

**Then Try This • Algorithmic Pattern Salon**

# The math of juggling - comparing Solo and Duo juggling patterns

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**Then Try This**

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## ABSTRACT

An artistic and methodological investigation of the limits and aspirations of using siteswap to create and conduct juggling patterns. It is a valuable resource for jugglers of all levels, and it provides a unique perspective on the art and science of juggling.

## Siteswap - the math of juggling - comparing Solo and Duo juggling patterns

### Siteswap: The Math of Juggling

[Tamuz Vardi](#) has created a video comparing solo juggling and duo juggling (usually called passing) through the lens of [siteswap](#), a mathematical and algorithmic approach to juggling.

The video is linked below:

Visit the web version of this article to view interactive content.

juggling labbing - Tamuz Vardi

## Siteswap

A system of notation for describing juggling patterns. It uses a sequence of numbers to represent the number of throws between each catch. For example, the siteswap for the basic cascade juggling pattern is "3". This means that each thrown object has 2 (3-1) objects are thrown before it lands. alternatively, the siteswap "531" describes three throws: a "5" throw (for which 4 [5-1] objects are thrown before it lands), a "3" throw (for which 2 [3-1] objects are thrown before it lands) and a "1" throw (for which 0 [1-1] objects are thrown before it lands - meaning it is thrown again right away).

## Duo juggling

Also known as (a type of) passing, is a type of juggling where two or more jugglers throw and catch objects between each other. Siteswap can also be used to describe duo juggling patterns.

In the video, Tamuz compares solo and duo juggling patterns using siteswap notation. He shows how Siteswap can be used to create a wide variety of patterns, how duo and solo juggling are similar, and how they differ.

The video is an artistic and methodological investigation of the limits and aspirations of using Siteswap to create and conduct juggling patterns. It is a valuable resource for jugglers of all levels, and it provides a unique perspective on the art and science of juggling.

## Also in the video

- [Itamar Hai](#)
- [Ofek Rafaeli](#)
- [Adrian Goldwaser](#)
- [Cameron Ford](#)

Editing:

- [Daniel Ackerman](#)