,3)$.*

The card game SET[®] is a model for the 4-dimensional affine geometry of order 3, $AG(4,3)$. We will show how to use sets to visualize the lines (and thus the full structure) of $AG(4,3)$ and use that knowledge to answer questions about the geometry. We will show that it is possible to have any number of sets from 0 to 14 in 12 cards, but no more. In addition, further questions for exploration will be presented. (Received September 17, 2010)