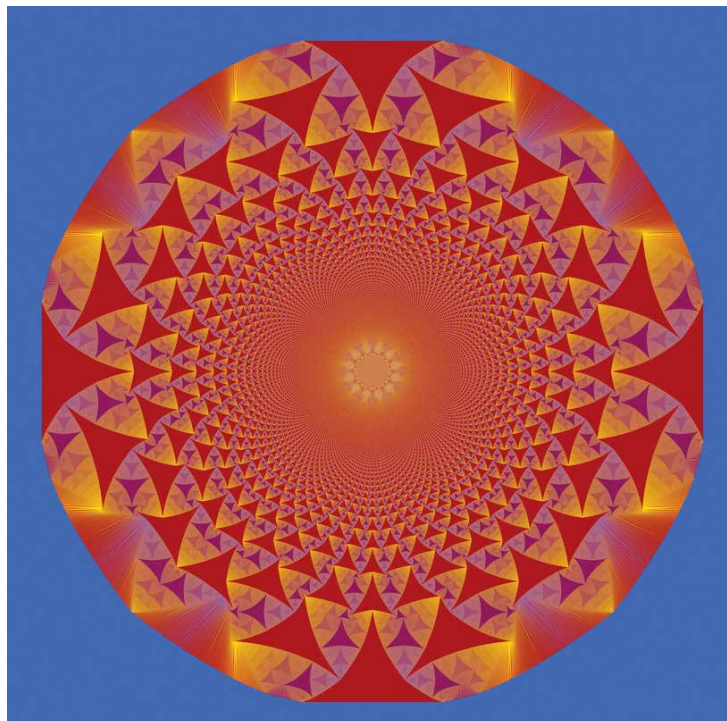


Piling On and on and on...

Sand is fun to dig in and sculpt but it has also provided the inspiration for a hot topic of study—how computer-generated “sandpiles” on a grid topple and change shape. The piles are modeled using a simple rule, such as: As sand is added, piles that become four grains tall topple and transfer their grains to their nearest neighbors in the four compass directions. Then these neighboring piles (which may have been three grains tall before) could now be four grains tall themselves and so topple and transfer to their nearest neighbors, which might topple, transferring to their nearest neighbors, and so on. Such a simple rule can still lead to amazingly



intricate fractal patterns, like this one, which was generated by a billion grains of sand. Although inspired by sand, the model reflects the behavior of many systems, from networks of neurons to forest fires.

Image: Wesley Pegden.

Listen Up!



MM/117.s



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