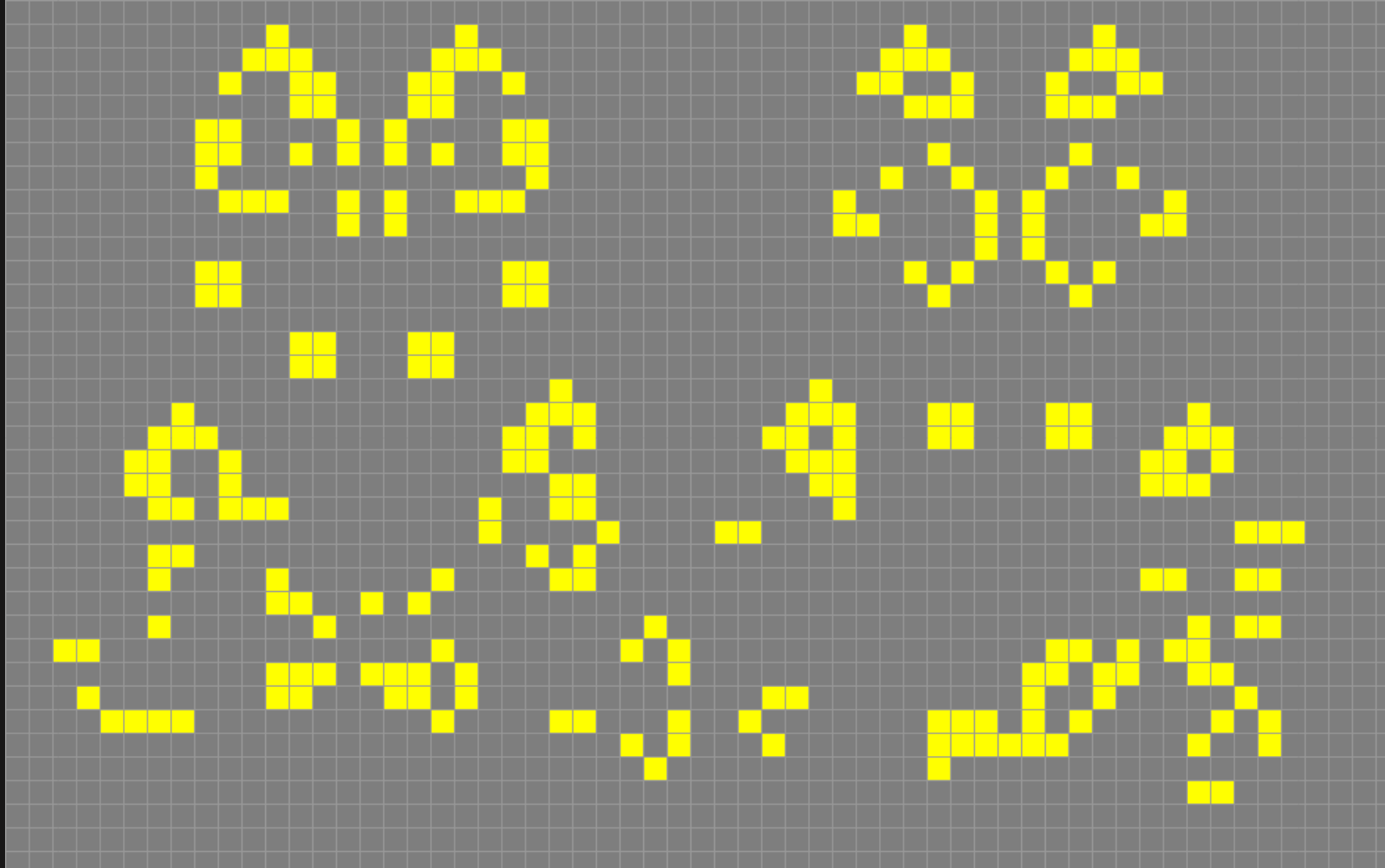


CREATIVE CODING

with p5.js

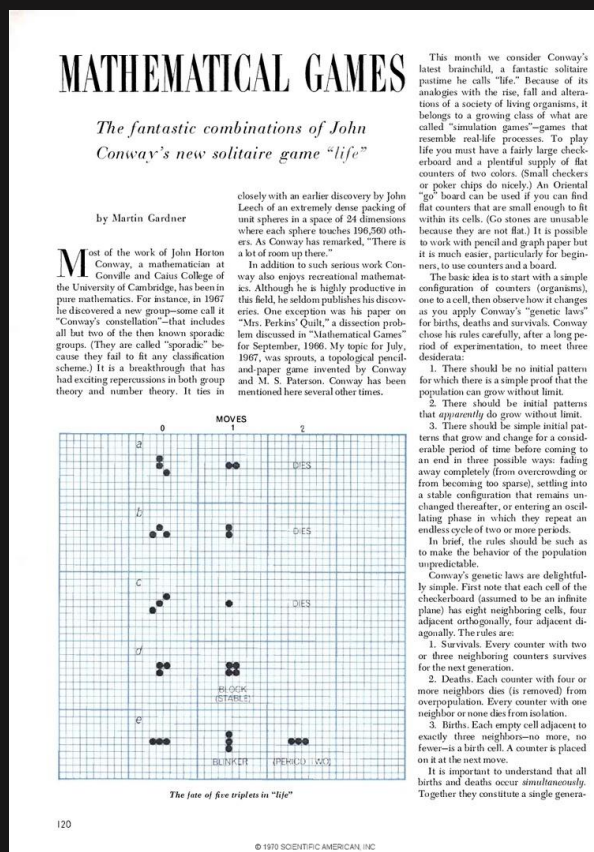
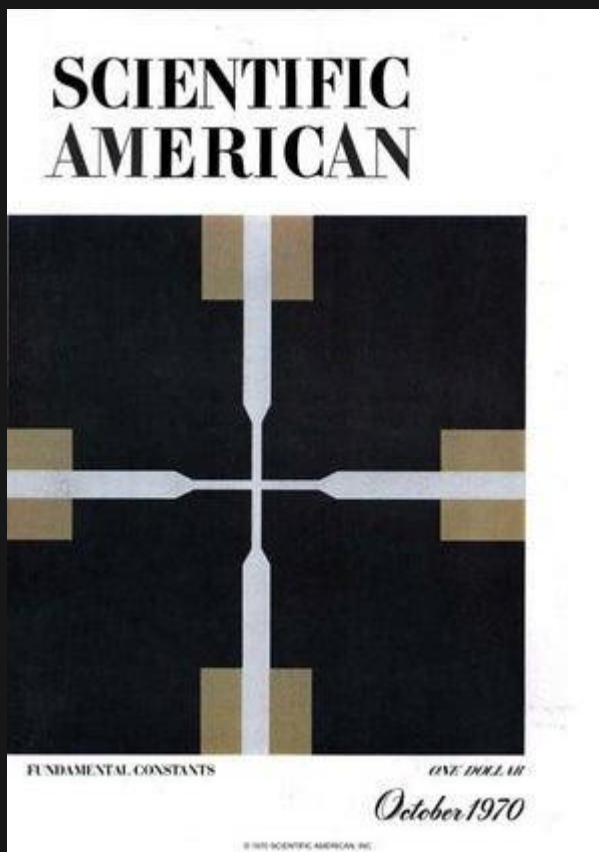
Conway's Game of Life by Ilyas Shafigin
<https://openprocessing.org/sketch/376878>

Game of life



Conways game of life

- October, 1970:



https://de.wikipedia.org/wiki/John_Horton_Conway

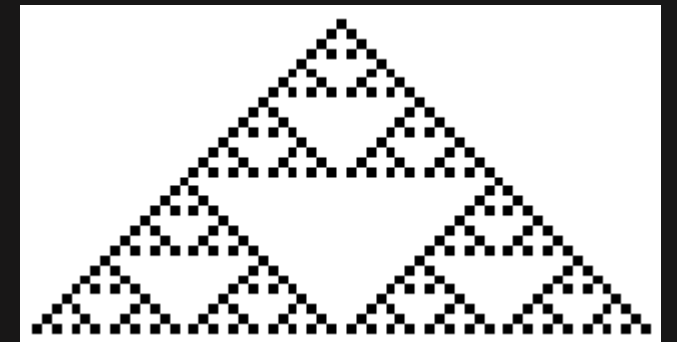
Two states:
Dead / Empty / 0
Alive / Occupied / 1

