# **Unnatural Selection**

Searching for Difference

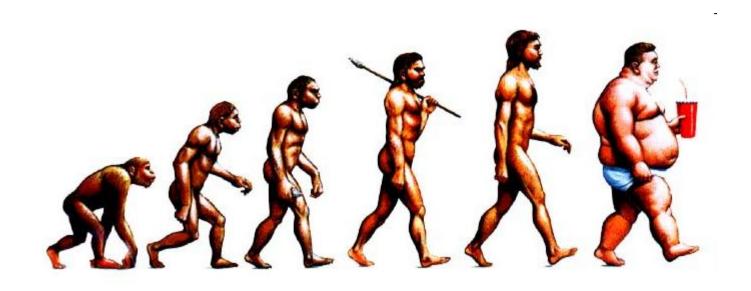
Francis A. Bitonti







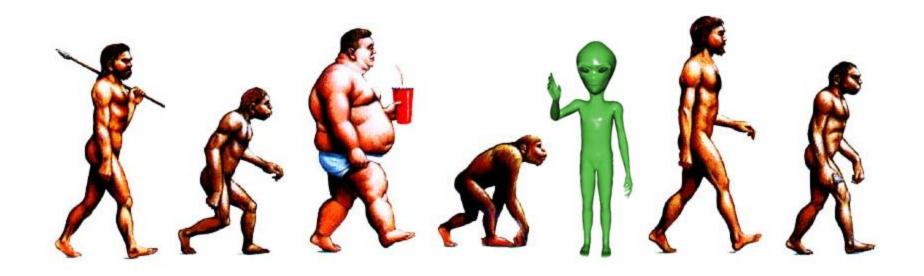
## **Enumerating: (reorganizing history)**



**Evolution cartoon. Artist Unknown.** 

Source (a blog titled current.com. http://www.current.com)

## **Enumerating: (reorganizing history)**



**Evolution cartoon. Artist Unknown. Modified by FADarchitecture** 

Source (a blog titled current.com. Alien image from drwill.com)

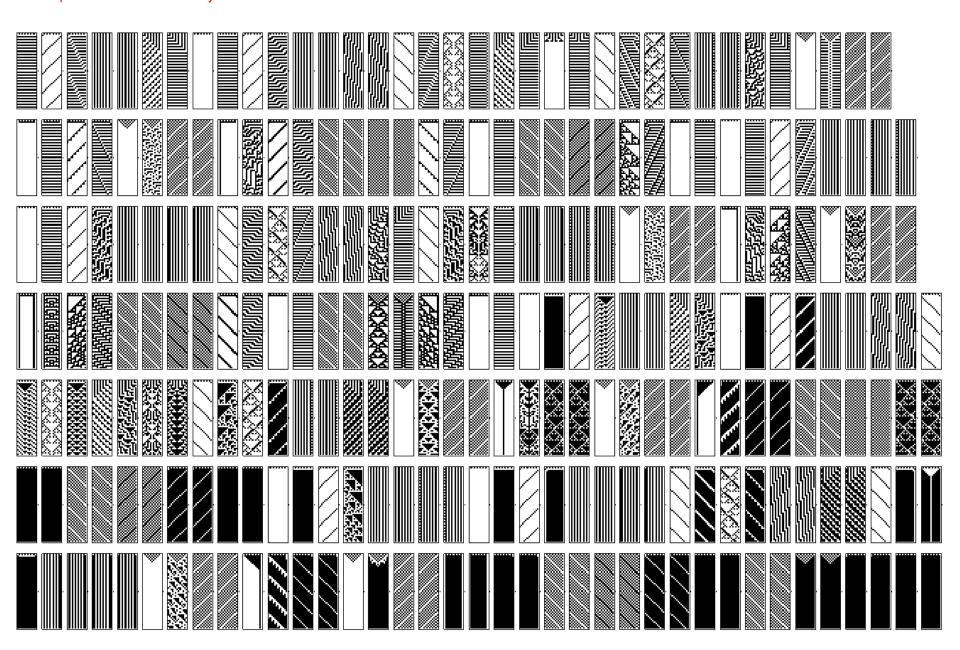


Ligus tree snails have their own unique patterns.

