Johnston and Greene

Conway's Game of Life

Mathematics and Construction

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Dead cells with three live neighbors are born, while live cells with fewer than two or more than three live neighbors die. These simple rules define Conway's Game of Life, which exhibits complex and unpredictable behavior that has been studied for over 50 years.

This book provides a thorough introduction to the Game of Life, the mathematics behind it, and the methods used to construct many of its most interesting patterns. It emphasizes conceptual techniques for constructing patterns that evolve in unusual ways, and guides the reader through the thought processes and ideas that are needed to combine various building blocks into more interesting composite patterns.

While this book largely follows the history of the Game of Life, that is not its primary purpose. Rather, it is a by-product of the fact that most recently discovered patterns build upon patterns and techniques that were developed earlier. The goal of this book is to demystify the Game of Life by breaking down the complex patterns that have been developed in it into bite-size chunks that can be understood individually.

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