

Pixel Polyominoes

by Kate Jones

As has been recounted repeatedly, it was Martin Gardner whose articles reporting on Solomon Golomb's work with pentominoes led directly to my involvement with this form of mathematical recreation. Over 18 years, my company, Kadon Enterprises, Inc., has evolved a product line of over 80 game and puzzle sets primarily of the polyform and combinatorial variety. It will come as no surprise that a large percentage of them deal in one way or another with polyominoes.

In the course of marketing such playthings, I find it interesting that so few people "out there" had ever heard of or seen such puzzles but always and immediately find them fascinating. (That's what keeps us in business.) A great many more people, on the other hand, have or use computers. The accelerating pace of getting on the Internet is creating a new culture and language of its own. Just this week (January 1998) Kadon reached a landmark: the launching of our very own Website catalog.

It needs to be said that I am virtually computer-illiterate. Learning to use HTML code to mark up the text to go on the Web page was as frustrating as it was exhilarating (when something actually worked). My background as a graphic artist helped in visualizing the finished look, and my 18 years of strenuous puzzle solving carried over to the logic of fitting pieces of totally confusing code together. Among the tasks was the creation of graphics—drawings of puzzle tilings with precise geometric proportions and installed color regions.

It was my good fortune to have the use of a PaintShopPro program for this purpose, and one of its means for precise work was an enlargement tool that could get a really good close up, and closer, and closer, and closer... it could take the worker right into the center of its Universe, down to the fundamental building block of all its imagery... the unit element of visual illusion... the mighty pixel. There they were, in the neat rows and columns of a square lattice. And some cells were filled, and some cells were empty, and from a very great distance the whole composition could be a picture or a letter or even just a line. The diagonal lines were especially intriguing, since pixels are squares and so look like stairs. And there, among the seemingly random groupings of black pixels and empty spaces, it became as clear as only so gigantic a magnifying glass could reveal: pixels in reality form itsy bitsy polyominoes, and polyominoes are just tiny clusters of giant pixels.

To color in the illustrations of the puzzle sets for our Web pages, I used PaintShopPro's neat paint can system of "pouring" paint onto a region to be colored. The catch is, the region must be totally enclosed, or the paint will run out all over the place. The trick, then, was to patch any holes or crevices with strategically placed pixels. Just touching at

tips of corners is enough to close a gap, so I made a game of trying to see how many different shapes of the pentominoes and hexominoes I could hide in the strewn-about patches of little square black spots. This was purely a fancy of mine, since no one would ever see them at regular size. And this drawing is now on the World Wide Web, at the Kadon site named simply “gamepuzzles.” Everyone on the planet who visits our site and views the pictures will be looking and not seeing the detail of the polyominoes hiding among the pixels. But here is a close-up of what some of the pieces spell in honor of the man whose writings decades ago triggered a series of events that have shaped my life. Thank you, Martin Gardner.

P.S.—Let it be known that Solomon Golomb’s name, as the patriarch of polyominoes, is likewise inscribed somewhere among the pixels of our website.

