

Chaos Game Sketch

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A topic that I found to be very similar to the chaos game was creating fractal “trees.” I think that fractal trees are in the same classification of a “fractal” as the Sierpinski triangle (the fractal generated by the chaos game). This classification is aptly named “generative fractals.”

A simple fractal tree can be created by drawing a straight line of some length. Let’s call the length of such a line *tree-length*. The next step is to find two points, one which is a third of the way up the original straight-line, and one which is two thirds the way up of the original straight line. Now that you’ve found those two points at thirds, draw a new line which is half of *tree-length* at some angle which is 30 degrees from the original straight line.

Here is a quick example:



After you’ve drawn the 2 new lines at the $1/3$ and $2/3$ points, continue this process on the each branch until you reach a point the new branch length is less than some constraint involving the original *tree-length*. Here is an example of a fully constructed fractal tree, with the very last iteration of the branches colored differently than the former iterations:

