# Only Connect

Margaret Kepner

Washington, DC, USA; renpek1010@gmail.com

In my artistic work, it is my goal to connect ideas and themes from both mathematics and art. For example, I sometimes express mathematical concepts using formats found in traditional quilting. In the figures below, the top row shows two pieces based on quilt patterns (Wild Goose Chase and Log Cabin). The mathematical content for Figure 1 is the Fundamental Theorem of Arithmetic, while in Figure 2, the subject is a Magic Square of Order 8. Topics in recreational math often provide me with subject matter. In addition to magic squares, some of my art is inspired by geometric dissections and shape-packing problems. Figure 3 shows a piece based on dissections of a square into regular star shapes, and uses a Crazy Quilt format. Number theory is another content source. In Figure 4, the prime, triangular, Fibonacci, and several other number sequences are plotted on a square spiral path. I have also created artwork based on integer partitions, and the Catalan and Bell numbers. For each topic I explore, I try to find an appropriate visual format that provides a logical connection to the underlying mathematical content and produces a pleasing result.

**Figure 1:** *Prime Goose Chase.*

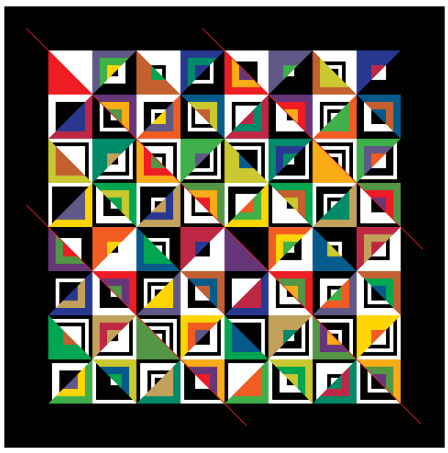

**Figure 2:** *A Breeze over Gwalior.*

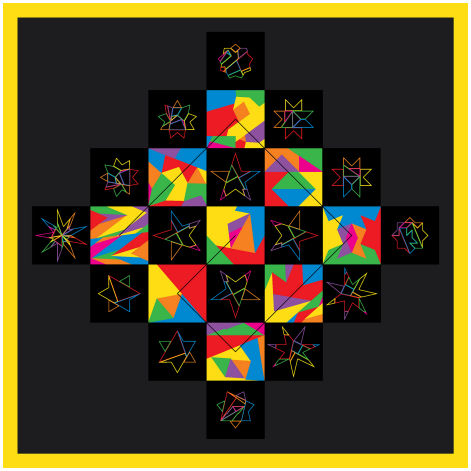

**Figure 3:** *Crazy Squares, Fractured Stars.*

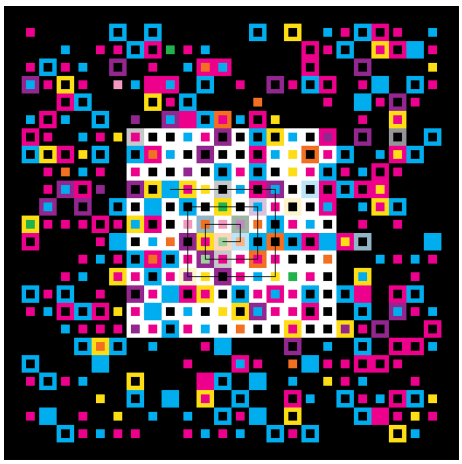

**Figure 4:** *Sequences on a Square Grid – 576.*