

<u>The Rubik's Cube</u> is a 3-D combination puzzle originally invented in 1974 by Hungarian sculptor and professor of architecture *Ernő Rubik*. Originally called the **Magic Cube**.

<u>Speedcubing</u> (also known as **speedsolving**) is a competitive sport that involves solving a variety of combination puzzles, the most well-known of which is the 3x3x3 puzzle, as quickly as possible. A person who competitively solves combination puzzles is called a speedcuber (when solved specifically focusing on speed), or a cuber. To solve most puzzles, the contestant has to perform a series of moves, called algorithms, that transform a scrambled puzzle into a solved state.

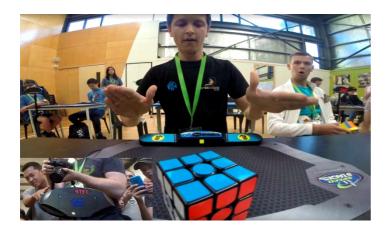
## **World Cube Association (WCA)**



<u>The World Cube Association</u> governs competitions for mechanical puzzles that are operated by twisting groups of pieces, commonly known as 'twisty puzzles'.

Serbian Open 2023 -> Dec 9 - 10, Bački Petrovac

## **Feliks Zemdegs**



## **Max Park**



Records -> Single 3x3 | Max Park 3.13s



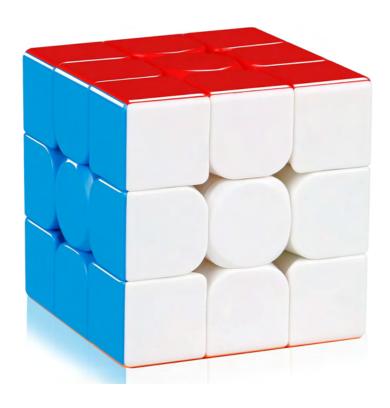
### **Timer**



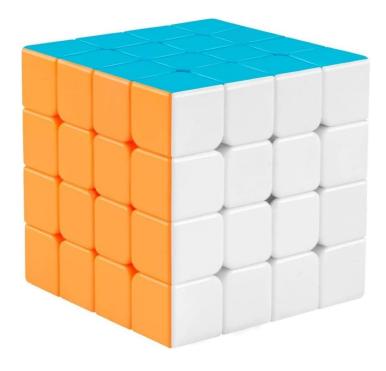
Lubricants



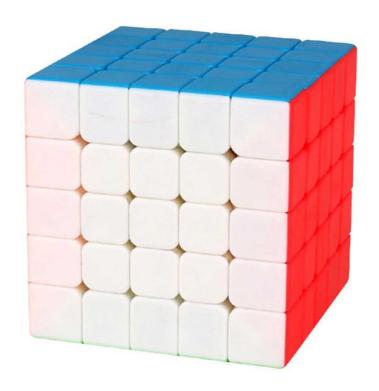
2x2



3x3



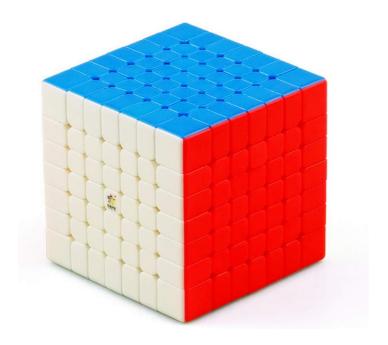
4x4



5x5



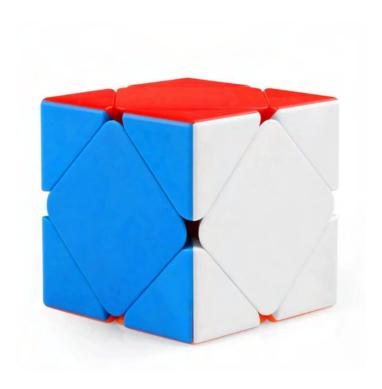
6x6



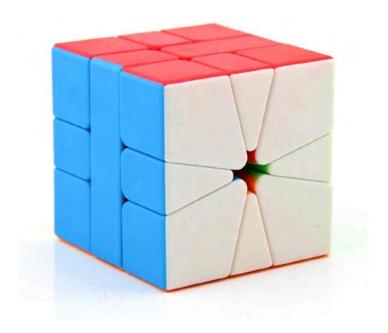
7x7



# Megaminx



Skewb



**Square One** 



Clock

Event	Туре	Result	Person
2.2.2	Single	3.13	Max Park
3×3×3	Average	4.48	Yiheng Wang
222	Single	0.47	Guanbo Wang
2×2×2	Average	1.01	Zayn Khanani
444	Single 3.13 Average 4.48 Single 0.47 Average 1.01 Single 16.79 Average 19.38 Single 32.88 Average 36.46 Single 59.74 Average 1:07.11 Single 1:35.68 Average 1:42.12 Single 12.10 Average 14.15 Single 6.20 Average 20.00 Single 6.20 Average 3.50 Single 2.61 Average 3.50 Single 24.44 Average 26.84 Single 0.75 Average 1.45 Single 0.75 Average 1.53 Single 3.73 Average 4.91 Single 51.96 Average 1.08.76	Max Park	
4×4×4	Average	19.38	Max Park
5×5×5	Single 0.47 Average 1.01 Single 16.79 Average 19.38 Single 32.88 Average 36.46 Single 59.74 Average 1:07.1 Single 1:35.68 Average 1:42.12 Single 12.10 Average 14.15 Single 16 Average 20.00 Single 6.20 Average 8.65 Single 2.61 Average 3.50 Single 24.44 Average 26.84		Max Park
3^3^3	Average	36.46	Max Park
6×6×6	Single	59.74	Max Park
0*0*0	Average	1:07.11	Max Park
7×7×7	Single	1:35.68	Max Park
/^/^/	Average	1:42.12	Max Park
