GEOMETRICIAN'S VIEWS
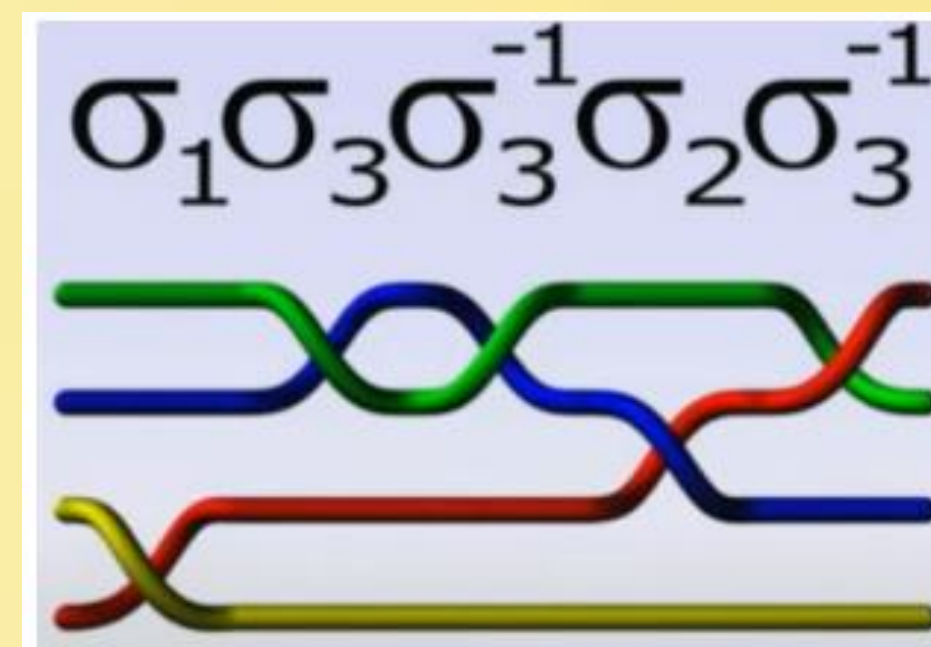
BRAIDS

σ_1

σ_1^{-1}
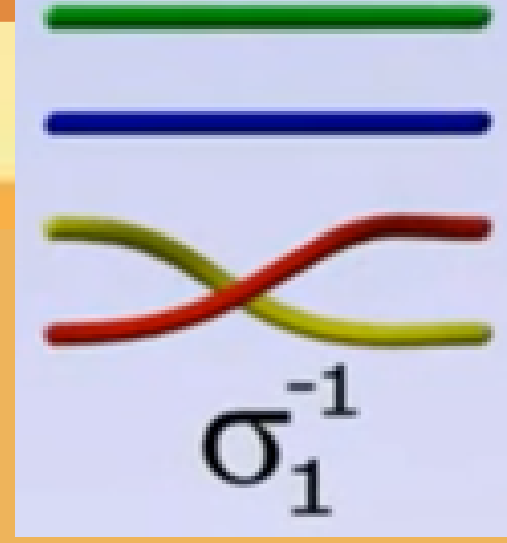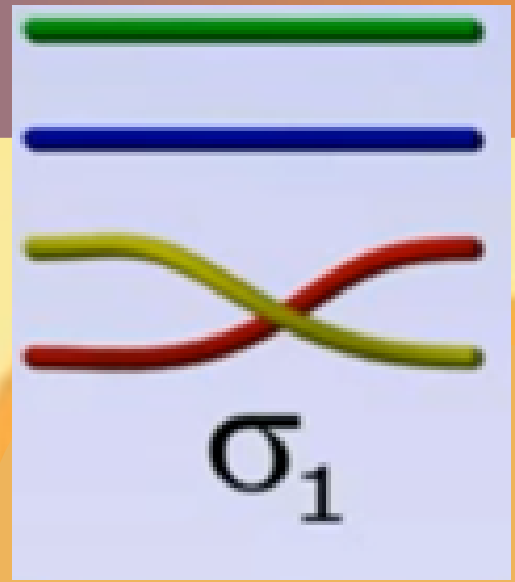
Mathematical View
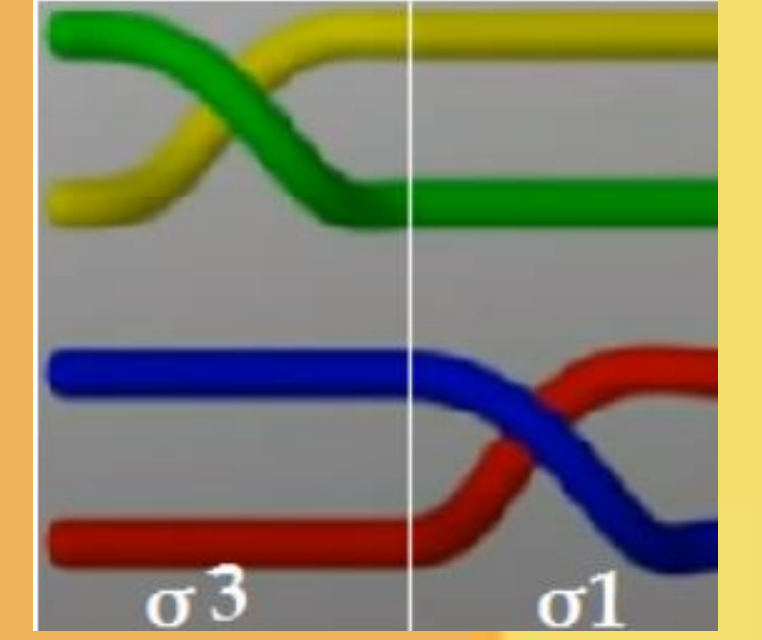
In mathematics, the n-strand braid group Bn, also known as Artin's braid group, is the group whose elements are n-bray equivalence classes, and whose group operation is the composition of braids.