Source (http://flickr.com/photos/swamper/2712450354/)

## Searching For Light....

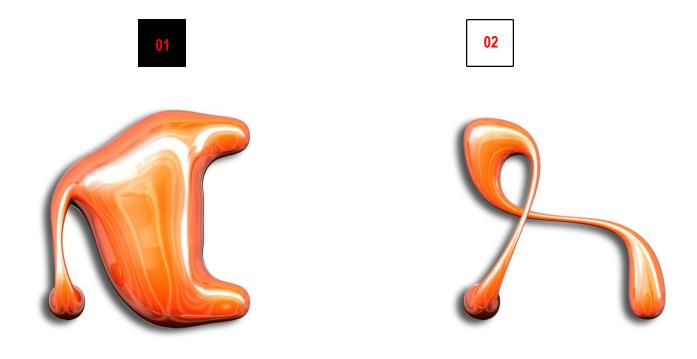
Initial Population of 255 elementary cellular automata.



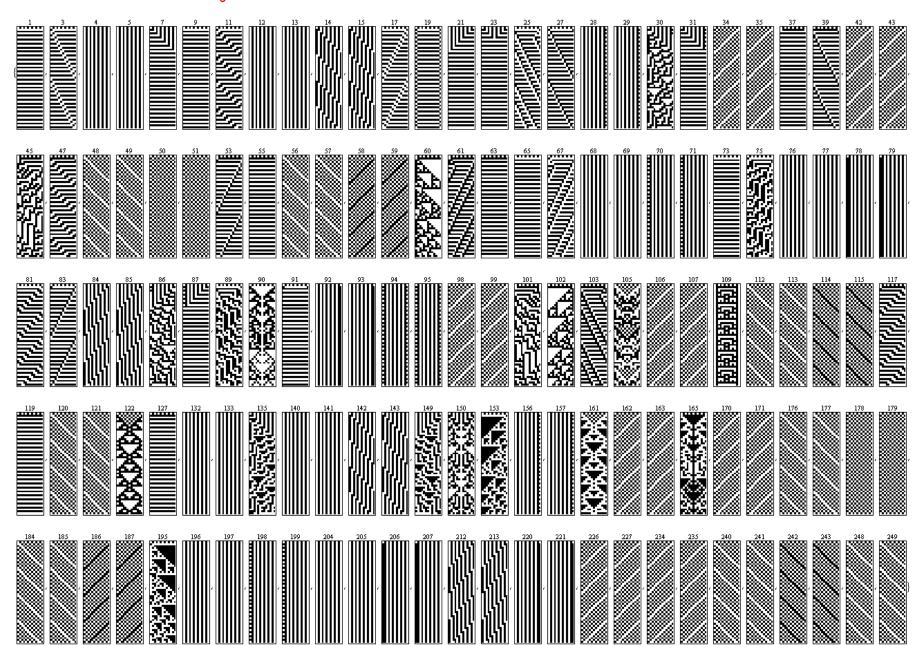
#### **Units:**

Unit one is designed to block out 100% of incoming light.

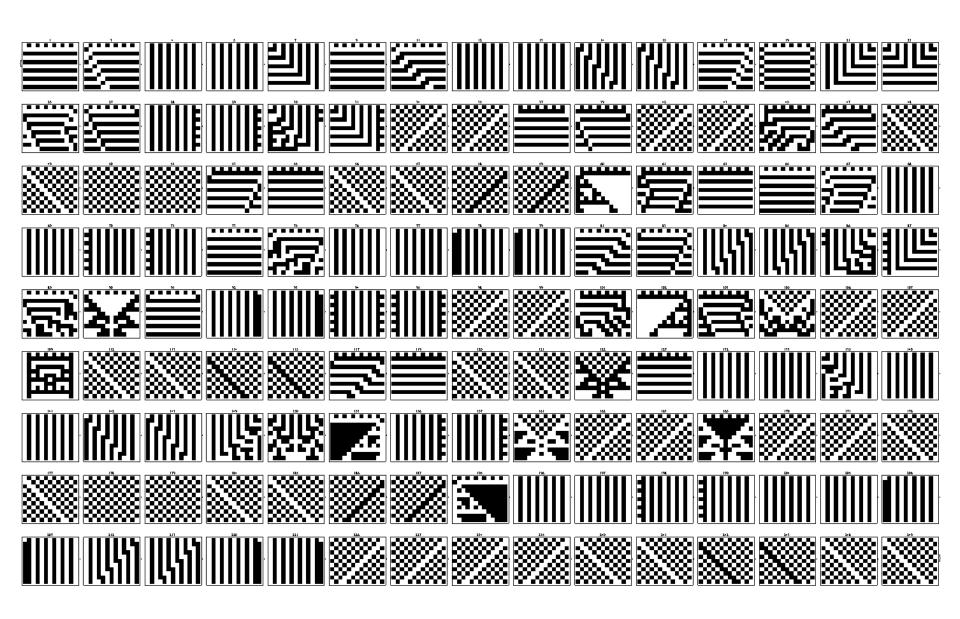
Unit two is designed to allow the maximum amount of light while still maintaining a structural connection to the other units.



