
The crease pattern on top of the print folds into two forms of Martin Gardner, as shown on the bottom of the print (not to scale). The rectangular paper sheet folds into the 3D structure of the words MARTIN GARDNER, as shown in Figure 1 while the grayscale inking in the sheet (top) forms the photograph of Martin Gardner in the background (bottom).

Martin Gardner taught us to look at everyday things from different perspectives, in particular through mathematics. We decided to look at Martin Gardner in different ways, using mathematics as our toolset.

The crease pattern was designed using an algorithm by Demaine, Demaine, and Ku [DDK10a, DDK10b], which describes how to efficiently fold any orthogonal "maze" (including word outlines like MARTIN GARDNER) from a rectangle of paper. Red lines fold one way and blue lines fold the other way.

To experiment with other designs, try our Maze Folder or read our papers on the web: http://erikdemaine.org/maze/

Given the complexity of the crease pattern, we expect it never to be folded. If you want to try your hand at it, though, you can download and print the crease pattern from the web: http://erikdemaine.org/prints/MartinGardner/

The photograph of Martin Gardner is from the Archives of the Mathematisches Forschungsinstitut Oberwolfach, and used with permission.

References


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Folding the crease pattern on top (red lines mountain, blue lines valley) brings together the photograph, while simultaneously forming the 3D shape of the letters MARTIN GARDNER, shown below.

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Print designed by Erik Demaine and Martin Demaine, 2012