«A game without player»

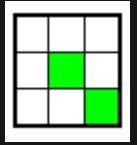


Conways game of life

- Started as pen & paper, but
- The game unfolds its full richness on a computer
- The game was so hyped in 1970, that the US military estimated the cost of wasted computational power to multiple millions
- The game of life belongs to the family of cellular automata
 - Cellular automata are a type of computational model that consist of a grid of cells that evolve over time based on a set of rules



Simple rules



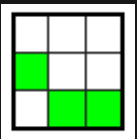
1. Any live cell with fewer than two live neighbours dies, as if by underpopulation.



2. Any live cell with two or three live neighbours lives on to the next generation.

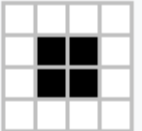
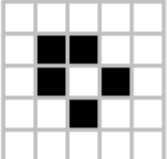
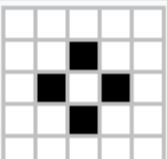


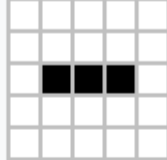
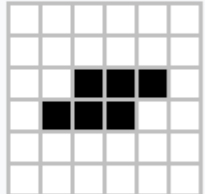
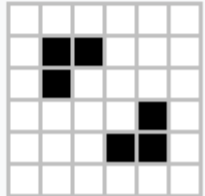
3. Any live cell with more than three live neighbours dies, as if by overpopulation.

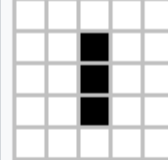
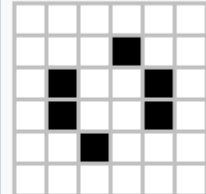
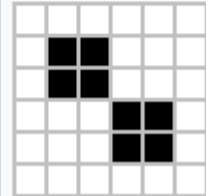


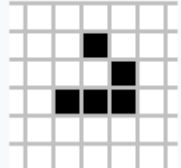
4. Any dead cell with exactly three live neighbours becomes a live cell, as if by reproduction.

Groups

Still lifes	
Block	
Bee-hive	
Loaf	
Boat	
Tub	

Oscillators	
Blinker (period 2)	
Toad (period 2)	
Beacon (period 2)	

Blinker (period 2)	
Toad (period 2)	
Beacon (period 2)	

Spaceships	
Glider	

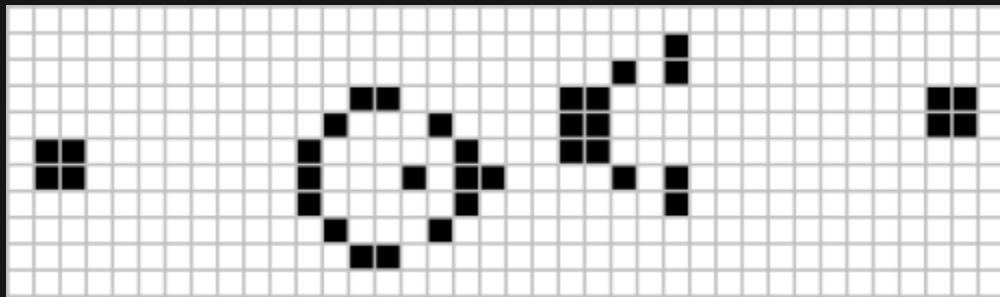
And many more!

Playground &
Lexicon:

<https://playgameoflife.com/lexicon>

Conways challenge

- 50 dollars (~\$350 in 2021)
- Prove or disprove that for any initial configuration with a finite number of living cells, the population cannot grow beyond some finite upper limit
- Bill Gosper from the MIT(Massachusetts Institute of Technology) won with the “Gosper glider gun”