Consider two sets of four objects lying on a table, with the objects in each set arranged in a vertical line, so that one set sits next to the other. Using four strands, each element of the first set is connected to an element of the second set in such a way as to obtain a one-to-one correspondence. Such a connection is called a braid. Often, some strands have to go over or under others, which is crucial.
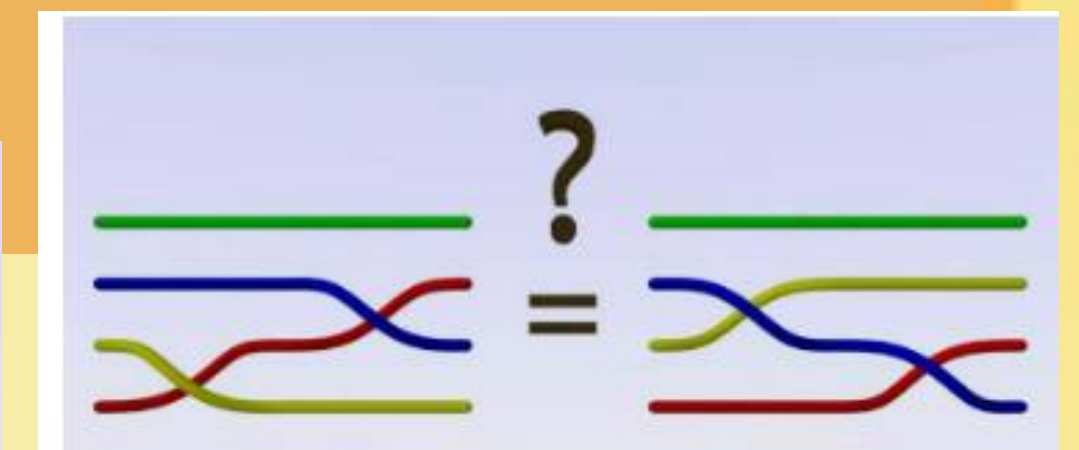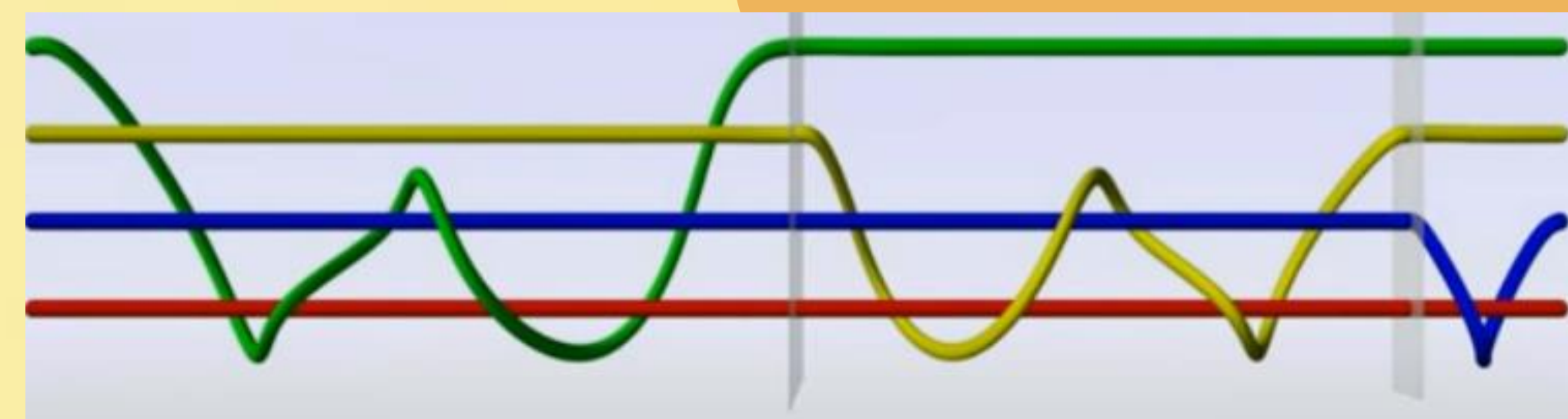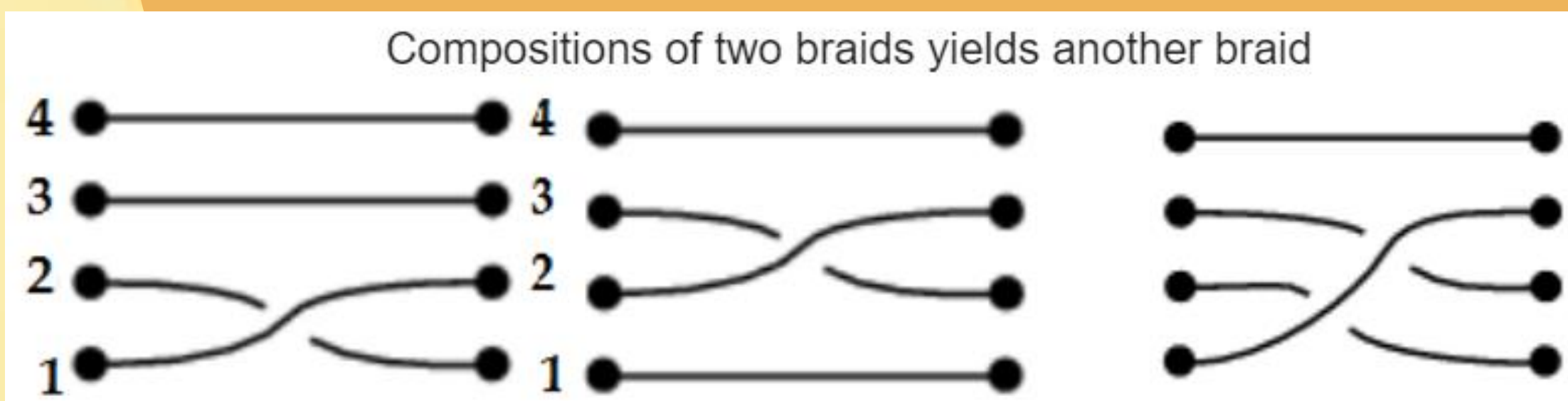
Researcher
Aimilios Vlastos

$$\sigma_1 \sigma_3 \sigma_3^{-1} \sigma_2 \sigma_3^{-1}$$

Compositions of two braids yields another braid

Artistic View

$\sigma 3$ $\sigma 1$

Activity 1: Are the two braids equal?
Activity 2: Can you find the word that describes the following braid? Print the cards or copy the pictures and paste them until you prove that $\sigma_1 \sigma_2^{-1} = 1$

Artist
Filio Bechraki

? =

Common View

A braid is an intricate structure or pattern formed by interlacing two or more strands of a flexible material such as textile threads, wires or hair. Braids are ubiquitous, in hairdressing, jewelry, leather belts, ropes, cakes, bread and many other objects. The braid is one of the oldest ways to decorate objects.