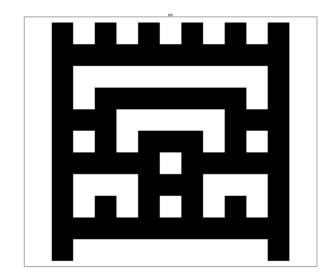
Between 48% and 53% obstruction of glass surface.

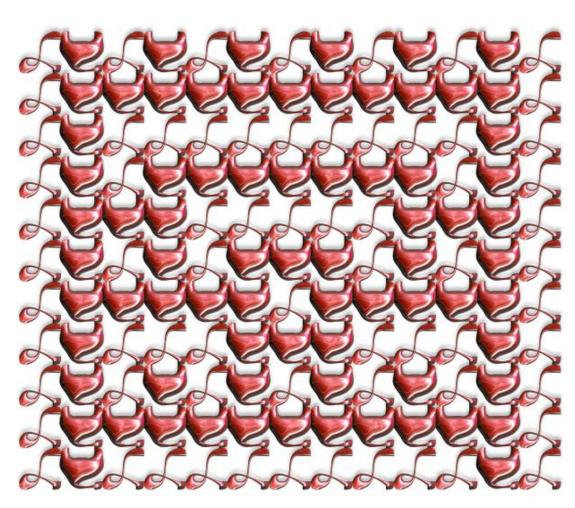


Between 48% and 53% obstruction of glass surface.

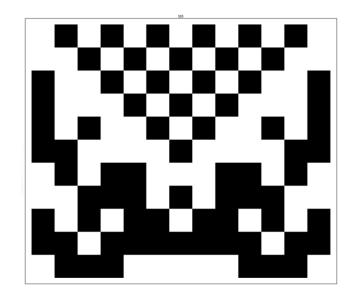


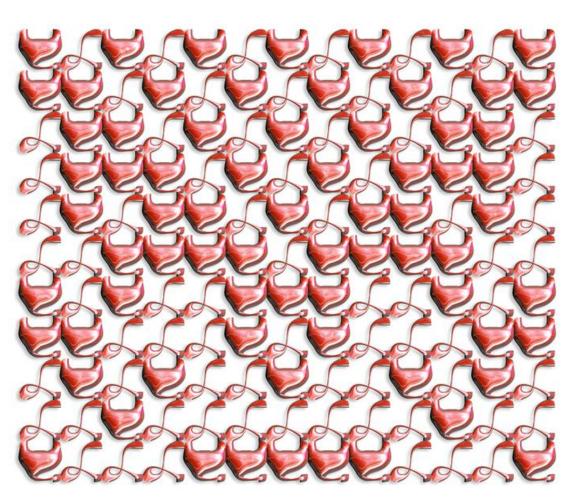
Between 48% and 53% obstruction of glass surface. rule 109



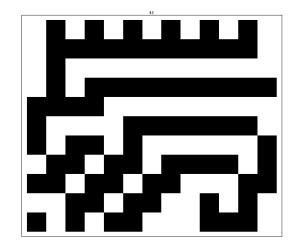


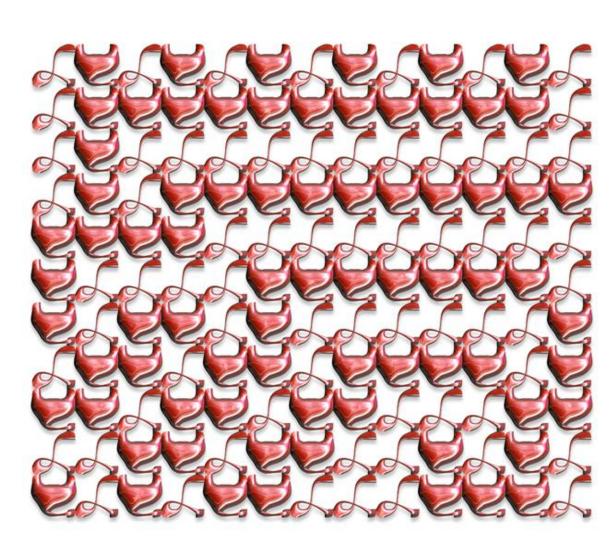
Between 48% and 53% obstruction of glass surface. rule 109