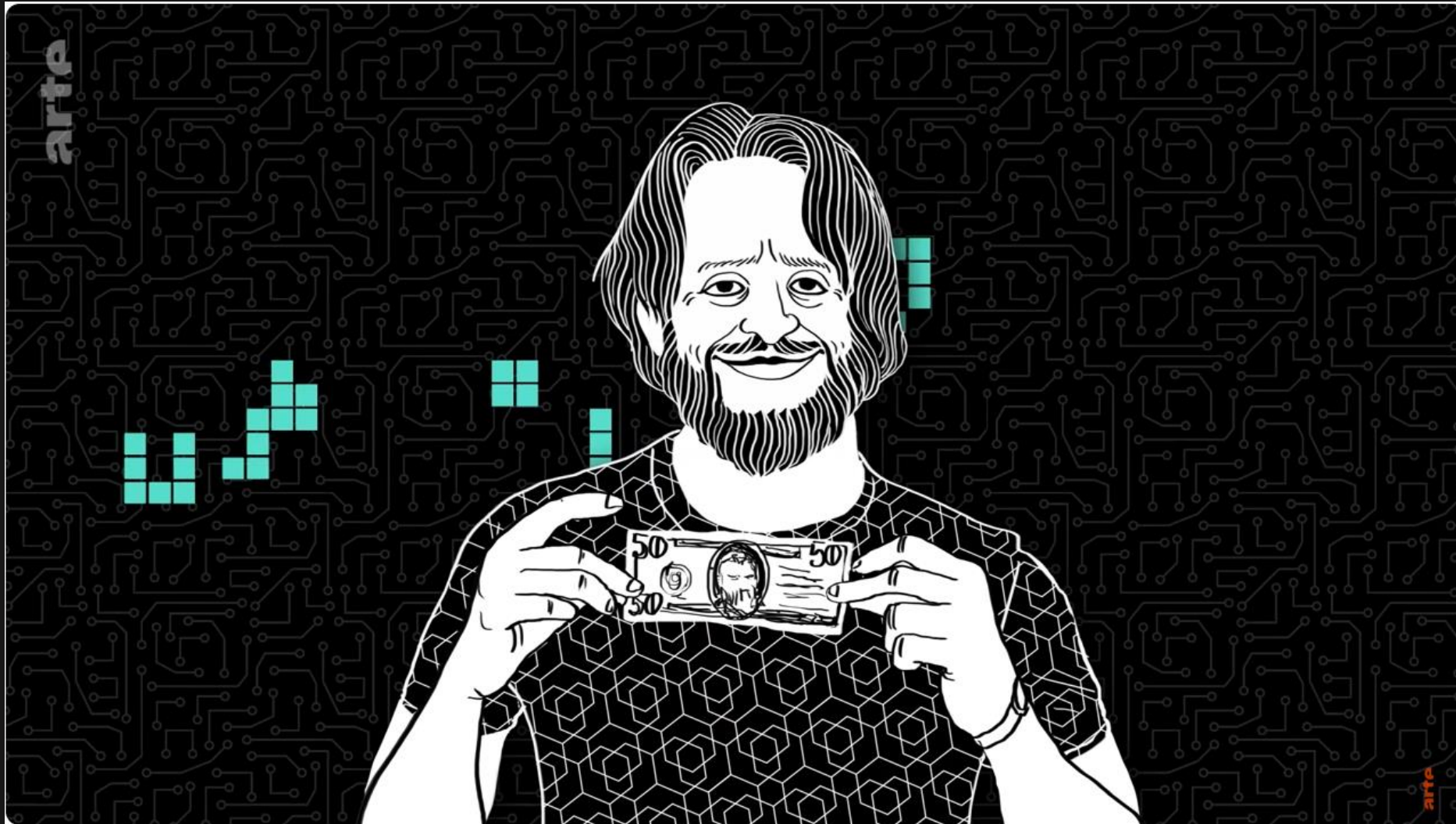


https://en.wikipedia.org/wiki/Conway's_Game_of_Life

Game of life

- The basic building blocks of a computer can be created using logic gates such as: AND, NOT, OR.
- You can create such gates in the game of life
 - <https://www.alanzucconi.com/2020/10/13/conways-game-of-life/>
- You can create the game of life in the game of life
 - <https://www.youtube.com/watch?v=xP5-ileKXE8>

Want to know more?



