Layers in the Penrose rhomb tiling with a "Sun" patch as a center of global fivefold rotational symmetry

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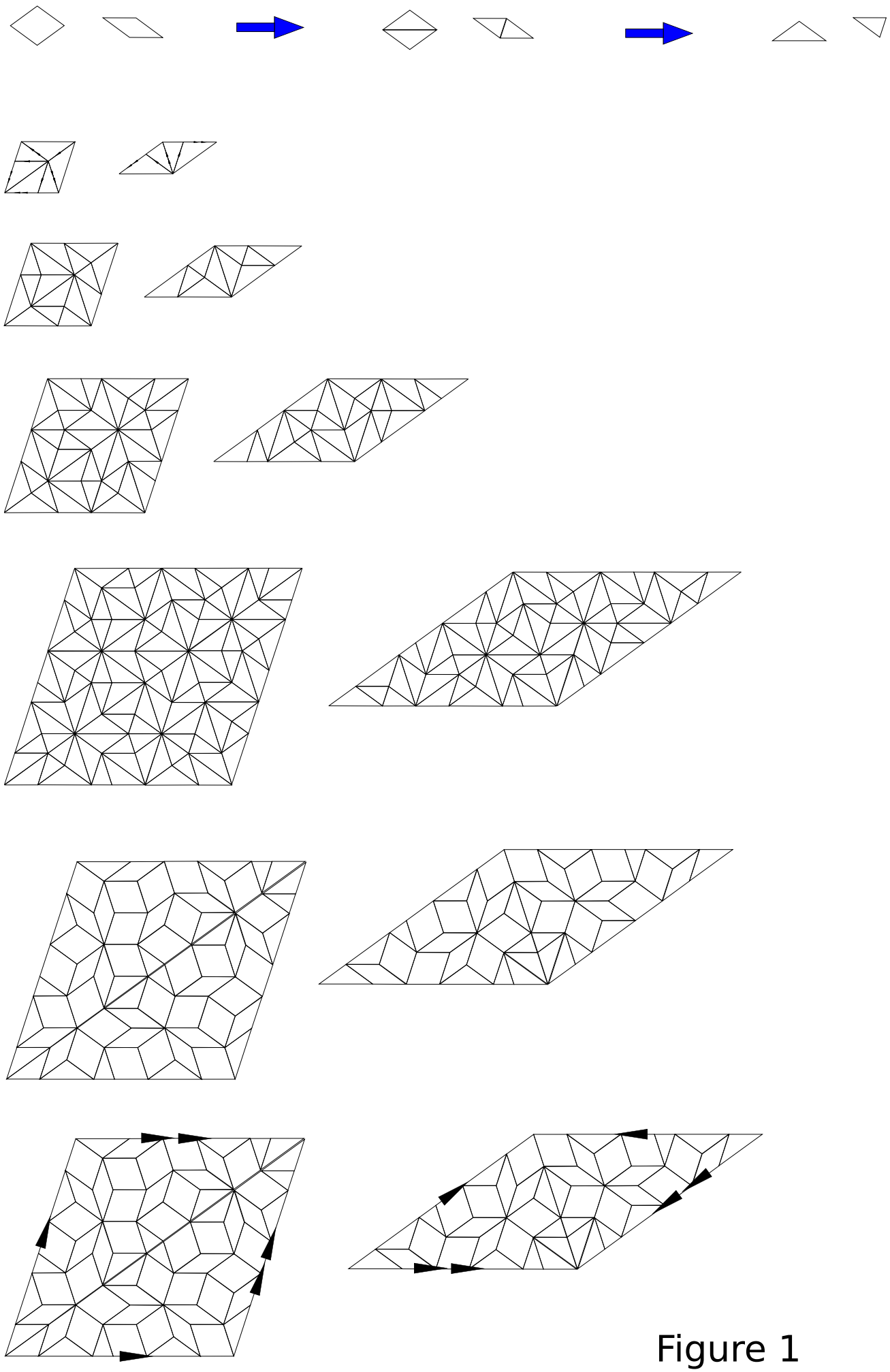