Between 48% and 53% obstruction of glass surface. Rule 45  $\,$ 

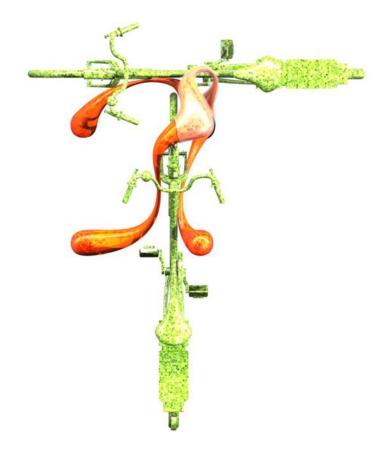




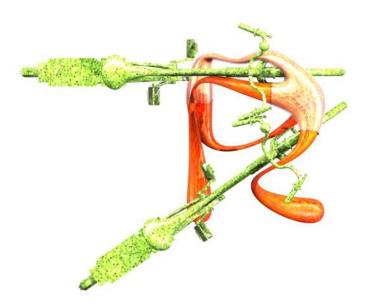
# Searching For a Bike Rack....













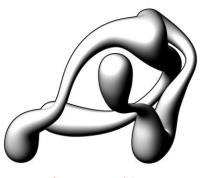




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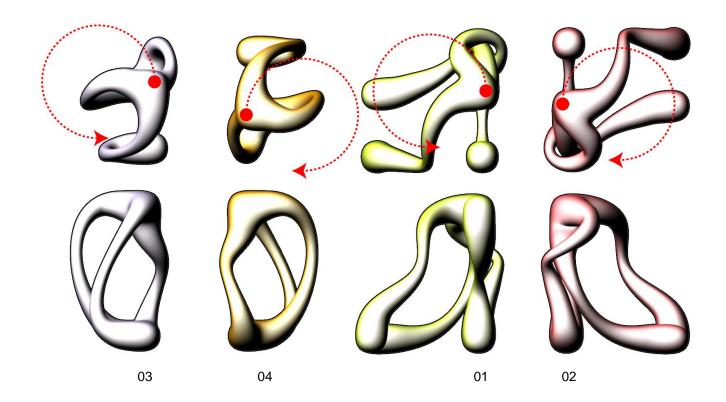


