



# Level 3 Special Project

## *Space-filling Curves*



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Prerequisite Concepts	Concept 12
Key Concepts	Concept 14

In the next few studies, we will see that a LEGO<sup>®</sup> artifact in the shape of the letter N (and its mirrored image) can be used to create a space-filling curve called the *Peano curve*. The Peano curve can be constructed by creating a checkerboard pattern consisting of various N and mirrored-N patterns, and then connecting these patterns using 1-bit bricks. Note that the Peano curve is similar to the Wunderlich Type II curve. However, it was Giuseppe Peano who first discovered space-filling curves.

This study focuses on constructing just one artifact in the shape of the letter N. The artifact shown below can be built using three *put2D* function calls (hint: consider using the EMPTY brick). Before building this artifact it is recommended that you complete all Vitruvia exercises for Concept 14.

