Jill Bigley Dunham* (jillbd@gmail.com), 20400 Spectrum, Irvine, CA 92618, and Gwyneth R Whieldon. Enumeration of Solutions to a Paper Cutting and Folding Problem by Martin Gardner.

A classic puzzle appearing in Martin Gardner’s New Mathematical Diversions asks if (and how) it is possible to cut a $3 \times 3$ piece of paper divided into $1 \times 1$ squares along the grid, keeping the paper connected, so that the paper may be folded to wrap a unit cube. In this talk, we enumerate all solutions to the puzzle, classifying them using 8-edge subgraphs of the underlying lattice adjacency graph of the paper. We also break the solutions into two subclasses – solutions which can be folded so that only one side of the original paper is visible after the wrapping (monocolored solutions), and solutions such that both sides of the paper will be visible on the cube surface. (Received September 16, 2014)