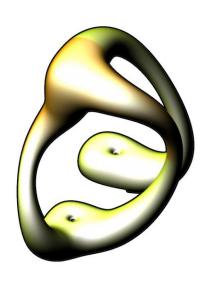


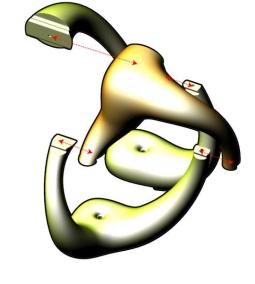
Component 01



Component 02







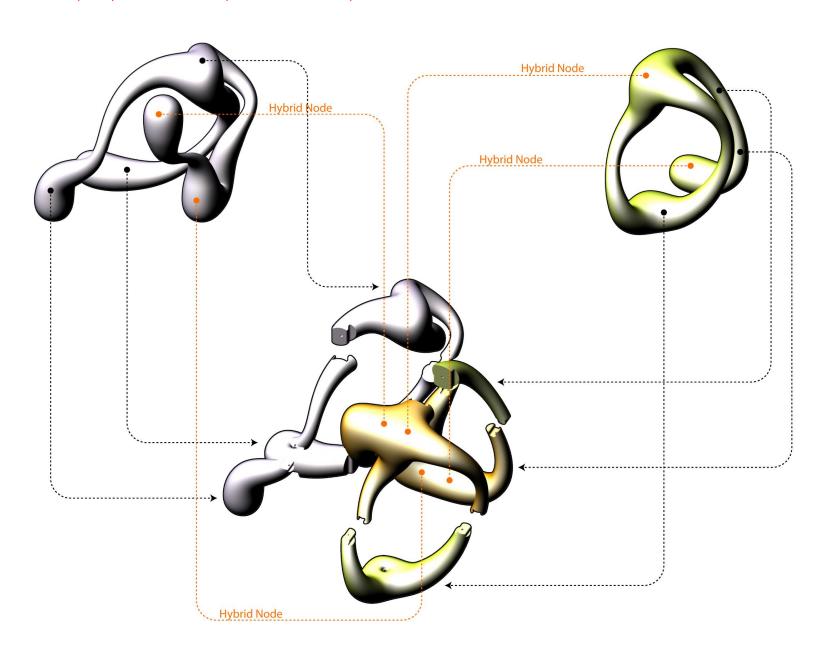
Component 02

Component 02 (Exploded)

## Combining discrete elements:

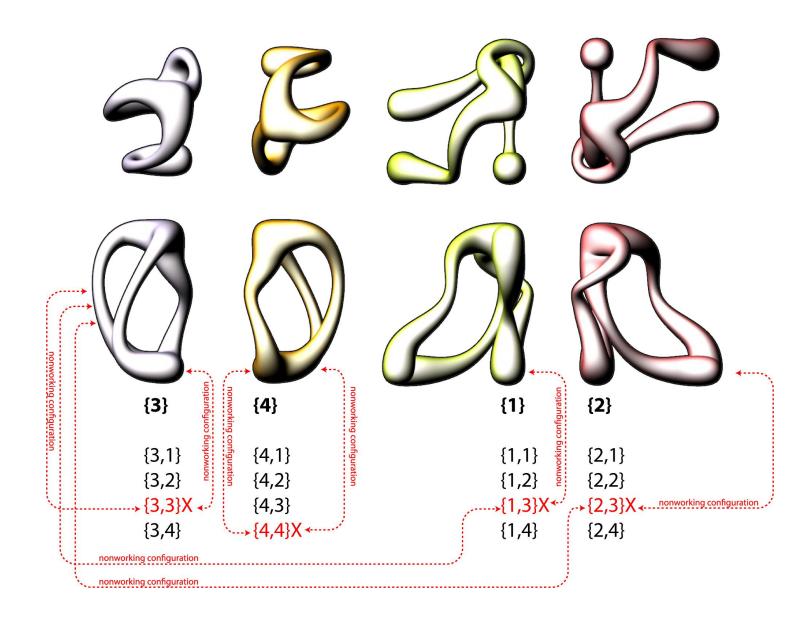
8 Standard Parts. 12 Hybrid Parts.

Total Kit of Parts = 20 parts (no matter how complex the construction.)



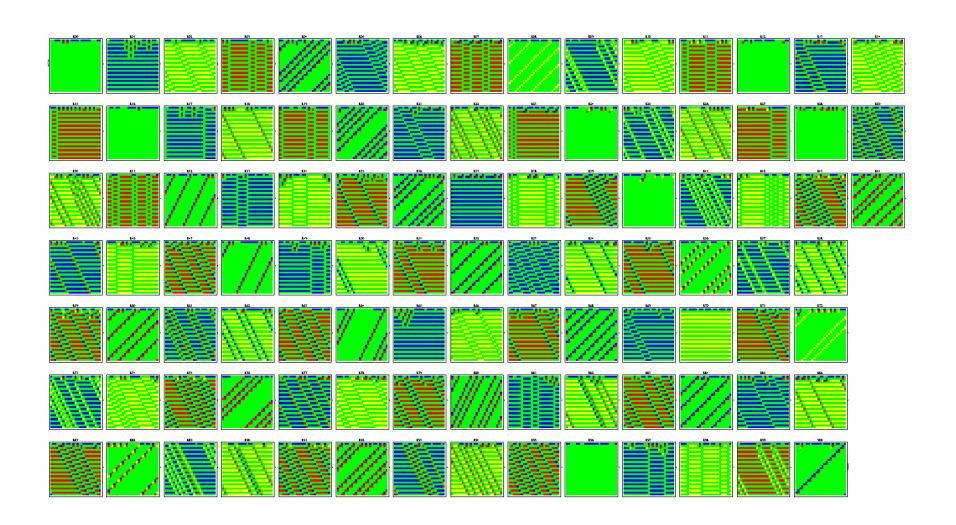
#### **Designing the Search:**

The search must return only solutions without the configurations marked in red.



