Triangles added in n-th generation: $1,3,6,9,12,15,18, \ldots$ (A008486)
Total triangles in n-th generation: 1, 4, 10, 19, 31, 46, 64, ... (A005448)

$x-x, y-y \quad x-x=$ odd $n$-th generation, $y-y=$ even $n$-th generation.
The expansion version:
$\mathrm{v}-\mathrm{v}=$ vertex to vertex v -s = vertex to side
$s-v=$ side to vertex $\quad s-s=$ side to side