3×3×3 Blindfolded	Single 16.79 Average 19.38 Single 32.88 Average 36.46 Single 59.74 Average 1:07.11 Single 1:35.68 Average 1:42.12 Single 12.10 Average 14.15 Single 16 Average 20.00 Single 6.20 Average 8.65 Single 2.61 Average 3.50 Single 24.44 Average 26.84 Single 0.75 Average 1.45 Single 0.81 Average 1.53	Charlie Eggins	
3×3×3 billidioided	Average	14.15	Tommy Cherry
3×3×3 Fewest Moves	Single	16	Sebastiano Tronto
3×3×3 FeWest Moves	Average	20.00	Wong Chong Wen
	Single	6.20	Max Park
3×3×3 One-handed	Average	8.65	Patrick Ponce
5	Average 4.4  Single 0.4  Average 1.0  Single 16.7  Average 36.4  Single 59.7  Average 1:07.  Single 1:35.  Average 1:42.  Single 12.1  Average 20.0  Single 6.2  Average 3.5  Single 6.2  Average 3.5  Single 1.6  Average 1.6  Average 1.6  Average 1.6  Average 1.6  Average 1.6  Average 3.5  Single 2.6  Average 1.4  Single 1.5  Single 0.7  Average 1.4  Single 0.8  Average 1.5  Single 3.7  Average 4.9  Single 51.9  Average 1.08.  Single 2.10.  Average 1.21  Average 1.21  Average 1.24  Average 1.35  Average 1.4  Single 0.8  Average 1.5  Single 3.7  Average 4.9  Single 51.9  Average 1:08.  Single 2:10.  Average 2:27	2.61	Tommy Cherry
Rubik's Clock	Single 32.88 Average 36.46 Single 59.74 Average 1:07.11 Single 1:35.68 Average 1:42.12 Single 12.10 Average 14.15 Single 16 Average 20.00 Single 6.20 Average 8.65 Single 2.61 Average 3.50 Single 24.44 Average 26.84 Single 0.75 Average 1.45 Single 0.75 Average 1.53 Single 3.73 Average 4.91 Single 51.96		Tommy Cherry
Managinu	Single	24.44	= Leandro Martín López
Megaminx	Average	26.84	== Leandro Martín López
Pyraminx	Single	0.75	Elijah Brown
Pyraminx	Average	1.45	Ezra Shere
Skewb	Single 3.13  Average 4.48  Single 0.47  Average 1.01  Single 16.79  Average 19.38  Single 32.88  Average 36.46  Single 59.74  Average 1:07.11  Single 1:35.68  Average 1:42.12  Single 12.10  Average 14.15  Single 6.20  Average 20.00  Single 6.20  Average 3.50  Single 2.61  Average 3.50  Single 24.44  Average 3.50  Single 0.75  Average 1.45  Single 0.75  Average 1.45  Single 0.81  Average 4.91  Single 51.96  Average 1:08.76  Single 2:10.04  Average 2:27.63	Zayn Khanani	
Skewb	Average	1.53	Carter Kucala
Square 1	Single 3.73		Ryan Pilat
Square-1			Max Siauw
4×4×4 Blindfolded			Stanley Chapel
4444 Diffuldided			Stanley Chapel
5×5×5 Blindfolded	Average 1:42.12  Single 12.10  Average 14.15  Single 16  Average 20.00  Single 6.20  Average 8.65  Single 2.61  Average 3.50  Single 24.44  Average 26.84  Single 0.75  Average 1.45  Single 0.81  Average 1.53  Single 3.73  Average 4.91  Single 51.96  Average 1:08.76  Single 2:10.04  Average 2:27.63	Stanley Chapel	
שטוווווט פאכאכ	Average	2:10.04 2:27.63	Stanley Chapel
3×3×3 Multiple Blindfolded	Single	62/65	Graham Siggins