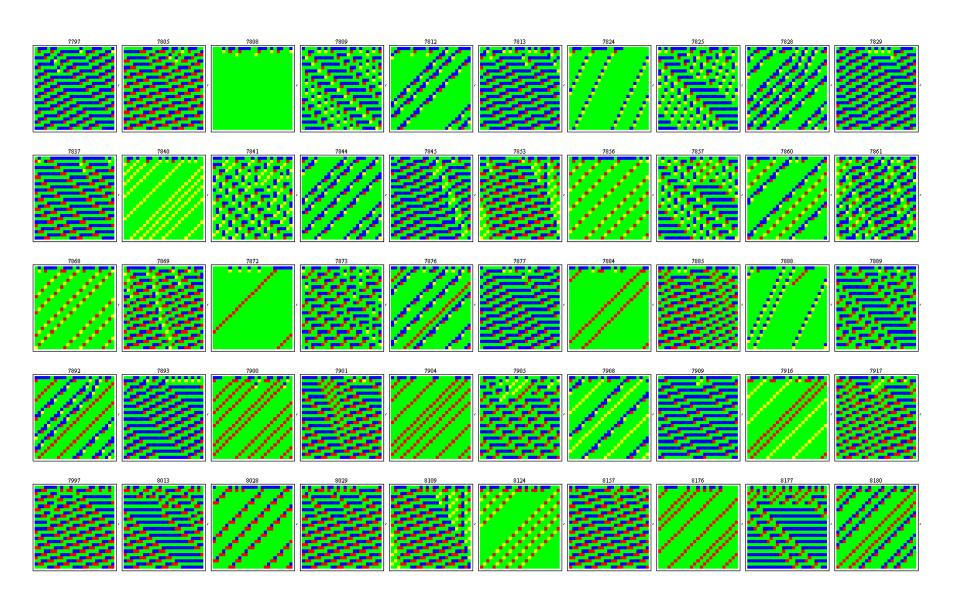
Four Color Cellular Automata

Total Possible Programs: **340282366920938463463374607431768211455** 

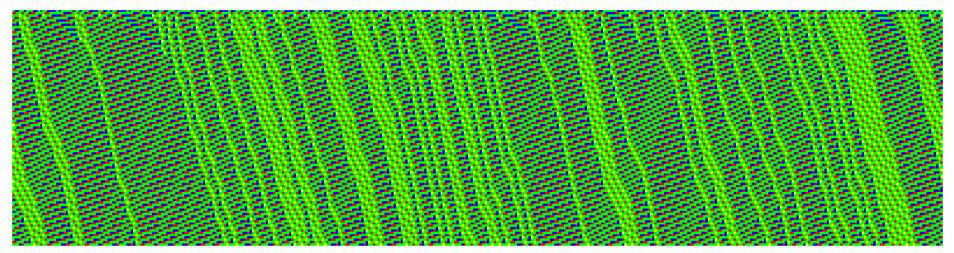


Four Color Cellular Automata

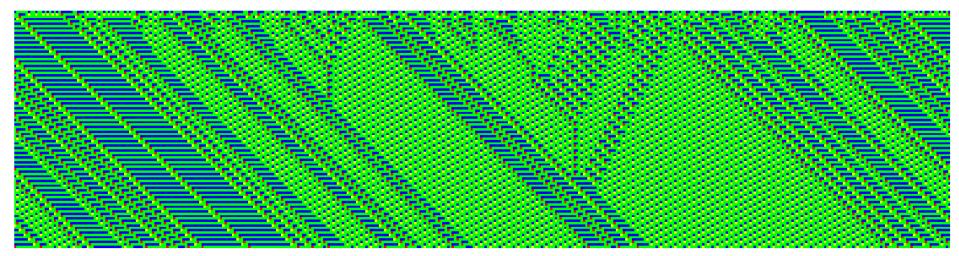
Total Possible Programs: **340282366920938463463374607431768211455** 



