

In 1877, George Cantor discovered that points on a line are the same points on a square where the length of the line segment is equal to the area of the square. Every point of the line segment is paired with every point in the square; there are no points that were used more than once. Then we are questioned: How can we draw a line touching every point in the square without having the pen leave the paper? A space filling curve is a curve that covers all the spaces in a square. Hilbert used ideas from Peano to create his curve. The Hilbert curve is made up of U-shape orientations, there is a rule paired with each U-shape orientation. The rules to create the next iteration of the Hilbert curve is called grammar. Grammar is related to Lindenmayer language, which is used to create Kolam drawings. Kolam is a tradition in South India where women clean the front of their house and use rice powder to create the kolam drawing. Kolam is passed on from mother to daughter and daughter learns at a young age. Kolam drawings start with a grid of dots, then we have a line going around or through the dots to create the drawings. The line or lines in some kolam draws is continuous, which means where you start is where you end. The Lindenmayer language starts with a basic shape and a string of commands, then we use the rewriting rule to create the next iteration of the kolam drawing. Another tradition that is related to kolam is Sona. Sona is a tradition in Southwestern Africa, where they expect the story teller not only tell the story but to have drawing going with the story. Sona also starts with a grid of dots, the distance from each dot is equal because you use your index and ring finger to create the dots. The amount of lines that is needed for each sona drawing varies based on the amount of columns and rows of the drawing. In some sona drawings there are shapes that's the same as kolam drawings.