Figure 1

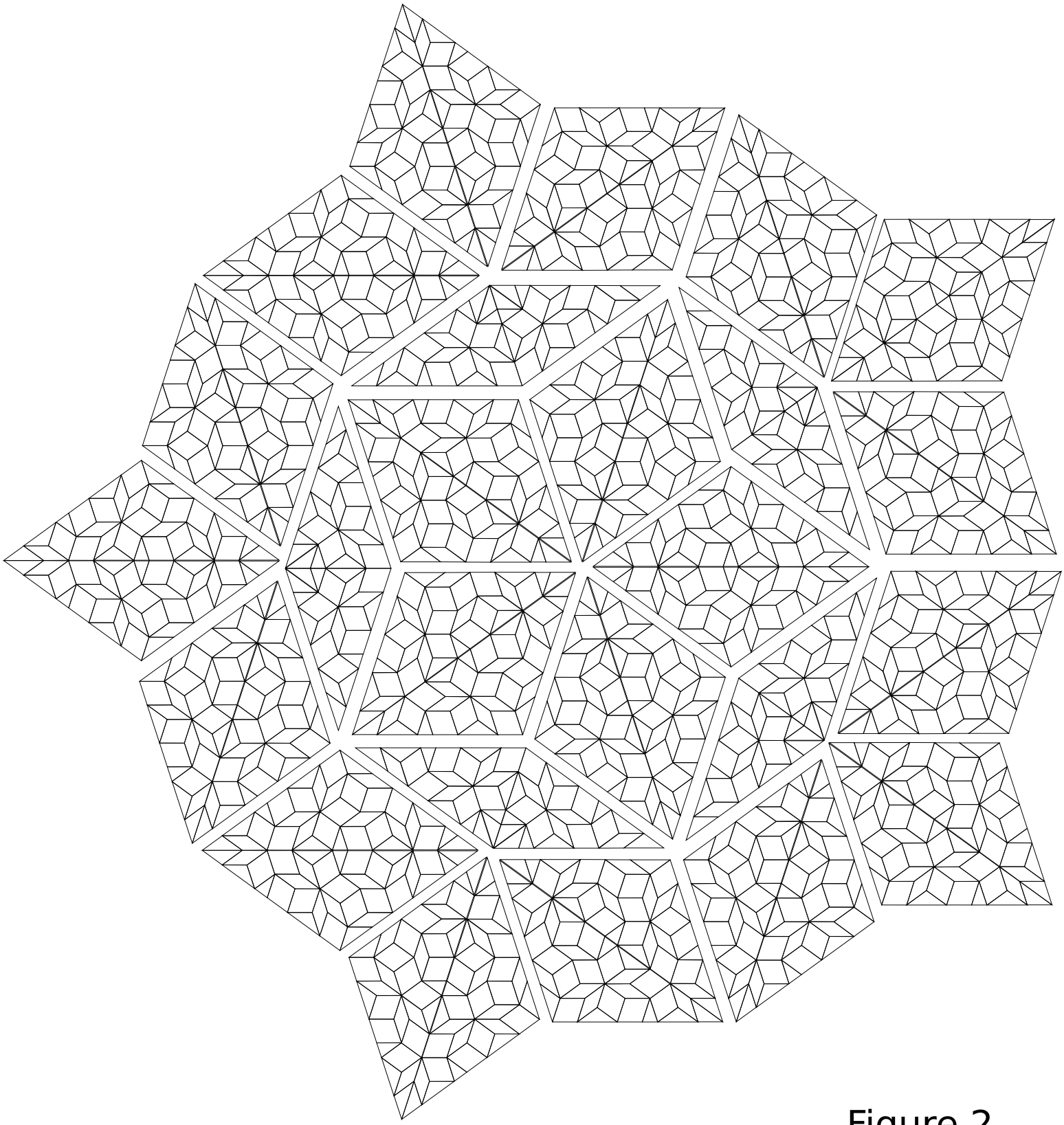

Figure 2

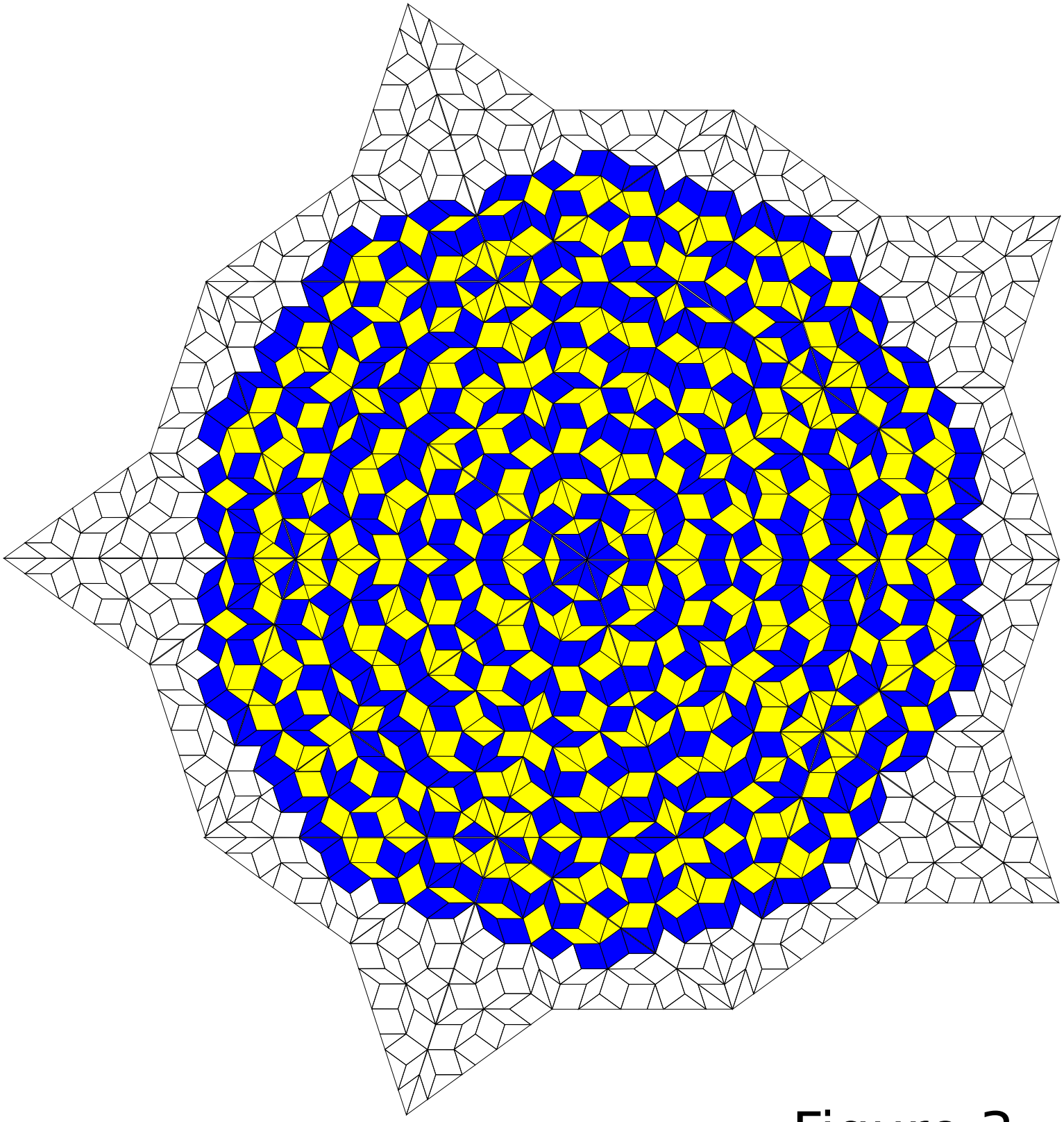

Figure 3

Use inflation to generate the fourth inflated tiling to the original tiles (cf. Figure 1). The fourth inflated tiling has the property that it has a "Sun" patch of five thick rhombs at the center with the same orientation as the central "Sun" patch in the original tiling. Since the tiling with the central "Sun" patch and global fivefold rotational symmetry is unique, this implies that the fourth inflated tiling is simply a scaled up version of the original tiling that continues from the center outwards exactly like the original tiling. Therefore, arbitrarily large finite patches of the tiling can be generated by copying the arrangement of the tiles in the original tiling with the tiles in the fourth inflated tiling (cf. Figure 2).

In the generated patch of tiles, color the central patch of five thick rhombs blue. After that, color all tiles adjacent to the free edges of that patch yellow, then all tiles adjacent to the free edges of the new patch blue, etc, alternating the colors blue and yellow. The resulting coloring creates concentric rings of blue and yellow bands of tiles (cf. Figure 3). The sequence terms are then generated by counting the number of tiles in each ring. For example, the initial patch of thick rhombs at the center consists of five tiles, so a(1) = 5, then the next layer of thin rhombs also consists of five tiles, so a(2) = 5. Continuing in this manner generates the sequence 5, 5, 10, 15, 20, 25, 40, 30, 30, 45, 60, 55, 65, 55, 70, 75, 90, 75, 90, ...