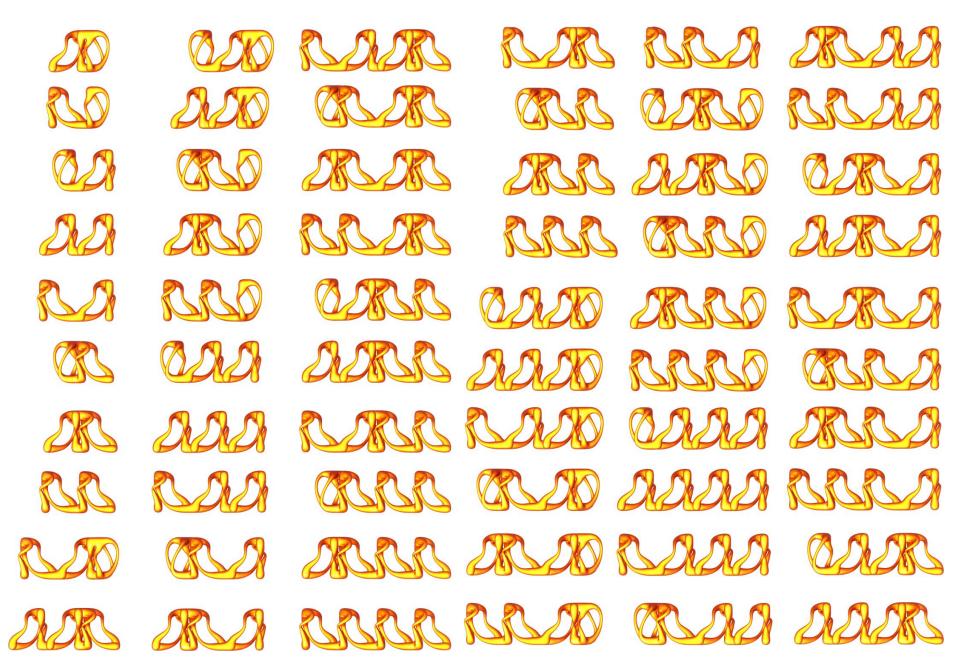
Four Color Cellular Automata capable of computing bike rack configurations.



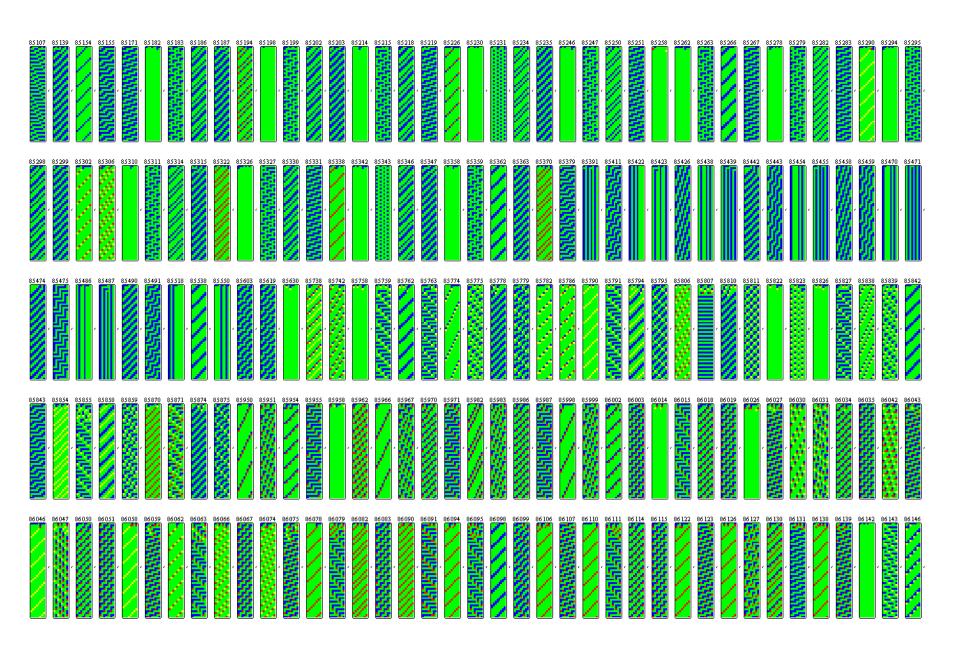
Rule #: 7357



Rule #: 3713



Four Color Cellular Automata capable of computing bike rack configurations.





## Fabricating an NKS bike rack:

