

Ross Summer Academy

#3: Algebraic

Ralph Abraham
University of California at Santa Cruz

Exemplary Units

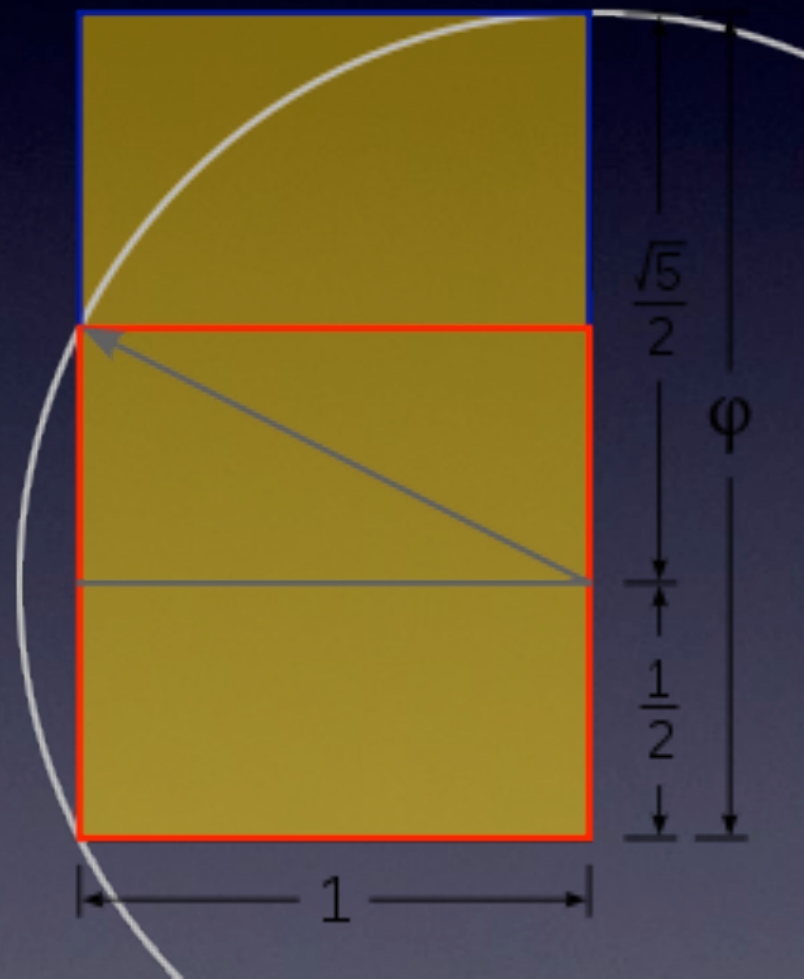
- Five mentalities:
 - R: aRithmetic, from dot
 - G: Geometric, from 3500 BCE (grade 5)
 - A: Algebraic, from 800 CE (grade 8)
 - D: Dynamic, from 1600 (grade 9)
 - X: Chaotic, from 1889 (grade 11)

A threads, grs 8-12

- A1. Constructions of Euclid
- A2. Repeating patterns
 - Catal Hoyuk, Alhambra
- A3. Tied in a knot, Galois, 1830

AI. Geometric Algebra

- Euclid's
- Golden section
- solves $x^2 = x + 1$



A2. Catal Huyuk



A2. Catal Huyuk



A2.Alhambra



Galois, 1980

- Founds group theory
- Tries to solve quintic equation
- Brings patterns and equations together

The End

- For more, see:
 - www.ralph-abraham.org/ross