



Harri Kuisti

RUBIK'S CUBE

Harri Kuisti

Rubik's Cube

Only 3+4 Moves
to Remember

© 2024 Harri Kuisti

Kustantaja: BoD – Books on Demand, Helsinki, Suomi

Valmistaja: BoD – Books on Demand, Norderstedt, Saksa

ISBN: 978-952-80-7025-2

Can you count your fingers?
Congratulations!
Solving the cube is easy for you.

Do you need memory capacity or brain power?

Solving the Rubik's cube is sometimes seen either as an intellectual feat or as a challenge to your memory. Both of these notions are far from reality. I truly respect mathematicians that are able to turn the cube into a fascinating exercise of group theory. I am sure they are right but you do not need to think like them in order to solve the cube.

Many on the other hand have made it all a matter of speed. Solving the cube fast is not possible without memorizing a large number of series of moves or algorithms as they are called.

This book shows a third way: Understanding the cube in simple terms and reducing the solution to tiny bits. You do not need to strain your brain or memory to any large extent. Can you count your fingers? Then you are fit to the simple task of solving the Rubik' cube.

Standard moves

First some basic information: The Left-, Right-hand side, Upside, Downside, Front or Back layers are turned in clockwise direction with moves called L, R, U, D, F and B. The counter-clockwise turns are marked by l', r', u', d', f' and b'.

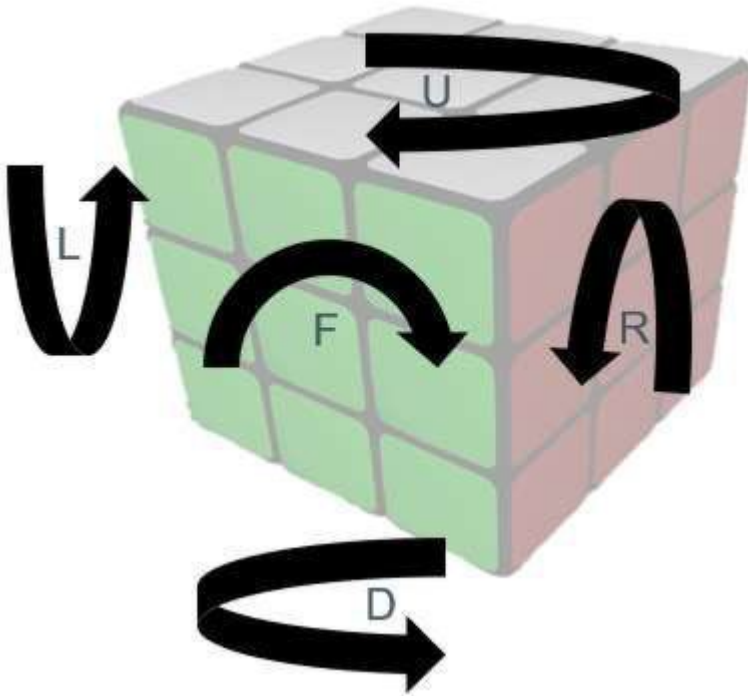


Figure 1. Different clockwise moves of the Rubik's cube. The one turning the backside (B) facet or plane clockwise (B) is not shown.

Table 1. The naming of the moves.

		Clockwise	Counter- clockwise
Left hand -side plane		L	l'
Right hand -side plane		R	r'
Frontside plane		F	f'
Backside plane		B	b'
Upside plane		U	u'
Downside plane		D	d'

The phases of the solution

The famous Beginner's Solution is based on solving the cube layer by layer. The method presented in this book solves the edges first and then the corners. This is no new idea as such. The new thing (as far as I know) is that only one algorithm of three moves is needed for placing and orienting the edges correctly, and just one algorithm of four moves is needed for doing the same for corners.

I will soon show those elementary series of moves. At this stage it is enough to say that the process has two phases:

- 1) Solving edges
- 2) Solving corners

Solving the edges can be divided into separate stages:

- 1) Creating the white cross.
- 2) Solving the edges of the sides.
- 3) Creating the yellows cross.
- 4) Placing the pieces of the yellow cross correctly.

Also solving the corners can be divided into separate stages:

- 1) Placing the corners of the layer with white center piece.
- 2) Placing the corners of the layer with yellow center piece.
- 3) Orienting the corners.

Creating the white cross

Almost all methods invented for solving the Rubik's cube begin with creating a white cross. This means turning all planes so that on the plane that have a white middle piece there appear white colour on all edges. It does not matter if there are even more white pieces around the cross. We do not need to care about that in this phase.

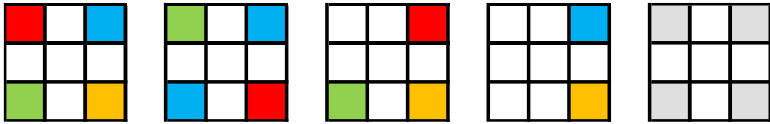


Figure 2. Examples of “white cross”. The colours around the white cross can be whatever, and it does not matter. This is illustrated by the right-most pattern where the grey stands for “any colour”.

You can easily create a cross of any colour, as you will see if you just turn the planes for fun. There is nothing difficult in this phase and nothing to memorize. The cube itself will guide you in this.

To solve the Rubik's cube really fast requires that you memorize over fifty series of moves or algorithms. Even the famous Beginner's Method includes many algorithms that you simply have to learn by heart, even if it is often your fingers that seem to remember the moves better than your brain.

In this small book I will show how you can solve the cube by applying one series of three moves for edges and one series of four moves for the corners. You read correctly: You need to learn only $3+4 = 7$ moves in order to solve the whole cube. And it is even easy to understand how these moves work, so you do not need to rely on your memory.
 $3 + 4 = 7 = \text{Easy!}$

BoD