<https://www.youtube.com/watch?v=DUfdBdrK2ag> (ARTEde have some great videos in their playlist «Mathewelten», check it out 🤖)

Want to know more?



Wiki home
ConwayLife.com
How to contribute
Tutorials
LifeWiki discussion
Recent changes
Random page
Links

Tools

What links here
Related changes
Special pages
Printable version
Permanent link
Page information

Main page **Discussion**

Home • **LifeWiki** • Book • Catagolue • Forums • Dis

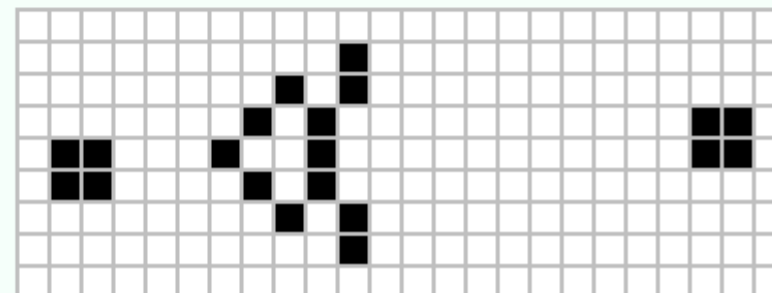
Welcome to LifeWiki,

the wiki for Conway's Game of Life.
Currently contains 2,577 articles.

[Overview](#) • [How to contribute](#) • [ConwayLife.com](#)

This week's featured article

The **queen bee shuttle** can refer to one of two [period-30 oscillators](#) (trans- version shown to the right) in which a [queen bee](#) travels back and forth between two [blocks](#). Other stabilisations exist, such as ones that involve the [eater 1](#), called the [buckaroo](#). The queen bee shuttle is the basis of many known true period [p30 guns](#), including the infamous [Gosper glider gun](#). It was found by [Bill Gosper](#) in 1970 and was the first period 30 oscillator to be found. It is the smallest known oscillator with period greater than 15 and about the 18th most common naturally-occurring oscillator.



Want to know more?

The Lasting Lessons of John Conway's Game of Life

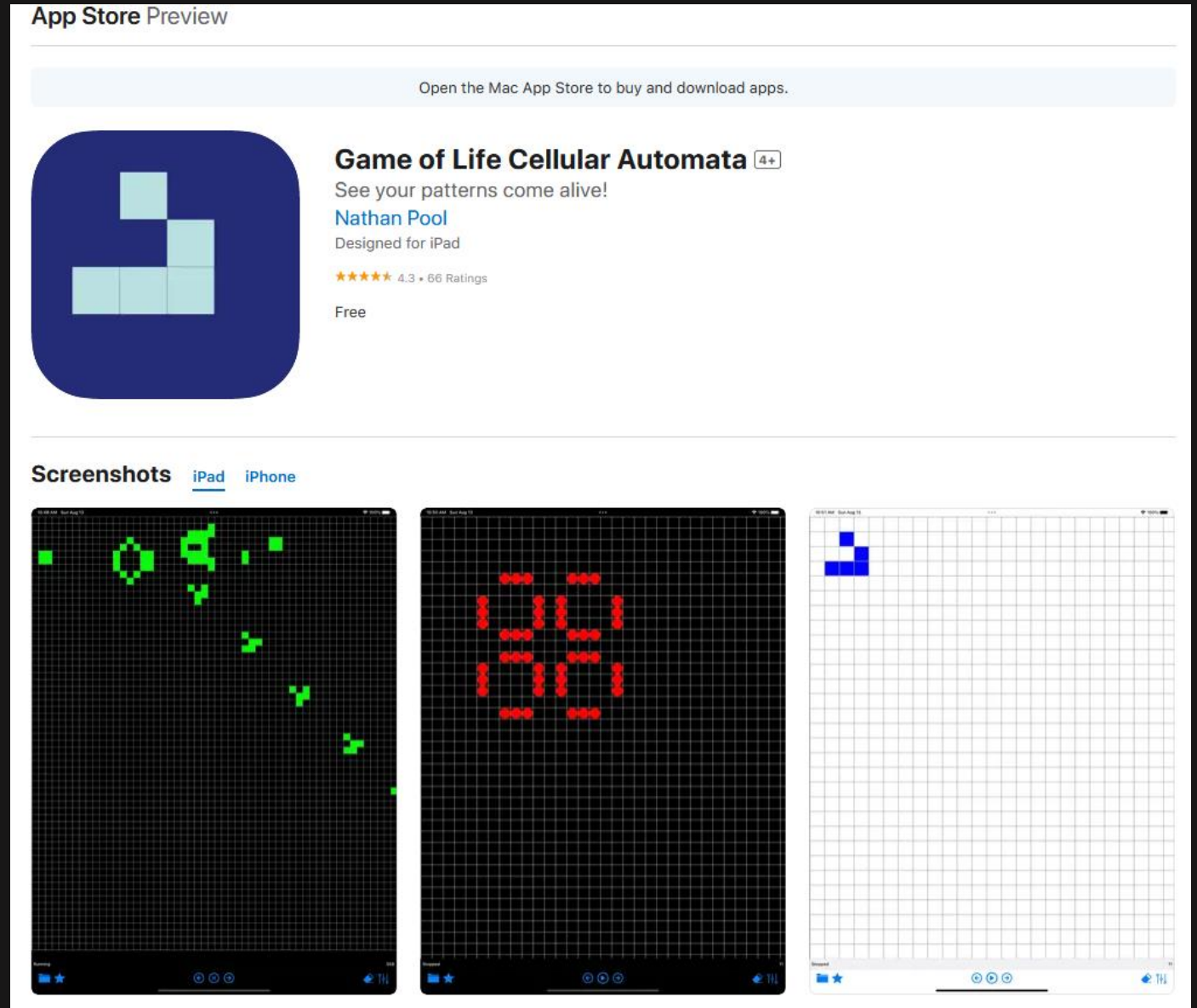
Fifty years on, the mathematician's best known (and, to him, least favorite) creation confirms that "uncertainty is the only certainty."

Want to know more?



Other

There are apps
both in the App
Store ...



Other

... aswell as in the
Google Play Store

Conway's Game of Life

Baiels

In-App-Käufe

4.6★
3.77 Tsg. Rezensionen

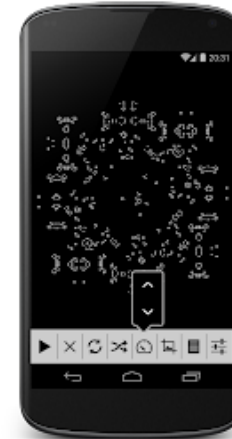
100 Tsg.+
Downloads

E
Jedes Alter

Installieren



Teilen

Auf die Wunschliste



More about John Conway

From Numberphile:



John Conway on Numberphile

Numberphile


7 Videos 269.753 Aufrufe Zuletzt am 13.04.2020...

≡ ➦

▶ Alle abspielen ⌂ Zufallsmix

The legendary John Conway

1




Does John Conway hate his Game of Life?

Numberphile • 1 Mio. Aufrufe • vor 10 Jahren

6:54

2




Inventing Game of Life (John Conway) - Numberphile

Numberphile • 1,1 Mio. Aufrufe • vor 10 Jahren

11:05

3




Life, Death and the Monster (John Conway) - Numberphile

Numberphile • 592.667 Aufrufe • vor 9 Jahren

8080174 9:04

4




Look-and-Say Numbers (feat John Conway) - Numberphile

Numberphile • 409.854 Aufrufe • vor 9 Jahren

7:53

5




The Brain of John Conway (and his Amazing Tongue) - Numberphile

Numberphile • 232.895 Aufrufe • vor 8 Jahren

6:28

6




Monster Group (John Conway) - Numberphile

Numberphile • 739.294 Aufrufe • vor 9 Jahren

15:54

7



The Legendary John Conway (1937-2020) - Numberphile Podcast

Numberphile2 • 68.314 Aufrufe • vor 4 Jahren

38:02

Tasks

- Implement the game of life
- Try out some structures defined here:
<https://playgameoflife.com/lexicon>
- Implement another game of life with your own creative touch!
 - Shape, color, size, alpha, ruleset, interactivity etc..
- Work on your website & individual project