

# ARTificial Life

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Onderdeel Artificial Life

# Doelstellingen College

- n Enig inzicht en kennis van technieken die gebruikt worden in Artificial Life & Art
- n Kennis en inzicht omtrent het gebruik van deze technieken

# Chris Langton:

"Artificial Life (ALife) is the study of man-made systems that exhibit behaviors characteristic of natural systems. It complements the traditional biological science concerned with the analysis of living organisms by attempting to synthesize lifelike behaviors within computers and other artificial media.

By extending the empirical foundation upon which biology is based beyond the carbon-chain life that has evolved on Earth, ALife can contribute to theoretical biology by locating life-as-we-know-it within the large picture of life-as-it-could-be.

Whereas biology is largely concerned with the material basis of life, Artificial Life is concerned with the formal basis of life."

# Het vakgebied **Artificial Life**

- n Vakgebied sinds 1989 (Langton)
- n Studie naar **eigenschappen van 'het leven'**
- n Aanname: het fysieke medium is onbelangrijk (Grand)
- n Globale fenomenen uit lokale interacties:  
**Emergentie**
- n **Gedistribueerd, parallel**
- n Het leven begrijpen door het zelf te bouwen ("understanding by building")

# Langton, Grand

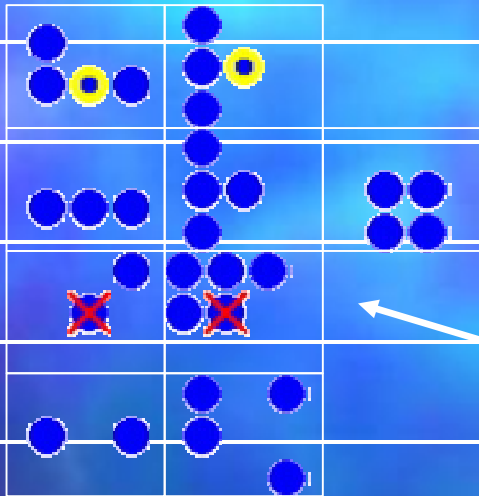
**Biology** = study of carbon-based life  
"Life as we Know It"

**A-life** = study of the dynamics of living systems,  
regardless of substrate  
"life as it could be"

**Substrates:** abstract chemistries,  
logical networks, cellular  
automata, abstract ecosystems,  
emulated computers etc. etc.

# Het Begin

Bekendste vroege applicaties:



Grid Werelden:

n Cellulaire Automaten

n Conway's "Game Of Life"



Boids

Sim's "Creatures"