Even	t Type		R	esult	Person			<b>Event Name</b>
Single	e 3x3x3		3.	13	Max Park		(	Pride in Long Beach 2023
Avera	ige 3x3	3x3	4.	48	Yiheng Wang		/ang	Mofunland Cruise Open 2023
1	2	3		4		5		
4.72	4.72	3.9	99	(3.95	)	(5.99)		

### **Namings and Acronyms**

BM = Beginner Method

Cross = Plus or X

F2L = First Two Layers

OLL = Orient Last Layer

PLL = Permute Last Layer

CFOP = Cross -> F2L-> OLL-> PLL

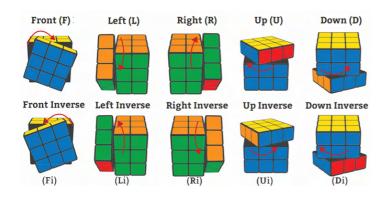
### **Beginner method**

Video guides playlist

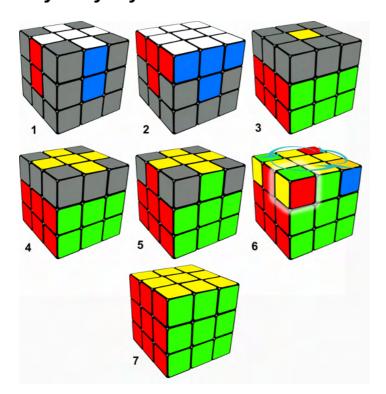
#### Methods:

- 1. CFOP (Fridrich)
- 2. Roux
- 3. ZZ (Zbigniew Zborowski)
- 4. Corners-first
- 5. Fewest Moves
- 6. Blindfolded

#### Move notation



## Layer by layer



### **Steps for progress**

1. Beginner method

BM -> BM Faster -> F2L

2. Beginner CFOP

2-Look OLL -> 2-Look PLL -> Advanced F2L -> Dot skip

3. Full CFOP:

21 PLLs algoritms -> 57 OLLs algoritms

4. Advanced algoritms and variations

Winter Variation, OLL skips(OLS)....

### Other improvements

- Fingertricks
- Lookahead
- Pseudoslotting (F2L)
- <u>Cube customization</u> -> Screws, Springs, Magnets, Lube
- Bluetooth cube

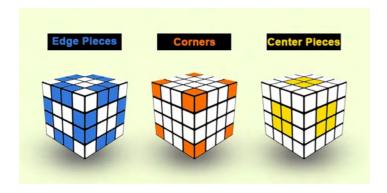
## **Big cubes**

#### Video tutorial

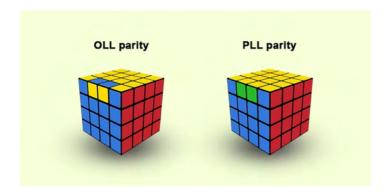
### **Methods:**

- 1. Reduction
- 2. Yau
- 3. Hoya

### Reduce to 3x3



### **Parity**



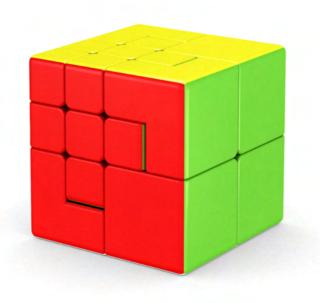
## Other



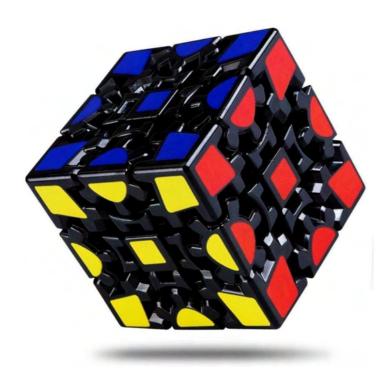
**Mirror cube** 



**Cube for blind** 



Pupet cube



**Gear cube** 



Ex mars cube -> electornic



**Robot solvers** 

# Art



### **Useful links**

<u>Speedcube.rs</u> -> Subotica, delivery only

Gadget 4 Gift -> BG, NS , Nis, store and delivery

<u>JPerm channel</u> -> Youtube tutorials

<u>Dan's Cubing Cheat Sheet App</u> -> algoritms with animations